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Profiling and Understanding EFL University Students' Purposes for Using ChatGPT: A Latent Profile Analysis

Myunghwan Hwang
Yonsei University

Eunmi Lee
Keimyung University

Hee-Kyung Lee
Yonsei University

This study aims to identify distinct profiles, or groups among Korean EFL university students based on their purposes for using ChatGPT and to explore the effects of gender, academic discipline, and English self-efficacy on these profiles. Additionally, it examines how these profile types influence ChatGPT acceptance. A quantitative approach was employed, involving data collection through an online survey. A total of 400 valid responses were analyzed using latent profile analysis (LPA), Chi-square tests, and One-Way ANOVA. The findings of the study are presented as follows: First, five distinct profiles were identified: “Active Users,” “Passive Users,” “Input/Output Seekers,” “Comprehensive Active Users,” and “Translation-Focused Users.” Second, gender did not significantly influence profile type, whereas academic discipline and English self-efficacy did. Third, significant differences were observed in learners' perceived usefulness, ease of use, and intention to continue using ChatGPT based on their profile type. These findings emphasize the importance of tailoring educational interventions to user profiles to enhance the acceptance and effective use of ChatGPT in English language teaching and learning.

본 연구는 한국 대학교 영어 학습자를 대상으로 ChatGPT 사용 목적에 따른 학습자 유형을 식별하고, 성별, 전공, 영어 자기 효능감이 이러한 유형 구분에 미치는 영향을 탐구하고자 한다. 또한, ChatGPT 사용 목적에 따른 학습자 유형이 ChatGPT 수용에 미치는 영향을 분석한다. 이러한 연구 목적을 바탕으로 온라인 설문 조사를 통해 총 400 개의 유효 응답이 확보되었다. 수집된 데이터는 잠재 프로파일 분석, 카이제곱 검정, 일원 분산분석을 통해 분석되었다. 연구 결과를 정리하면 다음과 같다. 우선, "적극적 사용자", "소극적 사용자", "입력/출력 탐색자", "포괄적 적극적 사용자", "번역 중심 사용자" 등, 총 다섯 개의 ChatGPT 사용 목적에 따른 학습자 유형이 확인되었다. 다음으로, 성별은 학습자 유형을 구분하는 데 유의미한 영향을 미치지 않았으나, 전공과 영어 자기 효능감 수준은 영향을 미치는 것으로 나타났다. 마지막으로, ChatGPT 사용 목적에 따른 학습자 유형 집단에 따라 ChatGPT 에

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대한 유용성, 용이성 및 지속적 사용 의도에 대한 인식 차이가 통계적으로 유의미하게 나타났다. 이러한 연구 결과는 ChatGPT 의 영어 교육 활용도를 높이기 위해 학습자들의 ChatGPT 사용 목적을 고려한 교육적 개입이 필요함을 시사한다.

Keywords: ChatGPT, Latent profile analysis (LPA), ChatGPT purpose profile, ChatGPT usage, University students, ChatGPT-integrated language learning

Introduction

Following its 2022 launch by OpenAI, ChatGPT has garnered considerable interest from the English education community due to its extensive capabilities, distinguishing it from conventional English-learning chatbots (Hwang & Lee, 2024). For instance, ChatGPT can produce lengthy, high-quality text that rivals human output (Raheem et al., 2023), and its translation skills are outstanding. Additionally, ChatGPT is capable of drawing pictures, analyzing data, summarizing texts, and engaging in context-aware communication with users. These capabilities are considered highly advantageous for English learners.

Given such ChatGPT's versatile potential in English learning, a prominent topic of debate today revolves around how best to integrate it into English learning practices. This debate is intrinsically tied to learners' acceptance of ChatGPT, as learners' willingness to adopt the technology is essential for successful integration, influencing usage, learning outcomes, and even sustainability. Thus, scholars in the field of English education have explored strategies for its smooth adoption (Linh & Wu, 2023; Liu & Ma, 2024), particularly employing the Technology Acceptance Model (TAM) and investigating the factors affecting learners' adoption of ChatGPT (Hellemans, 2023; Liu & Ma, 2024; Peng et al., 2023). As part of outcomes from these studies, they have found that ChatGPT acceptance largely can depend on learners' perception such as usefulness (Alrishan, 2023; Peng et al., 2023), ease of use (Liu & Ma, 2024), intrinsic motivation (Zou et al., 2023) and instructors' support (Alrishan, 2023). These findings provide valuable insights into the conditions where learners are more likely to adopt ChatGPT.

However, despite these contributions, existing research on the subject has several limitations. Notably, previous studies have predominantly adopted a variable-centered approach, as exemplified by Peng et al. (2023), Hallemans (2023), and Liu and Ma (2024), who examined ChatGPT adoption using TAM, assuming a uniform application of ChatGPT among learners. While this approach effectively identifies key factors influencing learners' acceptance and prioritizes them based on their relationships, it fails to account for the diversity of learners' usage patterns. Put simply, by treating ChatGPT as a uniformly applied tool, these studies overlook the possibility that learners may use ChatGPT for different purposes. Consequently, they fail to adequately consider the distinct characteristics of individual learners in relation to their usage purposes and patterns.

Beyond that, aside from this limited understanding of English learners' usage patterns based on their purposes, there is still ambiguity surrounding the biological, environmental, and motivational factors—known to influence the use of new technologies—that determine learners' ChatGPT usage. Furthermore, it is unclear how these usage patterns affect learners' perceptions of ChatGPT, such as its usefulness, ease of use, and intention to continue using it. Understanding what drives different uses of ChatGPT among English learners and how these varying uses influence learners' perceptions is crucial for the effective integration of the system into their learning process.

Based on those research gaps, this research aims to overcome the limitations of previous studies by categorizing learners' purposes for using ChatGPT through latent profile analysis (LPA)—a human-focused analytical approach that focuses on identifying distinct learner subgroups based on shared characteristics rather than examining variables in isolation—and exploring the characteristics of these purposes. We further aim to identify the reasons behind learners' preference for specific usage purposes of ChatGPT, taking into account gender as a biological factor, academic discipline as an environmental factor, and

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English self-efficacy as a motivational factor. Lastly, we investigate the relationships between the identified purpose groups and key antecedent factors—perceived usefulness, perceived ease of use, and perceived intention to continue using ChatGPT—that might affect learners' acceptance of ChatGPT. Through these inquiries, the study seeks to offer a comprehensive understanding of the characteristics, causes, and consequences of learners' purposes for using ChatGPT in English learning, and ultimately provide recommendations for the successful integration of ChatGPT into their learning process. The research questions guiding this study are outlined below:

1. What distinct profiles can be identified among university students based on their purposes for using ChatGPT, and what traits define each profile?
2. Are there differences in these profile types based on students' gender, major, or level of English self-efficacy?
3. Are there differences in the antecedent conditions influencing the acceptance of ChatGPT—such as perceived ease of use, perceived usefulness, intention to continue using—depending on the profile type?

Literature Review

The Use of ChatGPT in ELT

The purpose of using ChatGPT in the domain of English learning can be defined as the specific reasons learners turn to ChatGPT while studying English. Understanding these purposes is crucial for analyzing how learners engage with the tool. Recognizing the importance of understanding learners' purposes for using ChatGPT, an increasing amount of research has delved into this area. These studies reveal that learners frequently utilize ChatGPT for brainstorming ideas (Han et al., 2023; Lee & Park, 2023; Zeng & Mahmud, 2023), correcting English grammar, spelling, and punctuation (Han et al., 2023; Li et al., 2024), obtaining feedback and evaluations on their English writing (Han et al., 2023; Li, 2024; Long, 2024), and editing and refining their texts (Han et al., 2023; Li et al., 2024; Zeng & Mahmud, 2023). Beyond that, previous research suggests that EFL learners turn to ChatGPT for searching for meta-knowledge about grammar and composition (Lee & Park, 2023; Li, 2024; Zeng & Mahmud, 2023), performing translation tasks (Han et al., 2023; Lee & Park, 2023; Li, 2024), summarizing content, learning vocabulary and expressions (Lee & Park, 2023), and accessing genre-specific text samples (Han et al., 2023).

While previous studies provide useful insights into the varied uses of ChatGPT among EFL learners, they often fail to examine learners' engagement patterns with the tool. More specifically, some learners can take an active approach by integrating grammar checking, feedback evaluation, and content summarization into their learning process. In contrast, others may passively rely on AI-generated outputs without actively processing the language input. Additionally, some learners may primarily use ChatGPT as a search engine, consulting it only to look up word definitions or seek grammatical explanations. These variations suggest the existence of distinct user profiles characterized by different engagement patterns. Research on ChatGPT usage patterns in higher education contexts indicates that such usage patterns emerge as learners establish habitual and strategic approaches to incorporating the tool into their studies (Stojanov et al., 2024). Notably, because these patterns provide a more accurate reflection of how learners engage with ChatGPT than a simple identification of usage purposes, exploring them in greater depth is crucial.

