

THE RELATIONSHIP OF FACTORS INFLUENCING BEHAVIORAL INTENTION TO PARTICIPATE IN HYBRID EDUCATION: UNDERGRADUATE UNIVERSITY STUDENTS MAJORING IN ENGLISH, CHENGDU, CHINA

BY XIAOYI ZOU

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Abstract

This study explored the factors that influenced the behavioral intention of 450 undergraduate English major students in Chengdu across three universities to participate in hybrid education. The study employed a mixed-methods approach, combining a quantitative survey with confirmatory factor analysis and structural equation model analysis to establish relationships in the model. Qualitative focus group interviews were conducted to provide validation. The study's conceptual model included perceived ease of use, perceived usefulness, perceived convenience, attitude towards use, effort expectancy, social influence, and behavioral intention as key variables. The research found that Perceived Usefulness (PU) emerged as the most influential factor, closely followed by Perceived Convenience (PC) and Perceived Ease of Use (PEOU), all influencing Behavioral Intention (BI) with Attitude towards Use (AUT) as a mediator. Social Influence (SI) and Effort Expectancy (EE) exerted relatively weaker impacts on Behavioral Intention. Collectively, these results provided valuable insights into the determinants of English major students' participation in hybrid education. To enhance participation, the study recommended strategies emphasizing usability, usefulness, convenience, positive attitudes, and continuous evaluation, with the aim of creating an enabling environment for hybrid education.

(Total 216 pages)

Keywords: Hybrid Education, Behavioral Intention, Undergraduate, English

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CHAPTER 1

INTRODUCTION

The chapter provides an overview of the research background, objectives, conceptual framework, research scope, and significance of the study. The subsequent chapters will delve into the methodology, analysis, and findings, contributing to the enhancement of hybrid education for English majors in Chengdu universities.

1.1 Background of the study and Significance of the Problem

Since the sudden outbreak of the epidemic of COVID-19, the Ministry of Education in China has implemented an effort aimed at ensuring uninterrupted learning and promoting the use of online platforms in educational institutions for the purpose of continued instruction (Huang, Liu, Tlili, Yang, & Wang, 2020). Accordingly, during the academic year of 2020-2022, it was a requirement for Chengdu Municipal Education Commission to arrange college instructors to do online teaching to all students with diverse majors and disciplines. That was a starting point of hybrid education which is the combination of onsite and online teaching and learning especially for college levels (Powell, 2021; Zhang & Tang, 2021; Zhu & Liu, 2020).

"We can no longer, and should not, return to the previous state of teaching and learning before the epidemic," Wu Yan, head of the Chinese Ministry's Higher Education Department, said at a press conference on May 14, 2020 (Liu & Huang, 2020). The integration of online and offline teaching methods has emerged as a significant area of focus in higher education in China as well as elsewhere. (Bao, 2020; Hu & Li, 2020; Jin, 2019). This convergence has already given birth to a new way of practicing teaching and learning which has become a new normalized hybrid

education for universities in China (Sahu, 2019; Schulten, 2020; Siegelman, 2019; Stein & Graham, 2020; Tasman, 2020; Zhang, Wong, & Chu, 2020).

Actually, back to 2018, according to China Educational Informatization 2.0 Action Plan, the Ministry of Education of the People's Republic of China has released the plan to develop education modernization as to promote the renewal of educational concepts and all majors in colleges and universities are encouraged to acquire their efficiency skills in technology use in diverse contexts and learning settings with peers and instructors (Chen, 2021; He, 2021; Jiayi, Dongxu, Ruihao, Tao, & Wei, 2019; Yan & Yang, 2020). Given all of the aforementioned, it is evident that all university students must encounter challenges stemming from the hybrid education approach, which involves the integration of information technology and the use of technological resources in their newly established routine of daily learning both offline and online (Huang, 2020; Zhou, L., Wu, Zhou, M., & Li, 2020). This causes a synchronous hybrid learning both on-site and remote students are connected online and taught synchronously online in what is called the hybrid classroom or hybrid lecture hall (Raes, 2022).

Unavoidable, from 2019 to 2022 of multiple phrases of Covid-19, university students in all levels with any major of education must adapt themselves to participate in hybrid education in which communication between instructors and students had been usually carried out through network conferencing (Almahasees, Mohsen, & Amin, 2021; Bao, 2020). In a combination of both onsite and online in various forms of technology use, even unavoidable, it became an issue whether the students would be able to perform well through hybrid teaching and learning (Al-Azawei, Parslow, & Lundqvist, 2017; Al-Hamad et al., 2021; Al-Rahmi, 2019). Thus, behavioral intention, which is an individual's subjective possibility of willing to carry out some behavior that represents the cognitive presentation of either immediately choosing to take or not to take action to participate in certain situation, in this case, hybrid education, has turned out to be the most tested variable (Baber, 2020; Buabeng & Baah, 2020; Gao, 2021; Heilporn, Lakhal, & Bélisle, 2021;

Lightner & Lightner-Laws, 2016; Nuruzzama, 2016; Rodriguez, 2020; Singh, 2017; Yanes, 2004).

