The Influence of Students' Beliefs of ChatGPT on Their Intentions of Using ChatGPT in Learning Foreign Languages

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***Abstract*—The aim of this research was to investigate the influence of students' beliefs of ChatGPT on their intentions to use it for learning English as a second language (ESL). The Theory of Planned Behavior (TPB) was employed to explore how students' attitudes, subjective norms, and perceived behavioral control, acting as mediators, influenced their intention of using innovative technology. A total of 167 undergraduate students in Vietnam participated in the survey research. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the relationships. Results showed positive effects of attitude, subjective norms, and perceived behavior control on behavioral intention to use ChatGPT in ESL learning. Moreover, students' behavior beliefs, normative beliefs, and control beliefs could positively predict their attitude, subjective norms, and behavior control, respectively. The findings illustrated the potential theoretical and practical implications of the TPB in the context of learning ESL through ChatGPT.**

***Keywords*—ChatGPT, beliefs, theory of planned behavior, learning English as a second language, higher education**

I. Introduction

The ChatGPT is an advanced technology leading to significant changes in teaching and learning approaches recently [1]. As a large language learning model promoted by OpenAI, ChatGPT is a complicated chatbot capable of responding to a diversity of text-based inquiries, such as replying to basic questions, implementing more advanced assignments, and instructing learners through discussions about productivity issues [2]. For example, ChatGPT has been used as a support tool for learning foreign languages since it can help expand students' language capacities, scaffold the learning activities by giving learners feedback on their language use, and act as a companion tool for language practice with suggested activities [3]. According to Kasimova [4], ChatGPT can help students expand their vocabulary by suggesting synonyms and specialized words that they may not have previously considered for writing and speaking. Additionally, ChatGPT provides feedback on their writing and speaking, focusing on grammatical errors, vocabulary usage, and style [4]. By using ChatGPT, students who are learning English language, for example, can improve their speaking and writing skills through the English learning activities on widening vocabulary and grammatical structures, and they can ask questions and discuss different topics, which motivate students to study English [5].

Recently, ChatGPT is promoted in Vietnamese universities as a tool for supporting students' learning, especially in learning foreign languages. Many workshops on ChatGPT application and training have been provided in person or online to guide lecturers and students to use ChatGPT effectively [6]. Students were permitted to use ChatGPT to search for information and explain specialized terms; however, most students have not exploited the tools and functions of ChatGPT in studying effectively, and the percentage of students' ChatGPT usage for learning foreign languages is still low [7]. The shortcomings in students' behavior of using ChatGPT can be examined from the perspective of their behavioral intentions, as behavioral intentions reflect individuals' motives to perform actions or behaviors, and are considered a key determinant in executing those actions or behaviors [8]. Therefore, understanding Vietnamese students' intention to use ChatGPT in learning foreign language and factors affecting their intention is essential to find suitable solutions for improving the effectiveness of using ChatGPT, thereby enhancing their performance. Previous studies confirmed that belief was a crucial factor influencing individual's behavior intention or behavior. For example, individuals' environmental beliefs can drive their intention to act for protecting the environment or to use environmentally friendly services such as ecotourism and green hotels [9–11]. Components of health beliefs can predict people's intention to act for boosting healthy behaviors, such as using green pesticides, proper food handling, or consuming iron-fortified soy sauce [12–14]. Teachers' beliefs are also found to be important factors explaining their intentions or actions in professional practice, such as implementing new curricula or adopting new technologies [15–17]. Beliefs is a multidimensional concept in nature [18]. Previous studies utilized a variety of terms such as "attitudes, values, judgments, axioms, opinions, ideology, perceptions, conceptions, conceptual systems, preconceptions, dispositions, implicit theories, and so on" to discuss beliefs [19]. Specifically, Ajzen [20] argued that salient beliefs related to behavioral attributes such as a certain outcome of performing the behavior, normative expectations from important persons, and resources needed to accomplish the behavior could explain a specific intent or behavior. Most research utilized the Technology Acceptance