Accordingly, this study seeks to investigate EFL learners' ChatGPT usage profiles to gain deeper insights into their engagement with this versatile chatbot. By examining engagement patterns rather than merely identifying usage trends, this research endeavors to deepen the understanding of how learners integrate ChatGPT into their English learning process.

Technology Acceptance Model and Its Application in ELT

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For ChatGPT to be successfully integrated into English learning, it is crucial that learners embrace the tool and consistently incorporate it into their learning. In response, scholars in English education have explored the factors that facilitate EFL learners' smooth adoption of ChatGPT, frequently applying the Technology Acceptance Model (TAM). This theoretical framework analyzes the process by which individuals accept new technologies, traditionally emphasizing two primary factors: perceived usefulness (i.e., the belief that a technology will enhance performance) and perceived ease of use (i.e., the belief that it will require minimal effort) (Venkatesh & Bala, 2008).

A review of prior studies utilizing TAM to examine ChatGPT adoption reveals key insights. For example, Hallemans (2023) demonstrated that social factors, including social norms and perceived image, significantly influence perceived ease of use and perceived usefulness, both of which contribute to a positive attitude toward ChatGPT adoption. Similarly, Liu and Ma (2024) found that both perceived usefulness and ease of use directly influence users' perceptions, ultimately determining their intention to continue using ChatGPT. Furthermore, Qu and Wu (2024) explored the connections between perceived usefulness, perceived ease of use, emotional experiences (e.g., boredom, curiosity, and joy), and the intention to engage with ChatGPT. Their findings indicate that learners who view ChatGPT as beneficial tend to have more positive emotional experiences, which in turn reinforce their intention to persist in using the tool.

While previous studies offer valuable insights into the cognitive, affective, and behavioral aspects of EFL learners' adoption of ChatGPT, they fall short in fully capturing the complexity of this process within language learning contexts. One major limitation is their predominant focus on perceived usefulness and ease of use, neglecting broader pedagogical and ethical considerations that shape these perceptions. This limitation stems from the inherent constraints of TAM, which offers only a skeletal framework for understanding adoption. As a result, researchers must integrate additional factors to fully explain perceptions of usefulness and ease of use within the specific technology use context. More specifically, unlike business or general technology settings where TAM is widely applied, language learning encompasses motivational, cultural, interactive, and communicative dimensions. That is, factors such as teacher guidance, peer collaboration, learner motivation, proficiency levels, cultural attitudes toward AI in education, and ChatGPT's capacity to support higher-order language skills (e.g., critical thinking and discourse competence) can significantly influence EFL learners' perceived usefulness and ease of use, ultimately affecting sustained engagement with the technology. Therefore, studies employing TAM to examine learners' adoption of ChatGPT should incorporate these English learning-related factors as antecedents of perceived usefulness and ease of use.

Moreover, studies grounded in TAM tend to assume a linear adoption process, failing to account for the fluctuating nature of learners' engagement with ChatGPT. According to relevant studies, EFL learners' interactions with ChatGPT are often dynamic and iterative (Hwang et al., 2024), shaped by evolving trust, feedback quality, and the degree to which AI-generated responses align with their linguistic goals. Accordingly, learners may initially perceive ChatGPT as highly useful but later reduce their reliance due to concerns over content accuracy, ethical considerations (e.g., plagiarism risks), or the lack of human-like interaction. In short, the linear perspective of TAM is insufficient to fully capture the dynamic interaction between learners and ChatGPT.

Despite such limitations of TAM, its adaptability and extensibility across different usage contexts makes it a valuable theoretical foundation for understanding the diverse purposes and patterns of EFL learners' ChatGPT usage (Venkatesh & Bala, 2008). The original TAM, which focuses solely on perceived usefulness and ease of use to explain technology adoption (Davis, 1989), has been expanded through the addition of antecedents to explain perceived usefulness (TAM2) and perceived ease of use (TAM3). Among these, TAM3 is the most advanced framework and can serve as a theoretical foundation for understanding EFL learners' purposes in using ChatGPT and their potential usage profiles.

Specifically, TAM3 introduces key determinants of perceived usefulness (PU), such as subjective norm (e.g., external recommendations or peer/teacher influence), job relevance (e.g., ChatGPT's perceived utility for academic tasks), output quality (e.g., reliability and response quality), and result demonstrability (e.g.,

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observable improvements in English learning outcomes) (Venkatesh & Bala, 2008). These factors shape students' perceptions of ChatGPT's effectiveness for language learning. Learners who consider ChatGPT highly relevant to their academic goals and recognize its high-quality responses may develop a strategic or academic-oriented usage profile, utilizing it for writing assistance, vocabulary expansion, and language proficiency enhancement. Conversely, those who perceive its usefulness as low—due to concerns about accuracy or ethical implications—may demonstrate minimal engagement, using ChatGPT sporadically for basic tasks like information retrieval, word definitions, or translation.

Similarly, perceived ease of use (PEOU) is influenced by factors such as computer self-efficacy (e.g., confidence in using ChatGPT for learning), perceived enjoyment (e.g., satisfaction or engagement in the learning process), objective usability (e.g., ease of navigating ChatGPT's functions), and prior experience (e.g., familiarity with AI-driven tools or digital learning platforms) (Venkatesh & Bala, 2008). Learners with higher technological confidence are more likely to adopt interactive and autonomous learning approaches, using ChatGPT for conversation practice, pronunciation feedback, or gamified learning experiences. In contrast, those who struggle with its interface or responses may limit their engagement to simpler tasks, such as grammar checks or predefined prompts, aligning with a low-engagement profile.

Meanwhile, the varying purposes for which technology is utilized can shape users' perceived usefulness, perceived ease of use and their intention to continue using it. This is because users' experiences with technology (Venkatesh & Bala, 2008) and their perceived task technology fit (Dishaw & Strong, 1999) can differ based on their intention to use technology. This dynamic also applies to the use of ChatGPT. For example, learners may find that using ChatGPT for English writing and feedback enables them to complete tasks more efficiently, brainstorm more creatively, and correct errors with greater precision and speed (Bibi & Atta, 2024; Mun, 2024). These advantages may enhance the perception that ChatGPT is well-suited for addressing linguistic challenges and generating focused writing topics, thereby increasing its perceived ease of use, usefulness, and intention to continue using it for these purposes. However, learners may also encounter situations where ChatGPT produces inaccurate content or introduces irrelevant information that diverges from the author's original intent (Xu & Jumaat, 2024). In such cases, they may need to correct these errors through repeated interactions with ChatGPT, and persistent issues, though repeated trials are made, could lead to mistrust and discomfort in using ChatGPT for specific tasks. As a result, learners might conclude that ChatGPT is not suitable for subjective or abstract tasks, such as providing content feedback or generating text, which could adversely affect its perceived ease of use, usefulness, and intention to continue using it.

Factors Influencing ChatGPT Usage in ELT

In general education, studies indicate that learners' gender, academic discipline, and self-efficacy shape their interaction with ChatGPT. Specifically, academic discipline determines the types of tasks learners engage in, while gender differences influence attitudes toward AI, and engagement styles. Additionally, self-efficacy impacts learners' confidence in using AI. These findings align with the TAM, which identifies gender and the field of technology use as key determinants of adoption patterns (Goswami & Dutta, 2016; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000), and with Social Cognitive Theory, which emphasizes self-efficacy as a key influence on learners' engagement in specific tasks (Bandura, 1997).

These findings hold particular relevance for ChatGPT-assisted English learning, where students from diverse academic backgrounds and with varying levels of English self-efficacy rely on ChatGPT for a range of language-related tasks, including writing support, grammar correction, idea generation, and text comprehension. As a result, the biological, environmental, and motivational factors that shape general ChatGPT use are also likely to influence how EFL learners adopt and utilize the tool for language learning. The specific relationships between each factor and ChatGPT usage purposes are elaborated upon below.

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Gender

The influence of gender on engagement with ChatGPT is multifaceted, with evidence supporting both gender-specific and gender-neutral effects. Some research highlights notable gender differences in perceptions, attitudes, and usage patterns. For example, studies show that female users may experience more technical difficulties and perceive higher risks when using ChatGPT compared to males. This is supported by Singh et al. (2023), who found that female students in the UK were more skeptical about ChatGPT's educational benefits, underscoring the need for clearer guidelines. Similarly, Yilmaz et al. (2023) observed that although both genders share similar overall attitudes toward ChatGPT, female users were more concerned about its user-friendliness, which impacted their engagement differently. On the other hand, female students were found to interact with ChatGPT more frequently, possibly due to gender-based differences in technology use, with males tending toward problem-solving tasks and females focusing on language-related activities (Bouzar et al., 2024).

Still, other studies suggest that gender does not significantly affect ChatGPT engagement. Research indicates that gender does not predict attitudes toward or usage of ChatGPT (Sallam et al., 2024). Instead, factors such as the tool's perceived usefulness, ease of use, and associated risks are more influential. Romero-Rodríguez et al. (2023) also confirmed that gender does not significantly influence ChatGPT acceptance among university students, with no notable differences in perceived usefulness or ease of use between genders.