In recent years, behavioral intention to participate in hybrid education was done in various research and found to be the most significant among undergraduate students in different majors in using gadgets, applications, and systems (Chang, 2011; Cheng, 2014; Malik, Shrama, Trivedi, & Mishra, 2021; Thanyatorn, 2021) in that factors involving technological use in hybrid learning such as perceived convenience, social influence, and effort expectancy positively affects behavioral intention (Ayhan & Seki, 2021; Salari et al., 2020; Hsu, 2013). Those majors of university students including Arts & Animation (Dajani & Hegleh, 2021) Computer Science (Sousa, 2021; Basnet, Doleck, Lemay, & Bazelais, 2018; Bazelais, Doleck, & Lemay, 2018); Education (Hwang, 2018; Zhang et al., 2020); IT (Al-Emran, Abbasi, & Mezhuyev, 2020); and Nursing (Kumpulainen & Mikkola, 2016; Li, Q., Li, Z., & Han, 2021; Sanpanich, 2021; Snow, 2016; Williamson & Muckle, 2018) were emphasized in hybrid education research.

However, very few studies paid attention to behavioral intentions of students majoring in English while it was found that performance of EFL learners was successful in a larger variety of online learning themselves (Chen, C., Wang, & Chen, Y., 2014; Tan, 2015; Zhou et al., 2020). This study, hence, found it interesting to focus on English major students to participate in hybrid education. This is because the process of learning in an English language classroom is characterized by a high level of peer interactivity (Canale & Swain, 1980) in that to be effective in learning a target language students must be able to acquire proficiency in using all kinds of technological tools (Jiang et al., 2021; McCabe, 2017). Regarding effective interaction in an online participation, it has shown that the more the students positively perceived and accepted online learning, the more effective interaction they become while studying English which also resulting in better learning outcomes (Peng & Fu, 2021; Ketmuni, 2021; Syed et al., 2020; Yu & Shen, 2022).

In previous research, behavioral intention, in hybrid education, has turned out to be significantly influenced by various perceptive and attitudinal factors. Those factors included perceived ease of use, perceived usefulness, perceived convenience, effort expectancy, and social influence, while attitude towards use was found to be the intervening factor that later effect behavioral intention (Fishbein & Ajzen, 1975; Granić & Marangunić, 2019; Lin, Lee, Chang, & Fu, 2020; Nadlifatin et al., 2020; Sukendro et al., 2020). While perceived ease of use is defined a level or situation where the student believes that a particular technology can be used more efficient with effortless in the services from the target system (Dewi, 2020; Huang et al., 2020; Othman, Harun, & Rashid, 2019), it has been argued to be a predictor of attitude towards use and later on the behavior intention, in that the more of the perception of the ease of use, the better attitude towards use and the more behavioral intention of a person would gain (Qin, Liu, Mou, & Chen, 2019; Marakarkandy, Yajnik, & Dasgupta, 2016; Rui-Hsin & Lin, 2017).

As perceived usefulness is identified as the student's perception in utilizing technology in hybrid educational system that helped boost his or her learning performance (Fokides, 2017; Huang & Liaw, 2018; Vululleh, 2018), it was found to have a significant impact on how student intend to adopt technology as a tool in their learning system (Cabero-Almenara, Fernández-Batanero, & Barroso-Osuna, 2019; Chen & Tseng, 2012; Guritno & Siringoringo, 2013; Nagy, 2018; Salloum, Alhamad, Al-Emran, Monem, & Shaalan, 2019). It was explained that perceived usefulness was an essential reflection point for attitude towards use in that the more the student perceived the usefulness of the technology in hybrid learning, the better attitude towards use, the more intention of using particular adopted system would become (Almaiah, Alamri, & Al-Rahmi, 2019; Al-Maroof & Al-Emran, 2018; Golnaz, Zainulabidin, Mad-Nasir, & Eddie-Chiew, 2010; Kumar, Karabenick, Warnke, Hany, & Seay, 2019).

Perceived convenience involves with a student's technology ability regardless of place and time, a system or service, that is considered convenient for him or her while studying (Lim & Lee, 2021; Mokhtar, 2018). Hybrid education may

be characterized as a mode of instruction that offers more flexibility in terms of scheduling, location, and implementation, hence affording learners a heightened sense of convenience and adaptability throughout their engagement in hybrid learning. (Elnagar, Afyouni, Shahin, Nassif, & Salloum, 2021; Hussein & Hilmi, 2021). In recent years, in the research of information technologies such as wireless network (Yoon & Kim, 2007), mobile services (Suki, N. M., & Suki, N. M., 2011), and mobile applications (Tan, Lee, Lin, & Ooi, 2017), it has been found that perceived convenience is an essential factor that positively affects attitude towards use of technology.

Attitude towards use encompasses with student's attitude towards acceptance of technology (Deslonde & Becerra, 2018; Pitafi, Kanwal, & Khan, 2020) which helps cultivate the studying motivation to learn better (Bahjat, 2018; Rakoczy et al., 2019). A number of studies have determined attitude towards use as a vital factor impacting behavioral intention to accept and use a certain kind of technology (Chiou & Shen, 2012; Salloum et al., 2019; Zheng, Wang, Doll, Deng, & Williams, 2018). However, a certain number of research also explained that perceived ease of use, perceived usefulness, and perceived convenience as predictor factors that also had an effect on the intervening or mediator factor such as the attitude towards use (Abbad, 2013; Al-Rahmi et al., 2021; Eksail, & Afari, 2020; Joo, Park, & Lim, 2018; Marakarkandy et al., 2016; Shao, 2020; Tahar, Riyadh, Sofyani, & Purnomo, 2020;) as, later effect behavior intention.