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Model (TAM) to understand students' actual behavior of using ChatGPT in learning [21–23], while limited efforts emphasized on learners' behavioral intentions. Moreover, not many studies have explored the influence of beliefs on undergraduate students' intention to use ChatGPT in learning English. The Theory of Planned Behavior (TPB) is one of the most common theories that examines the influence of beliefs on people's behavioral intention. Therefore, this study employed the TPB to investigate the effect of students' beliefs of ChatGPT on their intention to use ChatGPT in learning English. This research might have practical implications for the university instructors to promote their teaching pedagogies regarding the AI application in ESL teaching and help students enhance their English competencies

II. Theoretical Framework

The TPB was originally proposed by Ajzen [20, 24] to explain and predict individuals' behavior that facilitates targeted interventions for behavioral modifications [25]. Its focus is to understand individuals' intention to implement a certain behavior or action [20]. In the TPB, intention to perform a behavior is linked to attitudes toward that behavior, subjective norms about participating in it, and perceived behavioral control over performing it [20]. Furthermore, attitudes, subjective norms, and perceived behavioral control are associated with sets of beliefs, including behavioral beliefs, normative beliefs, and control beliefs.

A. Definitions of Components in the TPB

Beliefs is defined as "psychologically held understandings, premises, or propositions about the world that are felt to be true" [26]. It comprises conceptual representations that symbolize a reality or a certain state of affairs with enough "validity, truth, and trustworthiness" for guiding individuals' thought and action [27]. In educational studies, beliefs are considered as a form of cognition represented by different terms such as attitudes, values, perceptions, theories, etc. [19] and [26]. They are identified as crucial predictors of people's decisions, intentions, or actions [11] and [17]. A given behavior is considered as a function of beliefs related to this behavior [20]. In the TPB, Ajzen [20] distinguished beliefs into three categories: behavioral beliefs, normative beliefs, and control beliefs.

Behavioral beliefs are inherently personal and shaped by the association of behavior performance with specific outcomes or attributes [25]. Because they link each behavior with the subjective value of its outcomes, they have an impact on attitudes toward the behavior [20]. In this study, students' behavioral beliefs regarding the use of ChatGPT in learning English are understood as their beliefs in the perceived values of using ChatGPT to support their English learning process, such as improving vocabulary or writing skills, generating speaking ideas, etc.

Normative beliefs refer to individuals' perception of whether important referent person's approval of the performance of a certain behavior or adoption of that behavior [20, 25]. This type of belief motivates individuals to comply with influential others in performing the behavior [20]. In this study, students' normative beliefs regarding the use of ChatGPT in learning English are considered as the approval and encouragement from the university, instructors, classmates, seniors, and relatives to adopt ChatGPT to support the English learning process.

Control beliefs refer to an individual's perception of the adequacy or inadequacy of resources and opportunities that facilitate the performance of a specific behavior [20, 25]. When a person believes that their resources and opportunities outweigh the challenges and barriers, they are more confident in their ability to perform the behavior [20]. In this study, students' control beliefs are understood as their perception of the adequacy or inadequacy of facilities, equipment, guidance from teachers and friends, both from school and family, to facilitate the use of ChatGPT in the process of learning English.

Attitude is considered as individuals' predisposition based on their perception of an object, formed through learning and experience [28]. It represents their evaluation of the given object [29]. An attitude toward behavior describes the extent of a person's favorable or unfavorable evaluation of a given behavior [20]. When individuals have a positive evaluation about the behavior, they seem to have strong intention on performing the behavior [20]. In this study, students' attitude toward using ChatGPT in learning English refers to a positive tendency and willingness to use ChatGPT to support their English learning process.

Subjective norm is defined as "the perceived social pressure to perform or not to perform the behavior" [20]. It describes the motivations that encourage individuals to comply with the subjective perception of social pressure [25]. When individuals have more favorable subjective norms for a behavior, they tend to be more strongly inclined to perform that behavior [20]. In this study, students' subjective norm regarding the use of ChatGPT in learning English refers to their perception of compliance with the approval and encouragement of the university, instructors, friends, and relatives regarding the use of ChatGPT to support the English learning process.