Academic Disciplines

Users' academic disciplines can significantly influence how they utilize ChatGPT for learning English, as the tasks emphasized in each discipline vary, leading to diverse objectives for ChatGPT usage across different fields. For instance, students in Arts, Humanities, and Social Sciences may value ChatGPT for its creativity, proofreading, and brainstorming, whereas students in Applied and Natural Sciences might find it essential for technical studies and professional development (Aristovnik et al., 2024). Furthermore, the variability in ChatGPT's performance across different disciplines can also play a role; ChatGPT's performance reportedly excels in areas that require advanced reasoning and higher-order thinking, such as programming and economics, but is less effective in disciplines like sports sciences and psychology (Lo, 2023).

In conclusion, the interaction between the types of tasks prioritized in each discipline and ChatGPT's performance on those tasks can lead to varying perceptions and acceptance of the tool across different academic fields. This can be further supported by relevant prior studies. For example, Alotaibi and Alshehri (2023) found that students in technical fields like engineering and computer science are more likely to view ChatGPT as a valuable tool for data analysis and problem-solving. Meanwhile, Von Garrel and Mayer (2023) observed that arts and social sciences students may utilize ChatGPT for analyzing language and text. Likewise, Upadhyay et al. (2023) confirmed that humanities students tend to view ChatGPT as an intelligent collaborator and feedback provider, while those in social sciences and engineering see it primarily as a feedback tool. In summary, these findings underscore the importance of considering disciplinary contexts when using ChatGPT for English educational purposes, underscoring the validity of exploring how different academic disciplines impact the use of ChatGPT for language learning.

Self-Efficacy

Self-efficacy, defined as the belief in one's capacity to accomplish specific goals (Bandura, 1997), has consistently been identified as a powerful predictor of success in various English-related tasks, such as writing, speaking, and performing well on English achievement tests (Hwang & Lee, 2019; Oyama, 2022). Notably, this belief in personal competence acts as a major motivator, influencing both the initiation and sustained involvement in particular activities. These self-efficacy traits are, therefore, expected to shape not

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only how learners use ChatGPT but also the purposes behind their use of the tool.

While research on the connection between self-efficacy and ChatGPT usage is still in its infancy, some studies have begun to uncover a strong link between a learner's level of self-efficacy and their engagement with ChatGPT. For example, Bouzar et al. (2024) discovered that university students with higher writing self-efficacy spent more time using ChatGPT. Likewise, Bin-Nashwan et al. (2023) demonstrated that researchers with high academic self-efficacy were more likely to incorporate ChatGPT into their scholarly work. Moreover, Zhang et al. (2024) suggested that academic self-efficacy might affect learners' reliance on AI tools like ChatGPT, particularly when academic stress plays a mediating role.

Methodology

Participants and Data Collection

A quantitative approach was adopted to address our research questions, using a questionnaire for data collection through a convenience sampling method. The online survey was conducted via the Google Survey platform, with the link distributed through Korean social media platforms (e.g., Naver Cafes) and the learning management system (LMS) of a class taught by one of the study members. The survey spanned approximately three months. The recruitment criteria were as follows: (1) participants must be Korean EFL college students, and (2) participants must have experience using a generative AI chatbot for autonomous language learning. The data collection process followed ethical guidelines and was approved by the Institutional Review Board (IRB)[1]. All participants provided informed consent after being briefed on the study's purpose and procedures. Confidentiality and anonymity were strictly maintained throughout the research.

Based on these procedures, 783 Korean EFL college students were initially recruited according to the criteria. Of these, 383 samples were excluded: 41 individuals declined to participate in the survey. 266 respondents indicated they had never used a chatbot for English learning, 76 respondents reported using other chatbots, such as Bing and Bard, but not ChatGPT. Consequently, 400 samples were included in the final data analysis, and the participants' demographic information is displayed in Table 1 below.

Table 1
Participants' Demographic Information

Variables	Categories	*N*	%
Weekly ChatGPT Usage Time	Less than 30 minutes	139	34.8
	30~60 minutes	168	42.0
	60~120 minutes	71	17.7
	More than 2 hours	22	5.5
Language Preferences in ChatGPT Interactions	Predominantly Used English	99	24.8
	Predominantly Used Korean	136	34.0
	English 50%, Korean 50%	125	31.3
	Exclusively Used Korean	35	8.8
	Exclusively Used English	5	1.3
Gender	Male	217	54.3
	Female	183	45.7
Age	20-22	261	65.3
	23-25	99	24.7
	Older than 26	40	10.0

[1] This study was approved by the Institutional Review Board (IRB) of the first author's affiliated university (Approval No.: 7001988-202410-HR-2123-07). The final approval was granted on December 8, 2023. As the study involved a large-scale online survey, written consent was waived and replaced with online consent.

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Academic Disciplines	Humanities	83	20.8
	Social Sciences	92	23.0
	Natural Sciences	36	9.0
	Engineering	118	29.5
	Other Fields	71	17.7
Years of Learning English	Less than 10 Years	151	37.8
	Less than 15 Years	222	55.5
	Over 15 Years	27	6.8

Instruments

In this study, participants' gender and academic disciplines were collected as demographic information during the survey process. In addition, to explore participants' perceptions of ChatGPT's purpose, their English self-efficacy, perceived usefulness, ease of use, and intention to continue using ChatGPT, the following scales were applied.

Model for the Purposes of Using ChatGPT

A total of 19 items were developed to evaluate the purpose of using ChatGPT for English learning. These items were specifically drawn from prior studies on the use of ChatGPT in general education and English learning (Han et al., 2023) and from commercially available reference materials that offer guidance on using ChatGPT for English language study (Ban et al., 2023). Some items were modified by the research team to better align with the objectives of the study.

After developing the items, an exploratory factor analysis was performed to uncover the common factors underlying the variables and to reduce dimensionality. The analysis revealed six factors: Factor 1 - Obtaining language inputs (N = 5, factor loadings = .4~.65), Factor 2 - Practicing and preparing tests (N = 3, factor loadings = .75~.76, communalities = .36~.69), Factor 3 - Writing and evaluating English texts (N = 4, factor loadings = .39~.73, communalities = .58~.67), Factor 4 - Learning English vocabulary and expressions (N = 3, factor loadings = .59~.95, communalities = .37~.71), Factor 5 - Learning and polishing grammar (N = 2, factor loadings = .66~.79, communalities = .45~.80), and Factor 6 - Translating (N=2, factor loadings = .66~.79, communalities = .47~.69).

Next, a confirmatory factor analysis (CFA) was performed to evaluate the overall measurement model's validity and reliability. It was found that three items in Factor 1 (e.g., chatting with ChatGPT, asking about the nuances of English expressions, and requesting examples of English vocabulary) negatively affected the model fit and were therefore excluded. Factor 1 was subsequently renamed Obtaining samples, to better reflect the nature of the remaining items. The final reliability metrics were as follows: Cronbach's alpha = .84, Construct Reliability (CR) = .87, Average Variances Extracted (AVE) = .72 for Factor 1 (N = 2); Cronbach's alpha = .82, CR = .83, AVE = .61 for Factor 2 (N = 3); Cronbach's alpha = .76, CR = .78, AVE = .47 for Factor 3 (N = 4); Cronbach's alpha = .75, CR = .82, AVE = .62 for Factor 4 (N = 3); Cronbach's alpha = .72, CR = .77, AVE = .62 for Factor 5 (N = 2); Cronbach's alpha = .70, CR = .83, AVE = .72 for Factor 6 (N = 2) (refer to APPENDIX 1 for final items).

Meanwhile, discriminant validity was assessed by comparing the squared correlations between factors with their AVE values. The highest correlation was observed between Factor 1 and Factor 3 (r = .72), with its square (R^2 = .52) exceeding the AVE of Factor 3. Accordingly, to confirm that Factor 1 and Factor 3 were distinct, their correlation confidence interval (CI) was checked and found not to include 1 (CI = .64~.8), confirming their discriminant validity.

Finally, the overall measurement model demonstrated satisfactory fit with RMR = .05, SRMR =.06, CFI = .93, TLI = .91, RMSEA = .07, indicating satisfactory model fit. The items were rated on a 4-point Likert scale where 1 = "Strongly Disagree," 2 = "Disagree," 3 = "Agree," and 4 = "Strongly Agree."

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Survey of English Learning Self-Efficacy

The English self-efficacy of participants was measured using items adopted and adapted from the Scale of Self-Regulated Language Learning (S2RLL) by Hwang and Lee (2019) and the Questionnaire of English Self-Efficacy (QESE) scale, initially developed by Wang (2004) and validated for Korean learners by Wang et al., (2013). Owing to the text-based nature of learner-ChatGPT interactions, this study concentrated solely on the self-efficacy items related to reading and writing out of the four English skills. Specifically, four items were selected to assess reading efficacy and five for writing efficacy, based on their relevance, scope of measurement, and evaluation efficiency (see APPENDIX 2). The items were rated on a 5-point Likert scale, where 1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree*, and 5 = *Strongly agree*. Later, the average score of the items was employed to represent the degree of English self-efficacy for each participant.