Effort expectancy is a total effort of facility and easiness linked with positioning, adopting, and employing the technology and its effectiveness, illustrated in students' cognition about the utilization of technology in hybrid teaching and learning and (Babie, Čičin-Šain, & Bubaš, 2016; Fagan, 2019; Siddiqui, Soomro, & Thomas, 2021; Venkatesh et al., 2003). In other words, it is a level of ease associated with studying according to a particular learning system for the students (Bardakci, 2019; Mahande & Malago, 2019; Onaolapo & Oyewole, 2018). Some previous research illustrated that effort expectancy exerted significant active influence on student's behavioral intention to participate in utilizing the education technology in

learning (Tobarra et al., 2020; Wang, Liu, & Zhang, 2018; Yakubu & Dasuki, 2019).

Social influence is the level of perception convinced by a wise choice to employ the target educational technology and system (Mahande & Malago, 2019), for example, the degree to which students would convince themselves to participate in hybrid education by using different types of gadgets (Gagnon et al., 2020; Vaidyanathan, 2018; Weilage & Stumpfegger, 2022). Many studies also gave empirical support for a significant relationship between social influence and behavioral intention in adopting particular educational technology (Al-Sharafi et al., 2022; Nuttavuthisit & Thøgersen, 2017; Venkatesh et al, 2003).

However, as showed that very few of the behavioral intention findings concerned with English major students, particularly, in China, this study, has filled the gap in this area, emphasized on undergraduate students majoring in English as also responded to the policy of Chengdu Municipal Government of China which stated that students in all majors at the university level must use hybrid education effectively as a new normalized medium (Liu, Li, & Xiao, 2021; Wang, 2020; Xiong, Ling, & Li, 2021). This means that no exception for undergraduate students majoring in English in that they must adjust themselves from highly interactive nature of language learning (Jiang et al., 2020; Kubota & Takeda, 2021; Mart, 2018; McCabe, 2017) to embrace hybrid education with different degrees of behavioral intention (Li, 2020; Li & Zhao, 2020; Rahman, 2018).

Thus, this study had responded to the policy mentioned above and filled the gap of behavioral intention to participate in hybrid education. it focused on the relationship of factors influencing behavioral intention to participate in hybrid education as to obtain the model with the expectation of implementing it into the teaching and learning. With the COVID-19 pandemic, hybrid education has become necessitated a significant transformation in the style of learning in China, as noted before, no exception for English major students, who used to traditionally engage with their peers in a classroom setting (Swanson & Valdois, 2022).

It is expected that from now on, no matter what kinds of situations, whenever or wherever required or urged for hybrid education, the model of the relationship of factors effecting on behavioral intention to participate in hybrid education, created in this study could be used to help enable the students to achieve their goals in learning both online and onsite effectively (Haleem, Javaid, Qadri, & Suman, 2022).

Accordingly, the present study examined the relationship between various factors on the behavioral intention of undergraduate students majoring in English to participate in hybrid education in Chengdu universities with the hypotheses derived from a comprehensive theoretical framework through empirical analysis which was crucial to enhance the applicability in a wider range of scenarios in hybrid education. Moreover, to assure the feasibility of the contribution of the model, the interviews were performed in order to confirm its validity and reliability in the reign of behavior intention in hybrid education of undergraduate students majoring in English in Chengdu universities in China.

The objectives and the questions of the study were as follows:

1.2 Research Objectives

- 1.2.1 To explore the factor components influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in the universities in Chengdu.
- 1.2.2 To determine the causal relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu.
- 1.2.3 To obtain the confirmation of the model of the relationship of factors influencing behavioral intention of undergraduate students majoring in English to participate in hybrid education in universities in Chengdu.

1.3 Research Questions

- 1.3.1 What are the factor components that influence behavior intention to participate in hybrid education of undergraduate students majoring in English in the universities in Chengdu?
- 1.3.2 What is the causal relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu?
- 1.3.3 What is the confirmation of the model of the relationship of factors influencing behavioral intention of undergraduate students majoring in English to participate in hybrid education in universities in Chengdu.

1.4 Conceptual Framework

This study examined the causal relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in Chengdu univer1sities, China. Two main theories are applied -- Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology to develop the conceptual framework.

The conceptual framework was based on pre-established theories—TAM and UTAUT (Davis, 1989; Venkatesh et al., 2003). The research conceptual framework illustrated in Figure 1.1 displayed all causal relationships among each variable that aimed to investigate factors impacting English major students' behavioral intention to participate in hybrid education in Chengdu universities, China. The conceptual framework consists of seven variables that were typically categorized into three types: independent variable, dependent variable, and mediator variable.