Perceived behavioral control represents an individual's perception of the ease or difficulty of performing a certain behavior based on past experiences or predictions of barriers and challenges that may be encountered [20]. In other words, it describes the extent to which individuals perceive themselves as mastering the skills and having needed resources to perform the behavior [25]. It is compatible with Bandura's concept of self-efficacy regarding individuals' beliefs in their capabilities to perform tasks or achieve specific goals [25, 30]. A person who believes that they have sufficient capability to perform a behavior well will have a strong intention to employ that behavior [20]. In this study, students' perceived behavioral control regarding the use of ChatGPT in learning English is defined as their belief in mastering the skills to effectively adopt ChatGPT in their English learning process to acquire new knowledge and improve their speaking and writing skills.

Intentions are considered crucial factors for motivating a certain behavior, describing the extent of the willingness and efforts that individuals intend to dedicate to performing the said behaviors [20]. The stronger people's intention to perform a behavior, the more likely they are to perform that

behavior and actually perform that behavior [20]. In this study, students' intention to use ChatGPT in learning English refers to their willingness and effort to continue using ChatGPT, as well as to encourage others to use ChatGPT to support English learning process.

B. Research Model and Hypotheses

A review of literature found that the TPB has been employed by numerous researchers to investigate how individuals' beliefs influence their intention to perform a behavior or action [25, 31, 32]. The TPB has also been applied in previous research on behavior to use artificial intelligence (AI) in general [33, 34] and ChatGPT in particular [35]. Therefore, this study adopted the TPB to explore the impact of students' beliefs on their intention to use ChatGPT in learning English. The nine hypotheses generated from the research model (Fig. 1) in this study were based on the TPB theories and relevant literature, which are presented as follows:

H1. There is a positive effect of students' behavioral beliefs on their attitudes towards using ChatGPT in learning English.

H2. There is a positive effect of students' normative beliefs on their subjective norms to use ChatGPT in learning English.

H3. There is a positive effect of students' control beliefs on their perceived behavioral control to use ChatGPT in learning English.

H4. There is a positive effect of students' attitudes on their intentions to use ChatGPT in learning English.

H5. There is a positive effect of students' subjective norms on their intentions to use ChatGPT in learning English.

H6. There is a positive effect of students' perceived behavioral controls on their intentions to use ChatGPT in learning English.

H7. There is an indirect effect of students' behavioral beliefs on their intentions to use ChatGPT in learning English, mediated by their attitudes.

H8. There is an indirect effect of students' normative beliefs on their intentions to use ChatGPT in learning English, mediated by their subjective norm.

H9. There is an indirect effect of students' control beliefs on their intentions to use ChatGPT in learning English, mediated by their perceived behavioral.

Fig. 1 illustrates the theoretical framework of our research.

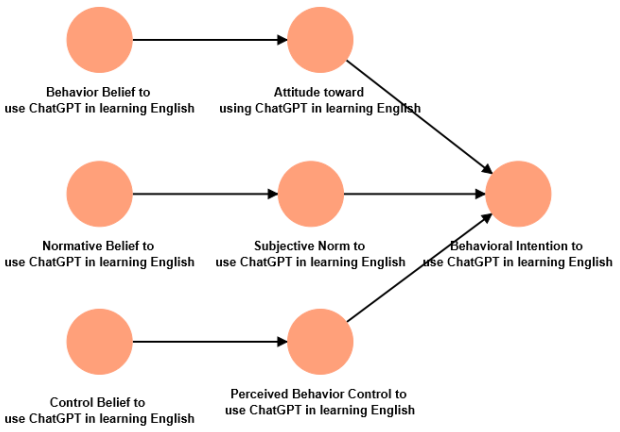

Fig. 1. Theoretical framework (adapted from Fishbein and Ajzen [36]).