Upon reviewing the reliability and validity of the overall measurement model for English reading and writing efficacy, the reading efficacy scale exhibited a Cronbach's alpha of .85, CR of .86, and AVE of .68, while the writing efficacy scale showed a Cronbach's alpha of .91, CR of .90, and AVE of .76. Additionally, the squared correlation between the two factors was .64, which was lower than their respective AVE values, confirming secure discriminant validity between the two factors. Finally, the measurement model fit through CFA was evaluated, and the results demonstrated that the RMR was .03, SRMR was .03, CFI was .97, TLI was .97, CFI was .98, and RMSEA was .08, indicating a satisfactory model fit.

Survey for ChatGPT Acceptance Using TAM

For the study, we adopted and adapted 11 items from prior research, specifically from Davis (1989), Venkatesh and Davis (2000), and Venkatesh and Bala (2008), all of which outlined the concepts of the TAM (refer to APPENDIX 2). Specifically, 3 items measured the intention to continue using ChatGPT (ICUC), 4 items assessed perceived usefulness (PU), and 4 items evaluated perceived ease of use (PEU). A 5-point Likert scale was used to rate these measures, with 5 indicating 'strongly agree' and 1 indicating 'strongly disagree.'

The reliability metrics were as follows: Cronbach's alpha = .83, CR = .88, and AVE = .72 for ICUC; Cronbach's alpha = .83, CR = .90, and AVE = .70 for PU; and Cronbach's alpha = .79, CR = .87, and AVE = .63 for PEU. Additionally, correlations between the measures were confirmed, with the highest correlation between ICUC and PU being $r = .75$. However, the squared correlation (R^2) was .56, which was lower than the respective AVE values, confirming discriminant validity among the three measures. Lastly, the measurement model fit through CFA indicated a good fit with the data, with RMR = .02, SRMR = .04, CFI = .97, TLI = .95, CFI = .97, and RMSEA = .07, reflecting satisfactory model fit.

Data Analysis

This study utilized various statistical techniques to validate the measures and address the research questions. First, the convergent and divergent validity of each measure was evaluated using Cronbach's alpha, construct reliability (CR), and average variance extracted (AVE), with thresholds set at .6 for Cronbach's alpha, 0.7 for CR, and .6 for AVE. Second, confirmatory factor analysis (CFA) was applied to confirm the measurement model fit for each measure, evaluating the adequacy using several model fit indices, including ≤ .05 for Root Mean Square Residual (RMR), ≤ .08 for Standardized Root Mean Square Residual (SRMR), ≥ .9 for Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Goodness of Fit Index (GFI), and ≤ .08 for Root Mean Square Error of Approximation (RMSEA) (Hu & Bentler, 1999).

Meanwhile, since no validated scale for the purpose of using ChatGPT was available in the literature, an exploratory factor analysis (EFA) was necessary to identify the latent variables underlying the data before conducting the CFA, as well as to reduce the number of variables for more efficient latent profile analysis (LPA). The EFA was conducted using maximum likelihood extraction and promax rotation. The number of factors was determined through parallel analysis and a scree plot, with factor loadings and communalities

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set at a threshold of .3 or higher (Loewen & Gonulal, 2015). Items with factor loading differences of less than .2 were considered to have cross loadings and were candidates for deletion.

Second, the mean and standard deviation of each item were calculated to assess the purpose of using ChatGPT, confirming the distribution and understanding how English learners utilize ChatGPT in their English learning.

Third, to address research question 1, latent profile analysis (LPA) was employed to identify distinct learner profiles based on ChatGPT usage patterns. The optimal number of profiles was determined using multiple model fit indices such as Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Sample-Size Adjusted BIC (SABIC), and entropy. The Bootstrap Likelihood Ratio Test (BLRT) was also used to assess the significance of differences between models (Vermunt & Magidson, 2002). Furthermore, reductions in AIC and BIC values, minimum sample allocation ratio per profile and the profile interpretability were considered. In particular, given that prior research suggests that an allocation ratio exceeding 5% per profile is the minimum threshold for retaining a profile (Jung & Wickrama, 2008), this study followed that approach by setting the threshold above 5%.

Fourth, to address research question 2, the associations between the identified profiles and learners' biological, environmental, and motivational traits, such as gender, academic disciplines, and English self-efficacy, were examined using Chi-square tests. The strength of these associations was investigated through Cramer's *V*, where values greater than 0.25 indicate a highly strong association, greater than 0.15 indicate a strong association, greater than 0.10 indicate a moderate association, greater than 0.05 indicate a weak association, and greater than 0 indicate no or very weak association (Akoglu, 2018). In addition, by testing the significance of the standardized residuals between expected and observed frequencies, further investigation was carried out to identify significant patterns among the combinations of profile and each category of learners' traits.

Fifth, to answer research question 3, one-way ANOVA was performed with learners' profiles as the independent variable and their perceptions, including usefulness, ease of use, and intention to continue using ChatGPT, as dependent variables. Additionally, post-hoc tests using Scheffe's method were conducted to confirm group differences.

Finally, several statistical tools were employed for data analysis. Specifically, Jamovi version 2.5.3 was used for EFA, Amos version 18.0 for CFA, the tidy LPA package in R version 4.3.3 for LPA, and SPSS version 25.0 for ANOVA and post-hoc analysis. Furthermore, Python packages like pandas and matplotlib were utilized for visualization purposes. The significance level for hypothesis testing was set at $p < .05$.

Results

Descriptive Statistics of Purposes of Using ChatGPT

Table 2 details the mean scores and standard deviations for both primary and individual purposes of using ChatGPT in English learning. According to the table 1, the most common use of ChatGPT by English learners was for translation ($M = 3.17$) and learning English vocabulary and expressions ($M = 3.05$). They also moderately used it for learning and polishing grammar ($M = 2.92$), writing and evaluating English texts ($M = 2.77$), and obtaining samples ($M = 2.22$). The least frequent use reported was for practicing and preparing for tests ($M = 1.91$). Focusing on individual purposes, learners primarily used ChatGPT for translating Korean to English ($M = 3.25$), seeking the meanings of English words ($M = 3.17$), translating English to Korean ($M = 3.08$), correcting grammatical errors in writing ($M = 3.07$), and making English sentences sound more natural ($M = 3.06$). Conversely, they were less likely to use ChatGPT for getting suggestions for English study plans ($M = 1.79$), generating English test items ($M = 1.97$), requesting explanations for test answers ($M = 1.97$), obtaining sample texts in specific genres ($M = 2.20$), and Obtaining sample structures for various writing genres ($M = 2.25$). This summary of the descriptive analysis indicates that learners are more likely to use ChatGPT for understanding and producing English accurately,

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while they are less likely to rely on it for content generation.

Table 2
Descriptive Statistics for the Purposes of Using ChatGPT

Items to measure purposes of using ChatGPT	*Mean*	*SD*
Factor 1. Obtaining samples	2.22	.96
Obtaining sample structures for various writing genres	2.25	1.05
Obtaining sample texts in specific genres	2.20	1.01
Factor2. Practicing and preparing tests	1.91	.86
Requesting explanations for test answers	1.97	1.03
Generating English test items (e.g., grammar, TOEIC, TOEFL etc)	1.97	1.00
Getting suggestions for English Study Plans	1.79	.95
Factor3. Writing and evaluating English texts	2.77	.75
Summarizing English texts	2.60	1.03
Brainstorming ideas for writing	2.63	.99
Getting feedback on writing	2.76	.99
Making English sentences sound more natural	3.06	.89
Factor4. Learning English vocabulary and expressions	3.05	.68
Finding synonyms or antonyms	2.93	.87
Exploring alternative expressions	3.05	.82
Seeking the meanings of English vocabulary	3.17	.82
Factor5. Learning and polishing grammar	2.92	.79
Correcting grammatical errors in writing	3.07	.86
Getting explanations about grammar rules	2.77	.92
Factor6. Translating	3.17	.72
Translating from Korean to English	3.25	.82
Translating from English to Korean	3.08	.81

Results of the Profile Analysis on the Purpose of Using ChatGPT

Decision on the Number of Profile

To determine the optimal number of profiles, the study meticulously evaluated several criteria, including the entropy index, model fit, reductions in AIC and BIC values, minimum sample allocation ratio per profile, statistical significance of the BLRT, and the interpretability of the results. Across all models, the entropy index surpassed the acceptable threshold of 0.8, as displayed in Table 3. Moreover, the AIC, BIC, and SABIC values consistently declined as the number of profiles increased. The most significant decrease in AIC and BIC values was observed when the number of profiles rose from 5 to 6, as shown in Fig 1. The BLRT significance test also revealed a statistically significant improvement when the number of profiles increased from 4 to 5. However, models 7 and 8 contained profiles with a sample allocation ratio below the 5% threshold, and model 6 included two groups with indistinct characteristics. Therefore, the model with 5 profiles was determined to be the most appropriate solution for this study.