The independent variables were: 1) perceived ease of use; 2) perceived usefulness;, 3) perceived convenience; 4) effort expectancy and social influence; 5) the mediator variable is attitude towards use, and the dependent variable is behavioral intention according to Davis (1989) Technology Acceptance Model (TAM) as a

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foundational framework to forecast students' behavioral towards the use of hybrid education with an extension of the original Technology Acceptance Model (TAM) and Venkatesh and Morris' (2003) Unified Theory of Acceptance and Use of Technology (UTAUT).

In the conceptual framework, five relationships among seven variables were listed: 1) the Perceived Ease of Use and Behavioral intention, with the Attitude towards Use serving as the mediating factor; 2) Perceived Usefulness and Behavioral intention, whereby the mediator was the Attitude towards Use; 3) Perceived convenience and Behavioral Intention, whereby the Attitude towards Use acted as a mediator; 4) Effort Expectancy and Behavioral Intention; and 5) Social Influence and Behavioral Intention. (See Figure 1.1).

Latent Variables:

Independent Variables (Exogenous Variables) – Perceived Usefulness, Perceived Ease of Use, Perceived Convenience, Social Influence, and Effort Expectancy.

Mediator Variables - Attitude Towards Use.

Dependent Variable (Endogenous Variable) – Behavioral Intention.

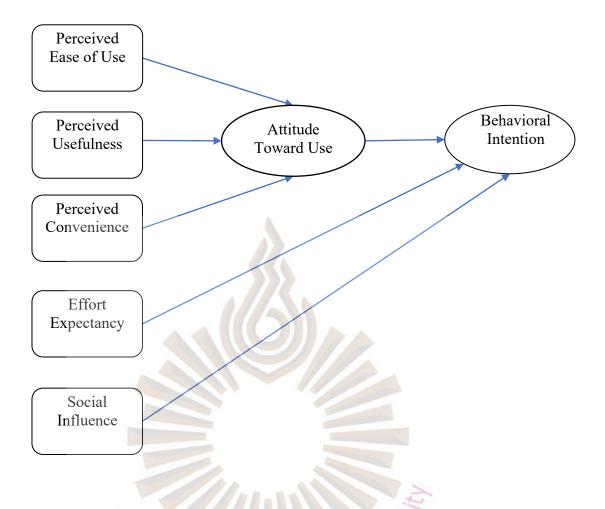


Figure 1.1 The Conceptual Framework

1.5 Research Hypothesis

- 1.5.1 Perceived Ease of Use has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.
- 1.5.2 Perceived Usefulness has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.
- 1.5.3 Perceived Convenience has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.
- 1.5.4 There is a significant causal relationship between Effort Expectancy and Behavioral Intention.
- 1.5.5 There is a significant causal relationship between Social Influence and Behavioral Intention.

1.6 Research Scope

This study utilized an explanatory sequential design, a commonly employed approach in mixed-methods research (Creswell, 2015). The explanatory sequential design consisted of an initial quantitative phase to explore the phenomenon and analyze data, followed by a qualitative phase to further investigate and explain the quantitative results in greater depth (Johnson & Christensen, 2019; Mutepfa & Tapera, 2018; Nimehchisalem, 2018; Schoen & Crilly, 2012).

1.6.1 Quantitative Phrase

In the framework of the explanatory sequential design (Creswell, 2019), this research commenced with a quantitative phase focusing on undergraduate students majoring in English across three target universities in Chengdu,

1.6.1.1 Population

The population under investigation in this study comprises 800 undergraduate students majoring in English, all of whom have experience with hybrid education. These students are drawn from three prominent universities: Chengdu University, with a total of 311 English major undergraduates, Sichuan University, with 281 English major undergraduates, and Sichuan Normal University, which has 208 English major undergraduates. In total, the study encompasses this diverse group of 800 English major undergraduate students across these universities, providing a comprehensive perspective on their experiences with hybrid education

1.6.1.2 Sampling

A sample size of 450 respondents with a composite sampling technique, integrating both stratified and systematic approaches of every 2nd name on the list were included from three universities: Chengdu University (175), Sichuan University (158), and Sichuan Normal University (117).

1.6.1.3 Measures

Before distributing the questionnaire, its validity was ensured by conducting the index of Item-Objective Congruence (IOC) with the five experts who are the scholars in the field of Education, and the IOC result was 1. 00. A survey research design was employed with the items of the questionnaire that were taken and adapted from 6 experts and researchers. A five-point Likert scale ranking from Strongly Disagree (1) to Strongly Agree (5) was used to measure the factors influencing the behavioral intention of undergraduates majoring in English in universities in Chengdu. After that the questionnaire was pretested with 30 non-samples of undergraduate students majoring in English. Cronbach alpha values of 0.7 or higher indicate acceptable internal consistency. The reliability (Cronbach Alpha Coefficient) was 0.918.

1.6.1.4 Research Instrument

The questionnaire used in this study aimed to explore the factors which effected behavioral intention to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu.

The questionnaire consisted of two parts:

Part I: Demographic information

Part II: The factors influencing the students' behavioral

intention

Part I: Demographic Information:

The function of demographic information items is to gather background information of the respondents (Chen, 2018; Lodico, Spaulding, & Voegtle, 2006) and provide data for the preliminary analysis for the survey research (Salkind, 2017). The demographic information included: gender; age; names of universities; years of study.