III. Methods

This was a survey study that employed the TPB to investigate how students' beliefs impacted their behavioral intentions to use ChatGPT, and examine the relationship through students' attitudes, subjective norms, and perceived behavioral control. The relationships were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

A. Participants

The study participants were students in two Vietnamese universities where English and specialized English courses were required for a degree with an English certificate. To improve students' learning achievement, English course lectures commonly encouraged students to use ChatGPT to facilitate language learning. Thus, all English certificate students in the two participating institutions have experience using ChatGPT for ESL learning, while the extent of involvement may vary by individual student.

A convenience sampling strategy was used to recruit the participants from the English courses in the participating universities. An online survey was distributed via students' social media to reach those who were willing to participate in the survey research. A total of 167 college students completed the survey. Among the participants, 116 (69.5%) were female, and 51 (30.5%) were male, with the gender ratio closely reflecting that of the entire student body at the university. The participants included 13.8% freshmen, 46.1% sophomores, 30.5% juniors, and 9.6% seniors.

B. Instruments

The questionnaire consists of 35 items modified from previous studies, adopting a 5-point Likert scale where one indicates strongly disagree and five indicates strongly agree. These items were classified into seven constructs as follows:

Students' Behavioral Beliefs (BB) modified from Lai *et al.* [37] consist of five items regarding students' beliefs about the value of using ChatGPT in learning English. An example item statement is "I believe ChatGPT can help me learn vocabulary well."

Students' Normative Beliefs (NB) modified from Lampic *et al.* [38] consist of five items regarding students' beliefs arising from the influence of those who have effects on using ChatGPT in learning English. An example item statement reads "The university encourages students to use ChatGPT for English learning."

Students' Control Beliefs (CB) modified from Han *et al.* [39] consist of five items regarding students' beliefs referring to addressing the presence of components that may facilitate the use of ChatGPT in learning English. An example item statement is "The university's WIFI system can help me use ChatGPT easily during classes."

Students' Attitudes (AT) modified from Ma and Huo [40] consist of five items regarding students' favorable evaluation of using ChatGPT in learning English. An example item statement is "I am willing to use ChatGPT in learning English".

Students' Subjective Norms (SN) modified from Ma and Huo [40] consist of five items regarding the level of students' motivation to conform to their subjective perception of social

pressure to use ChatGPT in learning English. An example item statement reads "Using ChatGPT in learning English as encouraged by the university is important to me".

Students' Perceived Behavioral Control (PC) modified from Chen *et al.* [41] consists of five items regarding the level to which students believe in mastering skills and having resources needed for adopting ChatGPT in learning English effectively. An example item statement is "I am confident that I can use ChatGPT to learn English vocabulary effectively".

Students' Behavior Intentions (BI) to use ChatGPT in learning English modified from Lai *et al.* [37] consist of five items regarding the degree of students' willingness and effort to use ChatGPT in learning English. An example item statement reads "I will continue to use ChatGPT to study English".

C. Data Analysis

PLS-SEM method was used for data analysis because it seems to work as a causal-predictive method that interpretation and prediction-oriented model evaluation can occur simultaneously [42]. With PLS-SEM, small sample sizes are acceptable even when the model includes a number of constructs and a large number of items [43]. According to the informal standard of the tenfold rule, "the minimum sample size must be ten times the number of largest predictors in any equation in the system being estimated—regardless of the size of the system overall" [44]. Using PLS-SEM, small sample sizes can maintain basic functionality by ways of bootstrapping generated standard errors [44].

IV. Result

Before performing the assessments in PLS-SEM, the data were examined for missing variables, outliers, and normal distribution. In this study, no missing data or outlier variables were found and normal distribution requirements was also met. PLS-SEM consists of two main stages: the measurement model and the structural model assessments. Beginning with the measurement model assessment, reliability and confirmative construct validity were performed. After the results of the measurement model assessment were satisfied, the second stage was carried out. In the final stage, the evaluation of the structural model focused on assessing Variance Inflation Factor (VIF), causal correlations between the latent variables, and the coefficient of determination [45].