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Table 3
Model Fit by Number of Profiles

Model	LogLik	AIC	BIC	SABIC	Entropy	Min	Max	BLRT	*p*
2	-2637.18	5312.36	5388.20	5327.91	0.84	47%	53%	374.04	0.01
3	-2581.59	5215.18	5318.96	5236.46	0.85	8%	52%	111.19	0.01
4	-2567.92	5201.84	5333.56	5228.85	0.93	6%	46%	27.34	0.01
5	-2509.24	5098.48	5258.14	5131.21	0.83	6%	30%	117.36	0.01
6	-2437.57	4969.14	5156.74	5007.60	0.86	6%	26%	143.34	0.01
7	-2403.31	4914.63	5130.17	4958.82	0.88	3%	22%	68.51	0.01
8	-2383.74	4889.49	5132.97	4939.41	0.87	3%	22%	39.14	0.01

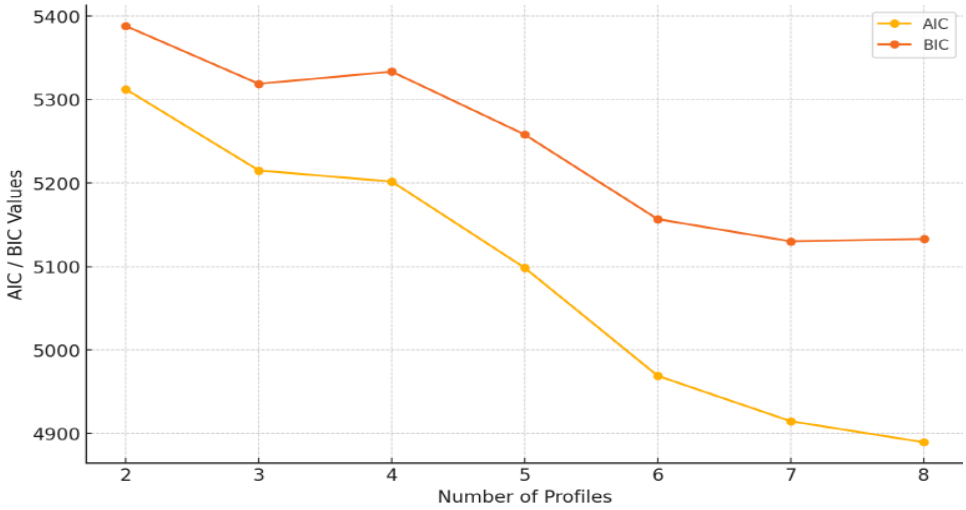

Figure 1. Reduction in AIC/BIC by Different Numbers of Profiles

Profile Characteristics

To provide a clearer understanding and description of each profile, profiles were named as follows: First, profile 1 (refer to yellow line in Figure 2) is labeled "Active Users (N = 92)." This group demonstrates generally high usage across various ChatGPT purposes, except for practicing and preparing for tests. They score particularly high on key activities such as obtaining samples, writing and evaluating texts, learning vocabulary and expressions, improving grammar, and translating. However, their usage for test preparation is relatively low. This indicates that English learners in this profile actively utilize ChatGPT for generating and referencing English text as well as for language learning but rely less on it for test preparation and improving test scores. Second, profile 2 (orange line), called "Passive Users (N = 82)," shows low overall scores across all primary purposes. This group scores less than 3 across the board, indicating that learners in this profile rarely use ChatGPT for language learning. Third, profile 3 (red line), named "Input/Output Seekers (N = 119)," shows high scores in areas such as writing and evaluating texts, learning vocabulary and expressions, grammar refinement, and translation, making it similar in characteristics to Profile 1 ("Active Users"). However, learners in Profile 3 are much less likely to use ChatGPT for content generation, focusing instead on "pure language learning." Fourth, profile 4 (pink line), termed "Comprehensive Active Users (N = 23)," exhibits the highest scores across all primary purposes, indicating that learners in this profile are the most enthusiastic users of ChatGPT, relying on it extensively for various language tasks. Lastly, profile 5 (blue line), called "Translation-Focused Users (N = 84)," scores high primarily in translation purposes. Notably, this group also scores relatively high in learning vocabulary and expressions.

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Given that vocabulary learning is accompanied by translation from L1 to L2, or vice versa, it is predictable that learners in the "Translation-Focused Users" group primarily use translation to learn and comprehend English words and expressions. Thus, learners in Profile 5 are characterized by their frequent use of ChatGPT for translation tasks.

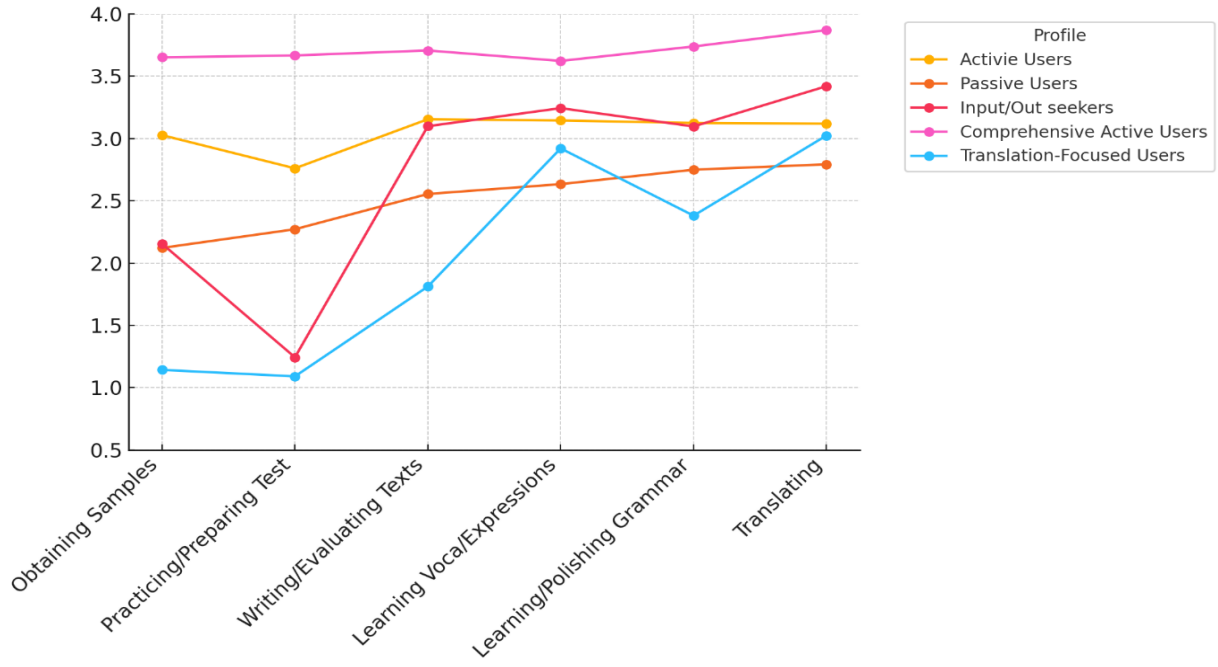

Figure 2. The Five Profiles of Purpose of Using ChatGPT

Profile Differences in Gender, Academic Discipline, and English Self-Efficacy

Profile Differences in Gender

The analysis exploring potential differences in the purposes of using ChatGPT based on learners' gender, as shown in Table 4, revealed no significant relationship between gender and the specific purposes for which ChatGPT is utilized ($\chi^2(4) = .93$, $p = .928$). This result indicates that learners' gender does not affect their purposes for using ChatGPT.

Table 4
Results of Chi-square Test for Gender Differences by Profile

	Active Users	Passive Users	Input/Output Seekers	Comprehensive Active Users	Translation Focused Users	Total	χ^2	V
Male	50 (12.5)	43 (10.8)	68 (17.0)	13 (3.3)	43 (10.8)	217 (54.3)		
Female	42 (10.5)	39 (9.8)	51 (12.8)	10 (2.5)	41 (10.3)	183 (45.7)	.87 (4)	.047
Total	92 (23.0)	82 (20.5)	119 (29.8)	23 (5.8)	84 (21.0)	400 (100)		

Note. The numbers in parentheses represent percentages.

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Profile Differences in Academic Discipline

An analysis of the differences in profile types based on learners' academic disciplines demonstrated, as illustrated in Table 5, that a learner's major could affect their purposes for using ChatGPT (χ^2 (16) = 64.86, $p < .001$), with the strength of the association between the two variables being identified as highly strong (Cramer's $V = .40$). To explain further, learners in the Humanities were more likely to be classified under "Input/Output Seekers (Profile 3)" (Std. Residual *Z-score*: 2.1) and less likely under "Passive Users (Profile 2)" (Std. Residual *Z-score*: -2.4). Likewise, those in Social Sciences were more inclined to fall into "Input/Output Seekers (Profile 3)" (Std. Residual *Z-score*: 2.2). Learners in the Natural Sciences were more frequently associated with "Translation-Focused Users (Profile 5)" (Std. Residual *Z-score*: 3.1). Learners in medical sciences or the Arts were more likely to be placed in "Passive Users (Profile 2)" (Std. Residual *Z-score*: 2.5) and less likely in "Input/Output Seekers (Profile 3)" (Std. Residual *Z-score*: -2.9). Overall, these findings imply that students majoring in Humanities and Social Sciences are more likely to use ChatGPT for English language learning.