Part II: The factors influencing the students' behavioral intention which contained of 48 items of 7 variables:

- (1) Perceived Ease of Use (PEU) items 1-7;
- (2) Perceived Usefulness (PU) items 8-13;
- (3) Perceived Convenience (PC) items 14-20;
- (4) Attitude Towards Use (ATU) items 21-27;
- (5) Effort Expectancy (EE) items 28-33;
- (6) Social Influence (SI) items 34-41; and
- (7) Behavioral Intention (BI) items 42-48.

1.6.1.5 Data Analysis

SPSS was used for a Descriptive Statistics: Frequency; Percentages; Averages; Standard Deviation; Skewness; and Kurtosis. Drawing from Taherdoost (2019), attitudes ranged from Strongly Agree to Strongly Disagree, and were further delineated as Strongly Positive Attitudes (SPA) to Strongly Negative Attitudes (SNA). Within SPSS, the reliability of the survey items was examined using Cronbach's Alpha Coefficient (α). Delving deeper, the study employed AMOS for confirmatory factor analysis (CFA) and structural equation modeling (SEM), ensuring a rigorous examination of the relationships and construct validity as to prove the hypotheses. The quantitative phase then set the foundation for a subsequent qualitative analysis, ensuring a comprehensive and layered understanding of the data.

1.6.2 Qualitative Phrase Rongsit

The results from the questionnaire were drawn to write questions for the interview. There were four male and five female student informants who were interviewed. The information background of the students who participated in the interview was pseudonyms to protect the identities of the participants.

1.6.2.1 Focus Group

Focus group with a semi-structured interviews were used to confirm the relationship of factors influencing behavioral intention to participate in hybrid education of undergraduates majoring in English at universities in Chengdu. Adopted semi-structured interview protocol, the focus group interview was carefully crafted to align with the research goals and questions, offering a flexible yet structured framework for gathering in-depth insights from participants.

1.6.2.2 Content Analysis

In the qualitative portion of the study, the content analysis with a thematic analysis (Peel, 2020) was employed to confirm, complement and elucidate the findings of the quantitative phase. The structured coding techniques of thematic analysis were used to delve deeper into the nuances of the data. Interview data was gathered through remote semi-structured focus groups. The study utilized the Nvivo12 program to conduct a detailed thematic analysis of data from semi-structured interviews. Embracing an inductive approach, the raw content underwent a systematic transformation, progressing through stages of open initial coding, reviewing themes, and naming theme.

Analysis via NVivo12, identified pivotal themes and formed a holistic picture about perceptions of undergraduate students majoring in English towards hybrid education, which rigorously corroborated, aligned seamlessly with and validated the quantitative findings. This alignment demonstrated the capacity of the analysis to offer cohesive and comprehensive insights, ensuring that the qualitative exploration effectively confirmed supported and clarified the initial quantitative results (Creswell, 2015).

To prevent social bias and maintain the integrity of the study, it was crucial not to directly solicit stakeholders' opinions during interviews, as it could potentially lead to biased responses. Instead, the research strategy focused on implementing informed consent procedures outlined in the interview protocol, being attentive to participants' needs, and ensuring data collection in a confidential manner. These measures were employed to mitigate response bias and unintended influence on research findings (Robinson & Leonard, 2019).

1.7 Definition of Terms

Behavioral Intention: a student's subjective possibility of willing to carry out some behavior that represents the cognitive presentation of either immediately choosing to take or not to take action to participate in certain situation.

Perceived Ease of Use: a level or situation where the student believes that a particular technology can be used more efficient with effortless in the services from the target system

Perceived Usefulness: a belief of a student that using a particular tool can enhance his or her work efficiency and performance to a certain extent.

Perceived Ease of Use: a level or situation where a student believes that a particular technology can be used more efficient with effortless in the services from the target system.

Perceived Convenience: a student's technology ability, regardless of place and time, a system, or service, that is considered convenient for him or her while studying.

Attitude towards Use: a student's attitude towards acceptance of technology.

Effort Expectancy: a student's total effort of facility and easiness linked with positioning, adopting, and employing the technology and its effectiveness.

Social Influence: a student's level of perception convinced by a wise choice to employ the target educational technology and system.

Undergraduate Students: students majoring in English -- the freshmen, sophomore, junior, and senior students who currently enrolled in universities in Chengdu.

Hybrid education: a situation that uses a mixed mode of teaching and learning or instructional approach that use both traditional face-to-face or place-based classroom methods and online instruction.

Confirmation: the results obtained from the interviews with experts in validating the SEM derived in this study.

Chengdu University (CDU): a major comprehensive university backed by Chengdu, the nation's core metropolis which established in collaboration with Chengdu metropolis and Sichuan Province. There are now around 24,000 full-time students at Chengdu University. Currently, the fields of arts, literature, management, education, economics, law, engineering, medicine, science, and agriculture provide 62 undergraduate specializations and 10 disciplines.

Sichuan Normal University (SICNU): a provincial key university located in Chengdu is the first normal university to undertake the basic undergraduate normal education in Sichuan Province founded in 1946. SICNU has been developing into a comprehensive university with over 40,000 undergraduates. SICNU has developed 11 discipline fields and 82 undergraduate programs including Literature, Sciences, Engineering, Philosophy, Economics, Management, Law, History, Education, Art and Agriculture.