A. Measurement Assessment

All the constructs in the measurement models are reflective, so in this stage, assessing reflective measurement models was the focus. The assessment of the reflective measurement models involves assessing four factors including the outer loadings, consistency reliability, convergent validity, which is the Average Variance Extracted (AVE) for each construct, and discriminant validity. To meet the criteria of reflective measurement models, outer loadings should be above 0.7, composite reliability should exceed 0.7, and AVE should be above 0.5 [45]. In this research, outer loadings ranged from 0.725 to 0.941, composite reliabilities ranged from 0.891 to 0.963, and AVE ranged from 0.674 to 0.868. Therefore, these criteria were satisfied (See Table 1).

Finally, the Fornell-Larcker criterion was used for discriminant validity assessment, which requires that each construct's highest correlation with any other latent variables should not exceed the square root of its AVE [45]. The discriminant validity requirement in this research was also met.

Table 1. Reliability and validity of the constructs of the study

Constructs	Mean	Standard deviation	Indicator loadings	CR	AVE
Behavioral Belief (BB)	3.894	0.792	0.803–0.865	0.928	0.720
Normative Beliefs (NB)	3.567	0.880	0.837–0.913	0.950	0.792
Control Beliefs (CB)	3.482	0.897	0.725–0.890	0.911	0.674
Attitudes (AT)	3.773	0.772	0.913–0.936	0.966	0.852
Subjective Norms (SN)	3.656	0.775	0.912–0.941	0.971	0.868
Perceived Behavioral Control (PC)	3.816	0.740	0.869–0.919	0.953	0.801
Behavioral Intentions (BI)	3.851	0.731	0.803–0.865	0.961	0.832

B. Structural Assessment

The structural model assessment starts with testing collinearity among the predictor constructs by calculating the VIF values. The ideal VIF value should be lower than 3.3 [46]. VIF values in this research ranged from 1.00 to 3.19, meeting the requirement of structural model assessment.

The next step is the assessment of the structural model after the bootstrapping is implemented. In this research, a sample of 5,000 with a confidence interval of 95% was implemented as bootstrapping parameters. The results from the estimation of PLS-SEM for all hypothesized relationships in this research were significant and positive; that is, all hypotheses were supported by this research (see Table 2). Specifically, behavioral beliefs exhibit positive effects on attitude toward using ChatGPT in learning English (H1, β = 0.769, $p < 0.05$). Normative beliefs demonstrate positive effects on subjective norms to use ChatGPT in learning English (H2, β = 0.787, $p < 0.05$). Control beliefs show positive impacts on perceived behavioral control to use ChatGPT in learning English (H3, β = 0.524, $p < 0.05$). Attitude positively predicts the behavioral intentions to use ChatGPT in learning English (H4, β = 0.221, $p < 0.05$). Subjective norms are positive predictors of the behavioral intentions to use ChatGPT in learning English (H5, β = 0.154, $p < 0.05$). Perceived behavioral control is positively

correlated with the behavioral intentions to use ChatGPT in learning English (H6, $\beta = 0.620$, $p < 0.05$). Fig. 2 illustrates the path analysis results of six hypothesized relationships. Besides, this research explores the three indirect models illustrated in Table 3.

Table 2. Results of the hypothesis testing

Hypothesis	Path	Path Coefficients	f^2	Results
H1	BB→AT	0.769***	1.451	Accepted
H2	NB→SN	0.787***	1.623	Accepted
H3	CB→PC	0.524***	0.379	Accepted
H4	AT→ BI	0.221**	0.094	Accepted
H5	SN→BI	0.154*	0.062	Accepted
H6	PC→BI	0.620***	0.99	Accepted

Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 3. Results of the indirect effects analysis

Hypothesis	Path	Path Coefficients	p-value
H7	BB→AT→BI	0.17	0.004
H8	NB→SN→BI	0.121	0.02
H9	CB→PC→BI	0.325	0.000

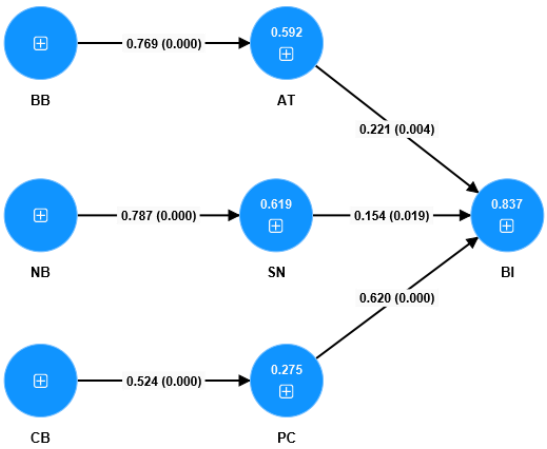

Fig. 2. The structural model of the research.