Table 5
Results of Chi-square Test for Academic Discipline Differences by Profile

	Active Users	Passive Users	Input/Output Seekers	Comprehensive Active Users	Translation Focused Users	χ^2	*V*
Humanities	13 (3.3)	7 (1.8)	35 (8.8)	6 (1.5)	22 (5.5)		
Social Sciences	15 (3.8)	16 (4.0)	39 (9.8)	2 (0.5)	20 (5.0)		
Natural Sciences	5 (1.5)	6 (1.5)	9 (2.3)	0 (0.0)	16 (4.0)	64.86*** (16)	.40
Engineering	36 (9.0)	29 (7.2)	28 (7.0)	9 (2.3)	16 (4.0)		
Others	23 (5.8)	24 (6.0)	8 (2.0)	6 (1.5)	10 (2.5)		
Total	92 (23.0)	82 (20.5)	119 (29.8)	23 (5.8)	84 (21.0)		

Note. The numbers in parentheses represent percentages; *** $p < .001$

Profile Differences in English Self-Efficacy

To explore whether English self-efficacy influences profile type, learners were grouped according to their English self-efficacy levels. Specifically, the group was divided based on the average score of learners' English self-efficacy: a score below 3 identified the low group ($N = 117$, $M = 2.30$), a score below 4 identified the middle group ($N = 166$, $M = 3.37$), and a score above 4 identified the high group ($N = 117$, $M = 4.40$). To more clearly distinguish between levels of perceived English self-efficacy, the analysis of the relationship between learners' self-efficacy and profile types was conducted using only the high and low groups, with the middle group excluded.

An analysis of differences in profile types based on learners' levels of perceived English self-efficacy showed, as displayed in Table 6, that English self-efficacy could impact their purposes for using ChatGPT ($\chi^2(4) = 41.60$, $p < .001$), with the strength of the association between the two variables being identified as highly strong (Cramer's $V = .42$). More specifically, learners with low English self-efficacy were more likely to be categorized as "Passive Users (Profile 2)" (Std. Residual *Z-score*: 3.3) and less likely to be categorized as "Input/Output Seekers (Profile 3)" (Std. Residual *Z-score*: -2.5). In contrast, learners with high English self-efficacy were more likely to fall into the "Input/Output Seekers (Profile 3)" category (Std. Residual *Z-score*: 2.5) and less likely to be "Passive Users (Profile 2)" (Std. Residual *Z-score*: -3.3). This

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finding indicates that learners with higher English self-efficacy are more inclined to use ChatGPT for English language learning than those with lower self-efficacy.

Table 6
Results of Chi-square Test for Self-Efficacy Differences by Profile

	Active Users	Passive Users	Input/Output Seekers	Comprehensive Active Users	Translation Focused Users	Total	χ^2	V
Low Group	19 (8.1)	42 (17.9)	22 (9.4)	4 (1.7)	30 (12.8)	117 (50.0)		
High Group	26 (11.1)	9 (3.8)	52 (22.2)	12 (5.1)	18 (7.7)	117 (50.0)	41.60*** (4)	.42
Total	45 (19.2)	51 (21.8)	74 (31.6)	16 (6.8)	48 (20.5)	234 (100.0)		

Note. The numbers in parentheses represent percentages; *** $p < .001$

Profile Association with Antecedent Factors of ChatGPT Acceptance

Differences in Perceived Usefulness by Profile Type

We explored whether perceived usefulness among learners differs according to their profile type. Prior to applying one-way ANOVA, we checked the normality distribution within each group and observed that kurtosis ranged from 0.11 to 2.84, and skewness ranged from 0.49 to 1.52 in absolute terms. According to the criterion that kurtosis should be within an absolute value of 8 and skewness within an absolute value of 3 to meet the normality assumption (Kline, 2005), it was concluded that each group followed a normal distribution. Furthermore, Levene's test for homogeneity of variances indicated that the assumption of variance homogeneity among groups was satisfied ($F(4,395) = 1.49$, $p = .204$).

Results from one-way ANOVA shows that, as displayed in Table 7 below, a significant difference in perceived usefulness was found based on profile type ($F(4, 395) = 5.75$, $p < .001$), though the effect size of this difference was relatively small ($\eta^2 = .055$). A more detailed investigation using Scheffé's post hoc analysis revealed that learners identified as input/output seekers (Profile 3) and comprehensive active users (Profile 4) perceived ChatGPT as significantly more useful compared to those in the passive users group (Profile 2).

Table 7
Results of One-Way ANOVA for Perceived Usefulness Differences by Profile

Dependent Variable	Profile Type	*Mean*	*SD*	*F*	$\eta 2$
Perceived Usefulness	Active Users	4.13[ab]	.60	5.75***	.055
	Passive Users	3.92[a]	.67		
	Input/Output Seekers	4.27[b]	.56		
	Comprehensive Active Users	4.46[b]	.61		
	Translation-Focused Users	4.17[ab]	.55		

*** $p < .001$

Differences in Perceived Ease of Use by Profile Type

Next, we examined whether learners' perceived ease of use varied according to their profile type. Analysis of the normality distribution for each group showed that the kurtosis and skewness values, ranging from 0.05 to 1.09 and 0.42 to 0.99, respectively, were within acceptable limits, indicating that each group followed a normal distribution. However, Levene's test for homogeneity of variances revealed that the assumption of equal variances was not satisfied across groups ($F(4, 395) = 2.48$, $p = .044$). Consequently,

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Welch's *F* statistic was applied for hypothesis testing in the following analyses.

As illustrated in Table 8, there were differences in perceived ease of use among different profile types ($F(4, 118.97) = 8.39$, $p < .001$), although the effect of profile type on perceived ease of use was moderate ($\eta^2 = .084$). Further analysis using Scheffé's post-hoc test indicated that the differences between groups in ease of use were relatively minor. For instance, Translation-Focused Users (Profile 5) did not differ significantly from other profile types in terms of ease of use. Nevertheless, it was observed that learners categorized as comprehensive active users (Profile 4) found ChatGPT significantly easier to use than those in the passive users group (Profile 2).

Table 8
Results of One-Way ANOVA for Perceived Ease of Use Differences by Profile

Dependent Variable	Profile Type	*Mean*	*SD*	*F*	*η*2
Perceived Ease of Use	Active Users	4.16[ab]	.57	8.39***	.084
	Passive Users	3.94[a]	.64		
	Input/Output Seekers	4.36[bc]	.46		
	Comprehensive Active Users	4.48[c]	.53		
	Translation-Focused Users	4.20[abc]	.55		

*** $p < .001$

Differences in Intention to Continue Using ChatGPT by Profile Type

Finally, we explored whether variations existed in learners' intentions to continue using ChatGPT based on their profile types. Analysis of the normality distribution for each group showed that the kurtosis and skewness values, ranging from .58 to 6.64 and .48 to 2.26, respectively, were within acceptable limits, indicating that each group followed a normal distribution. However, Levene's test for homogeneity of variances indicated that the assumption of equal variances was not met ($F(4,395) = 2.82$, $p = .025$). Consequently, Welch's *F* statistic was employed for hypothesis testing.

Table 9
Results of One-Way ANOVA for Intention to Continue Using ChatGPT by Profile

Dependent Variable	Profile Type	*Mean*	*SD*	*F*	*η*2
Intention to Continue Using ChatGPT	Active Users	4.05[a]	.61	9.10***	.082
	Passive Users	3.98[a]	.79		
	Input/Output Seekers	4.46[b]	.59		
	Comprehensive Active Users	4.46[b]	.69		
	Translation-Focused Users	4.27[ab]	.71		

*** $p < .001$

As shown in Table 9, a significant difference was observed in the intention to continue using ChatGPT across different profile types ($F(4, 118.47) = 9.10$, $p < .001$). The effect of profile type on the intention to continue using ChatGPT was found to be moderate ($\eta^2 = .082$). Further investigation using the Scheffé post-hoc test revealed more pronounced differences between the groups. For example, learners identified as Input/Output Seekers (Profile 3) and Comprehensive Active Users (Profile 4) showed a higher intention to continue using ChatGPT than those classified as Active Users (Profile 1) and Passive Users (Profile 2).

Discussion

This research aimed to identify distinct profiles of college students based on their purposes for using ChatGPT in their English learning (RQ1) and to examine how these profiles may vary according to individual factors such as gender, academic discipline, and English self-efficacy (RQ2). As a further point,

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the study analyzed how learners' perceptions of usefulness, ease of use, and intention to continue using ChatGPT—major factors affecting ChatGPT adoption—might differ among these usage profiles (RQ3). The key findings of this study are summarized and discussed as follows.