Sichuan University (SCU): one of the best universities in China which is based in Chengdu and is affiliated with the Ministry of Education. There are now around 37,000 undergraduate students at SCU. With 138 undergraduate programs, Sichuan University offers a wide variety of fields in 12 categories, including the humanities, science, engineering, medicine, business, management, law, history, philosophy, agriculture, education, and art.

1.8 Research Contribution

Although hybrid education has been prevailing in different majors of universities in Chengdu of China, there are still certain issues that need to be understood by instructors about students' behavioral intentions and psychological demands of how students encountered. As there is still some ambiguity in the policy-making for hybrid education by the relevant academic administrations, these issues would directly affect the actual hybrid education implementation. Accordingly, the model of behavior intention of undergraduate students majoring in English found in this study could be implemented into dairy teaching and learning in hybrid education in different universities that share similar characteristics and structure of subject areas and studies as to improve the development of the hybrid teaching and learning for undergraduate students majoring in English of China in the future.

This study provided valuable insights with distinct implications for various stakeholders. Policymakers and university administrators could utilize the findings to inform and refine hybrid education policies, ensuring they aligned more closely with the behavioral intentions and psychological demands of English major students. By addressing existing ambiguities in policy-making, these stakeholders were able to enhance the overall quality of higher education for English majors, creating more student-centric and effective learning environments. For administrators specifically, these insights offered guidance in curriculum design, technological infrastructure, and support services, which could lead to improved hybrid learning experiences and higher student satisfaction. Additionally, English major students themselves benefited by gaining a deeper understanding of their own intentions and needs within hybrid education. This knowledge empowered them to make informed decisions, engage more effectively with course materials, and communicate their preferences, ultimately contributing to a more tailored and enriching educational experience. In essence, this research aimed to optimize the educational landscape for English majors in Chengdu and similar academic contexts, benefiting all stakeholders involved.

1.9 Research Limitations

The limitations of this study are that the population and sample merely target for the three public universities in Chengdu of China. If the universities in other regions of China are examined, there might possibly be a certain degree of differences in the educational majors in hybrid instructional platform in other regions in China with different research framework to furtherly explore the conceptual structure of the behavioral intention towards continuance use of hybrid education.



CHAPTER 2

LITERATURE REVIEW

This chapter serves as a comprehensive literature review, which initiates with an in-depth exploration of the theory that has been extensively employed in this study. Furthermore, it reviews the theoretical and conceptual framework that has been employed to investigate the research topic, along with offering an evaluative review of the variables that constituted a part of this investigation. Finally, the chapter concludes with a discussion on the related literature. The literature review plays a crucial role in setting a strong foundation for the forthcoming chapters, which will delve into the research methodology, analysis, and findings.

2.1 Theory of Reasoned Action (TRA)

Over the last several decades, a considerable body of research has been undertaken using the Theory of Reasoned Action (TRA). Fishbein first proposed the TRA in 1967, and he and Azjen further expanded and redefined it in 1975 (MBA Skool Team, 2013). Even the TRA model was initially created for sociological and psychological studies, and only recently has it started to serve as a basis for investigations into how student behave when using information technology (Zuo, Mu, & Han, 2012). Additionally, this paradigm effectively explains all human behavior (Ajzen & Fishbein, 1980). According to the TRA, it implies that Behavioral Intention governs individual activities. Conversely, attitude and subjective norms define Behavioral Intention. A certain behavior is significantly influenced by attitude and subjective norms.

The casual relationship is shown in Figure 2.1, which consists of four constructs: attitude, subjective norm, Behavioral Intention, and behavior. Regarding the theory, Fishbein and Ajzen (1975) identified attitude as individuals' favorable or

unfavorable feelings towards the conduct. Lai (2008) mentioned that attitude is an individuals' evaluation of an object and identified belief as a linkage between an object and an attribute. Subjective norm refers to an individual's assessment of what essential others think he/she should do (Fishbein & Ajzen, 1975).

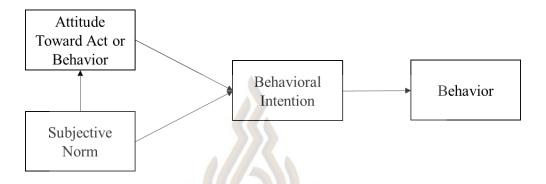


Figure 2.1 The Theory of Reasoned Action Model Source: Fishbein & Ajzen, 1975

Even though the TRA model is widely used in past decades, there are some limitations to applying this model. First, there is a major risk of mis-defining attitudes and subjective standards because they can both be changed into one another. Additionally, one assumption—which is frequently false—is that when people have the intention to carry out a specific activity, they are free to do so without any restrictions. In reality, there may be restrictions on one's ability to act due to financial, material, social, or environmental constraints. The TRA model has been extensively employed as a core idea in many investigations despite its limitations. However, in order to identify better processes that effectively explain creativity and the role of Behavioral Intention, extended theories are needed (Yadegari, Mohammadi, & Masoumi, 2022). Therefore, based on the theory of Reasoned Action (TRA), Davis (1989) expanded TRA into the Technology Acceptance Model (TAM). In order to describe and predict human behavior, TRA primarily takes into account the connection between behavioral intention and user attitude. While the TAM theory places a greater emphasis on technical innovation.