The above results indicated that students' behavioral beliefs, normative beliefs, and control beliefs positively predict their attitudes, subjective norms, and perceived behavioral control regarding the use of ChatGPT in learning English, respectively. Additionally, positive effects of attitude, subjective norms, and perceived behavioral control on the behavioral intention to use ChatGPT in learning English were observed. Finally, it was found that students' behavioral beliefs, normative beliefs, and control beliefs indirectly predict their behavioral intentions to use ChatGPT in learning English.

In addition to the path coefficients, the standard assessment criteria of the structural models should consist the coefficient of determination (R^2), which aims to assess the predictive value of the model [45]. In this study, the constructs explained 83% of the variance in the behavioral intention to use ChatGPT in learning English, indicating substantial effects for the predictor variables on behavioral intention [47].

The effect size f^2 measures the variation in the value of R^2 when an independent variable is omitted from the model [45]. The effect size with the value of 0.02, 0.15, and 0.35 represent small, medium, and large effects of the exogenous latent variable [47]. In this research, the behavioral beliefs, normative beliefs, and control beliefs had large effects on attitudes ($f^2 = 1.451$), subjective norms ($f^2 = 1.623$), and perceived behavioral control ($f^2 = 0.379$) regarding the use of ChatGPT in learning English, respectively. Moreover, small effects were found about the attitudes and social norms ($f^2 = 0.094$ and 0.062, respectively) on behavioral intentions to use ChatGPT in learning English, while perceived behavioral control had a large effect on behavioral intentions to use ChatGPT in learning English ($f^2 = 0.99$). Table 2 offers information of the effect size of this research.

V. Discussion

The current study adopted the TPB to explore the influence of students' beliefs on their intention to use ChatGPT to support the English learning process. The results indicated that all nine hypotheses were supported. Specifically, the results of testing hypotheses H1, H2, and H3 showed that students' behavioral beliefs, normative beliefs, and control beliefs have a positive impact on their attitudes, subjective norms, and perceived behavioral control regarding the use of ChatGPT in learning English. This means that students who believe that ChatGPT can effectively facilitate their learning of English tend to and are willing to apply ChatGPT in their English learning process. Moreover, students who believe that people who have influence over them, such as school administrators, teachers, classmates, seniors, friends, and relatives, support and encourage the use of ChatGPT in learning English are likely to think that using ChatGPT according to the above advice is important and necessary, and they tend to adhere to it. The more students believe they receive facilitation from school and family, as well as guidance from teachers and peers in using ChatGPT, the more confident they are in their ability to master the skills and use resources to effectively apply this tool to learning English. These findings are consistent with the TPB theory and the findings of previous studies [48–52]. For example, one study confirmed that non-traditional students' behavioral beliefs positively affect their attitudes toward transferring learned knowledge and skills from their study program at a higher education institution to the workplace; their normative beliefs have positive influences on social norms; and their control beliefs have positive influences on their self-efficacy [52]. These relationships were identified in another study examining knowledge sharing behaviors among academics in twelve private universities [50].