First, the study identified five unique profiles of college English learners based on their purposes for using ChatGPT: Active Users, Passive Users, Input/Output Seekers, Comprehensive Active Users, and Translation-Focused Users. These profiles varied in their levels of reliance on ChatGPT, with Comprehensive Active Users being the most dependent, Active Users moderately reliant, and Passive Users the least reliant. This outcome parallels prior research in general higher education contexts, where learners were similarly categorized by their dependence on ChatGPT. For example, Stojanov et al. (2024) applied LPA analysis to group students into all-rounders, proactive learners, and versatile low reliers based on their usage of ChatGPT. These categories correspond to Comprehensive Active Users, Active Users, and Passive Users in this study, respectively. Meanwhile, Input/Output Seekers and Translation-Focused Users demonstrate characteristics specific to language learning. Input/Output Seekers, who make up about 30% of the learners, tended to focus on clarifying the meaning of English input, while seeking grammatical and lexical improvement and closely monitoring their output. This emphasizes how learners use ChatGPT to enhance their English learning. Furthermore, Translation-Focused Users' reliance on ChatGPT to better understand English input and produce more natural English output also underscores learners' distinct language-learning needs from the use of ChatGPT.

Second, the study's findings indicated that gender does not have a statistically significant influence on learners' purposes for using ChatGPT. This implies that the reasons for employing ChatGPT for English language learning are relatively uniform across male and female learners. That is, both groups seem to engage with the tool in similar ways, regardless of gender. This result aligns with previous research, including studies by Acosta-Enriquez et al. (2024) and Sallam et al. (2024), which also found no substantial gender-based differences in learners' use of ChatGPT for educational purposes. One potential reason for this finding is that ChatGPT offers a consistent user experience for all learners, independent of gender. Its user-friendly and accessible nature may contribute to its widespread adoption among both male and female users, reducing the relevance of gender differences. Additionally, the types of challenges learners aim to solve with ChatGPT in their English language studies do not seem to differ significantly by gender. Moreover, as proposed by Sallam et al. (2024), other variables, such as environmental and motivational factors, may play a more prominent role in shaping learners' use of ChatGPT, possibly outweighing biological differences. This implies that learners' purposes for using ChatGPT may be influenced more by contextual or cognitive factors than by gender, a hypothesis that was partially confirmed by the additional findings of this study, as shown in the effects of learners' academic discipline and English self-efficacy on their purposes for using ChatGPT.

Third, as noted earlier, the study confirmed that a student's academic discipline can significantly affect their purposes for using ChatGPT, indicating that their usage may change depending on their field of study. This also implies that the academic environment influences how students utilize ChatGPT for English language tasks. One possible reason for this variation is that English assignments often differ across disciplines. Indeed, the variation in English for Academic Purposes (EAP) tasks required in different fields has been well documented in needs analysis research for EAP course development (Hwang et al., 2020). These differences in English tasks across academic disciplines could affect how well ChatGPT aids in task completion. Furthermore, the frequency with which students encounter English-related tasks may also play a role. For instance, students in the humanities and social sciences may use ChatGPT more frequently and for a broader range of tasks, as they are typically assigned more English tasks compared to students in other fields. Moreover, variations in ChatGPT's performance across different tasks may influence its usage. Prior studies show that while ChatGPT is effective in aiding writing tasks, it is less adept at solving mathematical problems or performing calculations (Lo, 2023), and its visualization abilities remain limited (Sarikas, 2023). These performance disparities could impact both how often and for what purpose ChatGPT is used. Consequently, in fields where writing support is essential, ChatGPT may be employed more frequently, whereas in disciplines that require complex problem-solving or technical tasks, its usage may be less

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prominent, leading to differences in usage depending on academic major.

Fourth, the study revealed that English self-efficacy is an important motivational factor affecting learners' purposes for using ChatGPT. Learners with higher self-efficacy in English, in particular, used ChatGPT more frequently and for a broader array of purposes. These findings correspond with earlier research (Bin-Nashwan et al., 2023; Bouzar et al., 2024; Zhang et al., 2024), which also demonstrates a connection between self-efficacy and learners' ChatGPT usage. The higher frequency of use among learners with greater self-efficacy can be attributed to their enhanced ability for self-directed learning (Hwang & Lee, 2019), their resilience when encountering difficulties (Hwang, 2017a), and their readiness to embrace new challenges (Hwang, 2017b). These qualities may lead such learners to see ChatGPT as an effective tool for reaching their learning goals, integrating it into their independent study processes. Moreover, learners with high self-efficacy are more inclined to persist through unsatisfactory responses from ChatGPT, continuing to engage with the machine until they reach satisfactory outcomes. This persistence builds positive experiences that further validate ChatGPT's usefulness and foster more diverse usage. In contrast, learners with lower self-efficacy have a tendency to avoid situations where they might fail (Hwang, 2017b). Consequently, if they encounter unsatisfactory answers from ChatGPT, they might interpret it as a failure and become discouraged from using the tool further. Furthermore, their lack of metacognitive skills essential for self-directed learning can result in difficulty using ChatGPT effectively, leading to reduced usage overall.

Fifth, the analysis revealed a statistically significant variation in perceived usefulness depending on learners' ChatGPT usage profiles. Notably, Input/Output Seekers and Comprehensive Active Users exhibited higher levels of perceived usefulness than Passive Users. This suggests that learners who use ChatGPT more frequently and for a wider variety of tasks tend to view it as more useful. These findings are consistent with previous studies, which highlight that user experience plays a crucial role in shaping perceptions of a technology's usefulness. Earlier research has shown that greater familiarity with new technology tends to result in higher perceived usefulness, as users become more adept at navigating its features and limitations (Venkatesh & Bala, 2008; Venkatesh & Davis, 2000). This relationship can be attributed to the connection between experience and usefulness. To put it simply, as learners accumulate more experience with ChatGPT, they are likely to face fewer obstacles in its usage, enhancing their view of its usefulness. Specifically, those who frequently interact with ChatGPT across different tasks can gain a better understanding of how its features can aid various English learning objectives. This growing awareness of the tool's capabilities is referred to as "result demonstrability" (Venkatesh & Davis, 2000), a concept that emphasizes how clearer outcomes from using technology can increase its perceived usefulness. Venkatesh and Bala (2008) further explain that the effect of result demonstrability on perceived usefulness strengthens with increased experience, which accounts for why learners with more extensive usage report higher levels of perceived usefulness. Conversely, Passive Users, with limited interactions, may lack sufficient experience to fully recognize the tool's potential, thereby leading to lower perceived usefulness.

Sixth, the study's findings also revealed a statistically significant variation in perceived ease of use based on learners' ChatGPT usage profiles. Specifically, Input/Output Seekers and Comprehensive Active Users reported higher perceived ease of use compared to Passive Users. This indicates that learners who use ChatGPT more frequently and for a wider range of tasks tend to find the tool easier to use. These results are consistent with prior research, which has demonstrated that user experience influences perceived ease of use in technology. Previous studies have consistently shown that the more experience users gain with a tool, the easier they perceive it to be (Venkatesh & Bala, 2008). This implies that repeated interactions with ChatGPT help users become more skilled and comfortable, thus lowering any perceived barriers to its use. However, the ways in which experience influences perceived ease of use may differ from those affecting perceived usefulness. More frequent and varied use provides learners with more opportunities to engage with ChatGPT, enabling them to develop skills through trial and error. This process helps them learn how to effectively prompt ChatGPT for more accurate and relevant responses. Additionally, increased interaction may boost learners' enjoyment and engagement, creating a sense of "flow," where they are deeply immersed in the activity. Venkatesh and Bala (2008) describe this experience as "playfulness,"

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which has been found to enhance perceived ease of use. When learners perceive their interactions with ChatGPT as playful, they are more inclined to view the tool as easy to use, reinforcing their positive perception of its usability.

Lastly, the study's findings, similar to the results regarding perceived usefulness and ease of use, revealed a statistically significant difference in learners' intentions to continue using ChatGPT, depending on their usage profiles. More specifically, Input/Output Seekers and Comprehensive Active Users displayed higher intentions to continue using ChatGPT compared to Passive Users. This suggests that learners who engage with ChatGPT more frequently and for a broader range of tasks have a higher tendency to integrate it into their future English learning activities. A possible explanation for this result can be partly linked to other findings from the current study. As mentioned earlier, learners who use ChatGPT more extensively for diverse purposes tend to report higher levels of perceived usefulness and ease of use compared to those who use it less often. According to TAM, perceived usefulness and ease of use are key determinants of continued technology use. Numerous previous studies have demonstrated that when users view technology as both beneficial and easy to use, they are more likely to intend to keep using it. Specifically, perceived ease of use positively impacts perceived usefulness, which then affects users' intention to continue using the technology (Liu & Ma, 2023; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000). By combining these earlier findings with the results of this study, it becomes evident that Input/Output Seekers and Comprehensive Active Users exhibit stronger intentions to continue using ChatGPT because they find it both easier to use and more beneficial. That is, this enhanced ease of use likely strengthens their perception of ChatGPT's usefulness, leading to a greater commitment to using it in their future English learning. In contrast, Passive Users, who may find ChatGPT less user-friendly or beneficial, show lower intentions for continued use.