2.2 The Theory of Technology Acceptance Model (TAM)

Initiated by Davis, the Technology Acceptance Model (TAM) is a well-known and popular paradigm for identifying user acceptance behavior (Fang, Lee, Lou, Tsai, & Yang, 2008). Perceived Usefulness and Perceived Ease of use are two distinct elements that Davis (1989) felt determine whether a given information technology system is accepted or rejected. The causal link between Perceived Ease of use, Perceived Usefulness, and Behavioral Intention of the technology led to the development of the TAM theoretical model. One of the most popular and successful theories for analyzing why consumers use information technology systems is the TAM theory (Rauniar, Rawski, Yang, & Johnson, 2014). This model has been widely used to illustrate how users adopt various new technological systems in the theoretical framework of this kind of research. TAM was also utilized in numerous behavioral studies in education to assess how users Perceived using technology and whether they were likely to embrace the system (Akhlaq & Ahmed, 2015). The TAM model's efficacy has received much acclaim. Different extended versions of TAM constructed by different studies have been developed to predict people's adoption for the technology and their purpose to employ it as a result of later research that revealed additional factors, such as PEOU and PU, that would also affect users' application of new technologies in addition to those introduced by Davis in the original TAM model (Fokides, 2017).

Davis, Bagozzi, and Warshaw (1989), put forward the first original version of Technology Acceptance Model (TAM), demonstrated in Figure 2.2 and classified the factors influencing attitudes into two variables: Perceived Usefulness and Perceived Ease of use. Davis et al. (2021) thought that Attitude towards Use would directly affect behavior intention, and then directly affect actual usage, while Attitude towards Use was mainly determined by Perceived Usefulness and Perceived Ease of use.

Perceived Ease of use, Perceived Usefulness, and attitude toward usage are the three key components in the TAM theoretical matrix that determine whether the sample intends to utilize a particular technology. Because of the target system's effectiveness, Perceived Ease of use reflects the consumption of particular services (Bashir & Madhavaiah, 2015). The degree to which a person believes that using the system would improve his or her performance or productivity is reflected in Perceived Usefulness (Fokides, 2017). The key factor that affects behavior-related intentions to use the target system is attitude toward usage, which is affected by Perceived Usefulness. The main factors affecting specific clients are these two independent variables. The sample's attitude toward the information system was found to be highly indicative of its acceptance of technology use (Kline, 2016). The TAM made the assumption that Perceived Usefulness and Perceived Ease of use were both independent variables influencing attitude. Furthermore, Behavioral Intention—the determining element in whether a system is really used—is positively influenced by both attitude and Perceived utility. Davis also suggested that various external factors would affect Perceived Usefulness and Perceived Ease of use. Therefore, many research have proposed that the TAM will have a higher explanation impact for its continuous use intention if it can expand its external variables (Alshurideh, Al Kurdi, & Salloum, 2019; Han & Sa, 2021; Kamal, Shafiq, & Kakria, 2020).

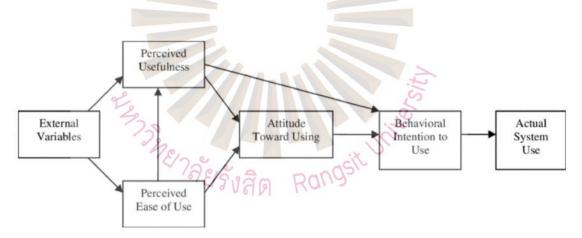


Figure 2.2 The Technology Acceptance Model Source: Davis et al., 1989

There are two primary assumptions in technology adoption in the TAM model: Perceived Ease of Use and Perceived Usefulness are significant technology acceptance factors. According to this model, Perceived Usefulness means how much individuals think the technology will enhance performance or efficiency. Perceived Ease of Use means the extent of individual thinks how comfortable using the technology functions. These two

variables then determine the user attitude towards technology adoption. The model also concludes that the Perceived Usefulness will also affect Behavioral Intention. The attitude determines the conduct, which, in turn, affects the actual usage (Raeisi & Lingjie, 2014; Zigu, n.d.).

TAM has been widely applied in several studies of technology adoption; however, there are some weaknesses. One of the TAM constraints is the variable that pertains to user behavior, which is inevitably assessed by subjective norms such as Behavioral Intention or interpersonal influence. However, interpersonal influence as a subjective norm is explained that an individual is influenced by colleagues or friends' words of mouth. While a manager may affect employees by leading a subordinate to execute a specific technology-based task, a colleague or a friend does not directly impact staff based on their IT policy. Additionally, an essential aspect of behavior cannot be empirically investigated because of different subjective variables such as norms and values of societies and personal attributes and personality traits. Thus, the idea of technology adoption influenced by friends or colleagues through severe social stress (Mishra et al., 2019; Ong & Lai, 2006) is exceptionally unprovable. Moreover, according to Ogunsola and Olojo (2021), the TAM limitation is that it does not account for user task environments and constraints, influencing the acceptance and willingness to use technology.