The results of testing hypotheses H4, H5, H6 confirmed that students' attitudes, subjective norms, and perceived behavioral control have a positive relation with their intentions to use ChatGPT in learning English. The findings suggest that students with a positive and willing attitude, a tendency to comply with advice from influential people, and confidence in their own abilities in using ChatGPT are more likely to continue their effort in applying ChatGPT to learning, as well as introducing and encouraging others to use this tool. The above findings are in line with the TPB theory that personal evaluation of behavior, socially expected behavior, and self-efficacy for the behavior all make important contributions to determining individuals' intentions, and consequently, their behavior. These findings also reaffirm the relationships found in previous studies [53–57]. Specifically, three antecedents, such as attitude,

subjective norm, and perceived behavioral control, positively impacted students' intentions to adopt technology [53]. These antecedents were also found to play a predictor role of students' continued intention to use ChatGPT in educational settings [54], or intention to comply with Internet ethical behaviors [55], or adoption of AI-based robots at Indian universities [56]. These relationships were also confirmed in a study on officials' intentions to use Web 2.0 tools in Taiwan [57].

Hypotheses H7, H8, H9 were supported, indicating the indirect effects of the three types of students' beliefs on their intention to use ChatGPT in learning English. This finding also confirms the role of belief in human behavior as emphasized by the TPB theory [20]. Although the above three types of beliefs are different, they all tend to associate with behavior with its specific characteristics, such as the value of the action, normative expectations, or the resources needed to perform the action; therefore, they act as unique and dominant factors that influence a person to engage in a particular behavior or motivate others to take a different course of action [20].

VI. Conclusion

This study adopted the TPB theory to examine the influence of students' beliefs, including behavioral, normative, and control beliefs, on their intention to use ChatGPT in learning English. The findings indicated that the three types of students' beliefs have a direct effect on their attitudes, subjective norms, and perceived behavioral control regarding the use of ChatGPT in learning English, as well as an indirect effect on their intention to use this tool. Additionally, the positive impact of their attitudes, subjective norms, and perceived behavioral control on the intention to use ChatGPT was also confirmed.

These findings added new direction in investigating behavioral intentions to use ChatGPT in ESL learning through the perspective of the TPB. It provided evidence to confirm the theoretical value of the TPB. Through the application of the TPB, the current study demonstrated the relationships between variables related to university students' intention to use ChatGPT for learning a foreign language. This result broadens the theoretical contributions of the TPB to the use of ChatGPT in English language learning and offers insights for further research aimed at employing the full version of the TPB as a foundational theory to explore behavioral intentions toward using AI-based applications in educational settings.

The results from this study also provides some practical implications in educational settings. Students' beliefs associates with the value of using ChatGPT, expectations, support, and facilitation from schools, teachers, and friends also play an important role in motivating students to make efforts to apply ChatGPT in learning English, thereby improving the effectiveness of learning English in general and students' reading and writing skills in particular. Therefore, school administrators and teachers may consider to focus on cultivating the above beliefs for students. Specifically, disseminating the results or information is needed for students to be aware of the importance and value of using ChatGPT in learning. Also, universities are encouraged to provide supports for students in terms of facilities, materials, and funding, as well as enhance accessibility of the environment for students to use ChatGPT. For example, students think that the university should equip a wireless network system and partially support them in owning ChatGPT accounts so that they can use ChatGPT in their English learning. Furthermore, the university should create opportunities for students to participate in programs or access to resources on how to use ChatGPT in learning. Finally, universities may encourage human resource development programs to provide training for enhancing instructors' capacities to use ChatGPT or other AI-based applications in teaching. Lecturers are the ones who have direct contact with students and can encourage them to use ChatGPT to learn English better. In addition, instructors can directly guide students in using ChatGPT to effectively learn English through class instructions and introducing online resources.

This study has some limitations, and these limitations provide insights for further research. First, because of financial and time constraints, one of the limitations of this research is small sample size. Further research might aim for a larger sample size to be able to compare the intention to use ChatGPT in learning between boys and girls and between students in different regions. Second, this study only focuses on investigating university students' intentions to use ChatGPT to learn English. Future research may target different research subjects, such as lecturers, high school students, or teachers to explore their intentions to use ChatGPT.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

Duong Hoang Thuy Tran and Yi-Fang Lee conducted the research, analyzed the data and wrote the paper. Hsinling Sonya Hung and Wen-Chung Kao reviewed and edited the paper. Hoang Bao Ngoc Nguyen designed the questionnaires and wrote the paper. All authors had approved the final version.

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