Based on the aforementioned primary outcomes of the study, we suggest several pedagogical implications that can make a contribution to successful integration of ChatGPT into English teaching and learning.

ChatGPT usage Profile-Tailored Instructional Strategies: The identification of five unique profiles of learners using ChatGPT suggests that English teachers could tailor instructional strategies based on learners' usage patterns. For instance, Comprehensive Active Users and Input/Output Seekers might benefit from more advanced, self-directed learning activities, leveraging ChatGPT for complex tasks like essay writing and critical analysis. In contrast, Passive Users might need more structured guidance and explicit instruction on how to maximize the tool's benefits to enhance their engagement and learning outcomes.

Discipline-Specific ChatGPT Training: Since learners' purposes for using ChatGPT are influenced by their academic discipline, English instructors need to consider offering discipline-specific training for ChatGPT use. This training could focus on how students in different fields can best use ChatGPT to support their specific English learning tasks. This would ensure that ChatGPT is adapted to the unique requirements of each academic discipline. Furthermore, discipline-specific ChatGPT training program can be incorporated into EAP programs or curricula.

Ongoing Support for Low-Efficacy Learners: Given that learners with lower self-efficacy are less inclined to persist with ChatGPT when faced with difficulties, educational programs could implement ongoing support and monitoring for these learners. Providing additional feedback, peer support, and low-stakes opportunities for experimentation could help learners overcome their reluctance to use the tool and foster a more resilient learning mindset. This might include dedicated workshops or tutoring sessions that focus on how to interact with ChatGPT effectively, especially for those who have had less success in using it.

Integration of TAM principles into EFL: The differences in perceived usefulness, ease of use and intention to continue using ChatGPT across the five usage profiles suggest that teaching interventions could benefit from incorporating principles of the Technology Acceptance Model (TAM). English teachers could emphasize increasing students' perceived usefulness of ChatGPT by demonstrating clear, tangible outcomes of its usage and making the learning process enjoyable, ultimately leading to increased intention to continue

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using the technology. This would particularly help Passive Users, who may not yet see the full potential of ChatGPT, by providing more hands-on, enjoyable activities that highlight its benefits.

Conclusion and Limitations

This study significantly contributes to the field of English education by addressing gaps in the literature regarding the diverse purposes learners have for using ChatGPT. Through a human-centered approach, five distinct profiles of college students were identified based on their usage of ChatGPT for English learning: Active Users, Passive Users, Input/Output Seekers, Comprehensive Active Users, and Translation-Focused Users. These profiles highlight important differences in how learners engage with ChatGPT, shaped by factors such as academic discipline and self-efficacy in English, with no notable gender differences. Additionally, the study emphasizes that learners' perceived usefulness, ease of use, and intention to continue using ChatGPT vary across these profiles.

The study also contributes to theoretical frameworks by extending the Technology Acceptance Model (TAM) to the realm of language learning with AI tools like ChatGPT. This research provides fresh insights into how learners' perceptions—such as perceived usefulness, ease of use, and intention to continue using ChatGPT—are influenced by their user profiles, suggesting that these factors may fluctuate more dynamically than previously assumed. By identifying varied user profiles, the study enhances our theoretical understanding of how learners interact with educational technologies in nuanced ways. On a broader educational scale, the findings imply that English teachers and institutions should apply a person-centered approach when incorporating other AI tools into language learning. ChatGPT is just one of many emerging technologies that could benefit from personalized instructional methods. By acknowledging learners' diverse motivations and experiences, educators can integrate AI tools more effectively into English education, ensuring these technologies meet students' individual needs and foster long-term engagement.

Despite its contributions, several limitations of this study must be acknowledged. First, the reliance on self-reported data may introduce bias in how learners describe their use of and attitudes toward ChatGPT. Second, the geographic scope was limited, reducing the generalizability of the findings to other contexts. Future research could address these limitations by incorporating a more diverse range of data and populations, such as real performance data from multinational groups of English learners in language tasks, to validate the results. Additionally, future studies should examine the long-term impact of learners' engagement with ChatGPT, particularly how usage profiles evolve over time and how these changes affect language proficiency.

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The Authors

Myunghwan Hwang (1st author) is a scholar at Yonsei University, specializing in English education. His research focuses on enhancing English writing skills, leveraging AI for language education, understanding learner traits, and English assessment. He aims to bridge the gap between technology and language education by exploring innovative teaching methods and assessment strategies.

Center for Cognitive Science,
Yonsei University
Email: hwangmh031@naver.com

Eunmi Lee (co-author), a scholar at Keimyung University, South Korea, researches AI-driven instructional design, the development of personalized AI learning systems, and the integration of AI in writing education. Her work focuses on leveraging technology to bridge educational gaps and enhance learning experiences.

Keimyung Student Success Center,
Keimyung University
Email: jkh0622@kmu.ac.kr

Hee-Kyung Lee (corresponding author) is a professor at the Graduate School of Education at Yonsei University, Seoul, Korea. Her research areas are English curriculum development, second language writing, language testing, and classroom assessment.

Major of English Education,
Graduate School of Education,
Yonsei University,
50 Yonsei-ro, Seodaemun-gu, Seoul 120-749, South Korea
Tel: +82 2 2123 6265
Email: heelee@yonsei.ac.kr

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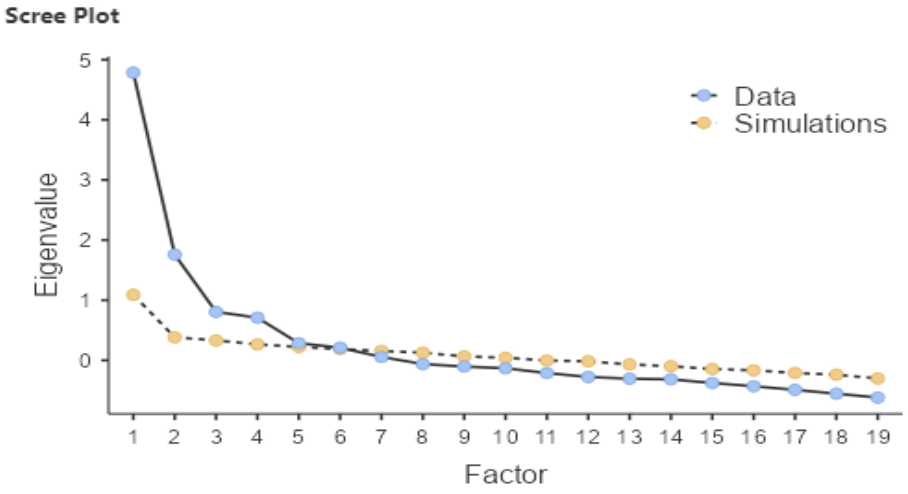
APPENDIX 1

Results of Factor Analysis

Items to measure purposes of using ChatGPT	F1	F2	F3	F4	F5	F6	h^2
Obtaining sample structure	.650						0.686
Obtaining sample texts	.624						0.664
Requesting test answers		.762					0.607
Generating English test items		.759					0.582
Getting Study Plans		.757					0.656
Summarizing texts			.728				0.526
Brainstorming ideas			.693				0.585
Getting feedback on writing			.440				0.527
Making English natural			.386				0.418
Finding synonyms/antonyms				.821			0.714
Exploring alternatives				.665			0.524
Seeking voca meaning				.550			0.374
Correcting grammatical errors					.951		0.803
Getting grammar rules					.591		0.445
Korean to English						.792	0.689
English to Korean						.658	0.467
Variances	12.21	12.17	9.01	8.80	6.68	6.57	
Cumulative Variances	12.21	24.4	33.4	42.2	48.9	55.4	

Note. h^2 indicates the value of commonalities.



APPENDIX 2

Survey Items

Intention to Continue Using a chatbot

1. I intend to use a chatbot when learning English.
2. I am more likely to use a chatbot than other methods to complete given tasks when learning English.
3. I am willing to recommend a chatbot to others as an English learning tool.

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Perceived Usefulness

1. Using a chatbot for English learning is more effective in achieving my goals compared to other methods.
2. Using a chatbot for English learning requires less time and effort to achieve my goals compared to other methods.
3. I can achieve better results when using a chatbot for English learning compared to other methods.
4. Using a chatbot for English learning makes task completion easier compared to other methods.

Perceived Ease of Use

1. Using a chatbot for English learning is not difficult.
2. When learning English, I can easily obtain the information I want through the chatbot.
3. When I need information for English learning, using a chatbot is less effortful than other methods.
4. I feel no burden when using a chatbot for English learning.

English Self-Efficacy

1. I am able to do my homework independently when it requires reading English texts.
2. When reading an English text, I am able to infer the meaning of unknown words.
3. I am able to read and interpret a wide variety of English texts with ease
4. I am proficient at reading texts in English.
5. I am able to compose messages in English on the internet SNS
6. I can write English sentences with correct grammar without difficulty.
7. I can write a text in English.
8. I am able to write an approximately two-page essay in English.
9. I am confident in writing in English, regardless of the genre.

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