2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

Developed by Venkatesh et al. in a 2003 empirical research, Unified Theory of Acceptance and Use of Technology (UTAUT) was used to examined earlier key technology acceptance frameworks. The most current idea to describe how the public adopt technology is the UTAUT Matrix. The four important factors in the UTAUT are performance expectation, Effort Expectancy, Social Influence, and enabling circumstances. These variables are used to predict users' intention to use and actual usage. To further explain users' unique variances in their acceptance of technology, four moderators—gender, age, experience, and voluntariness of use—are also added (Venkatesh, Thong, & Xu, 2012).

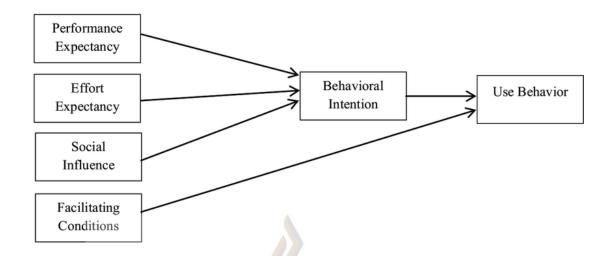


Figure 2.3 The Model of Unified Theory of Acceptance and Use of Technology Source: Venkatesh et al., 2003

Effort expectancy represents the extent of facility and easiness linked with positioning, adopting, and employment of the particular system (Venkatesh et al., 2003). Performance expectancy is determined as the level to which a human being is convinced that employment of the specific system would enhance the working achievement in a particular activity (Mahande & Malago, 2019). The Social Influence is a typical social psychological phenomenon which reflects the process of the human's behavior and attitude influenced by the social atmosphere or social pressure (Nuttavuthisit & Thøgersen, 2017).

The previous research verified the UTAUT matrix for miscellaneous user behavior from diverse contributors about diverse technological learning situation. For instance, several studies by Zincume and Marimuthu (2022) had tested the sample's behavior towards the interactive smart boards; Adanir and Çinar (2021) and Abbad (2021) had demonstrated factors impacting the undergraduate's behavior to engage in online learning system. Alowayr (2022), Gupta and Agarwal (2021) had determined factors influencing students' behavior in mobile-learning activity. It has been illustrated that the UTAUT model has been validated to demonstrate and forecast the Behavioral Intention towards the technology adoption from a particular user group. Nonetheless, the study from Venkatesh et al. (2012) recommended the significance of

the measurement of UTAUT on disparate nations, cultures, customs, and technological characteristics since factors and elements that affected the acceptance of the technology might be influenced by these external variables.

2.4 Behavioral Intention

Behavioral intention focuses on determined action that explains individual's reflections of behavior in willingly accepting a particular system (Chauhan, 2015). It explains how much an individual intend to do well without making too much effort and desire individual has to execute his or her behaviors as to obtain his or her goals (Ajzen & Fishbein, 1980; Asadi, Nilashi, Husin, & Yadegaridehkordi, 2017) with a purpose of whether or not to exhibit a specified behavior in the future (Cigdem & Ozturk, 2016; Fokides, 2017). Behavioral intention, thus, focuses on determined action that explains student's behavior in accepting a particular system (Chauhan, 2015) in that they make plans to implement certain conscious behaviors in the future (Warshaw & Davis, 1985). It is also identified as an indicator of how difficult individuals are prepared to attempt and how much effort they plan to make things done with certain kinds of behaviors (Ajzen, 1991). Moreover, it also reflects the extent to which a student is willing to recommend a prescribed learning system to others (Wang, Jeng, & Huang, 2017). Behavioral intention, in this study, hence, is defined as the immediate reflections of student's attitudes and perceptions in terms of his or her effort and desire that expect to reward his or her study without difficulty of using online technology by choosing, adopting, accepting, making Ease of Use in accordance with others in participating in hybrid teaching and learning which in turn will recommend the implementation of those behaviors to others.

Behavioral intention reflects on the intention a person possesses to access a target system and could be determined as an immediate demonstration of user actual behavior (Qin et al., 2019). Behavioral intention is a vital indicator of effective employment of a certain technology or system (Bardakcı, 2019). There might be many other factors affecting the learner's Behavioral Intention to use a system in the learning process (Cigdem & Ozturk, 2016). Other studies aim to investigate factors that impact

Behavioral Intention of university students on e-learning use during the COVID-19 pandemic which suggested that university students' Behavioral Intention toward e-learning use can be predicted by attitudes which was the most prominent construct to use e-learning during the pandemic (Mailizar, Almanthari, & Maulina, 2021). Behavioral intention, in this study, is generally supposed to be the immediate reflection of students' intention whether to choose to adopt hybrid learning in the future or not.

2.5 Perceived Ease of Use

Perceived Ease of Use is defined as the extent to which an individual believes that utilization of both the platforms and service system are not difficult, suitable, and efficient in studying and participating in hybrid education (Bashir & Madhavaiah, 2015). It also indicates the degree to which the interaction is clear and understandable while interacting with others through any platforms (Chauhan, 2015). Accordingly, Perceived Ease of Use is referred to the degree of which a university student is convinced that he or she will become skillful with the particular leaning tool or platform to fulfill sone task (Zhou et al., 2020). Overall, in this study, Perceived Ease of Use is defined as the level of the student's belief and perception in utilization of any platforms or service systems that are not difficult, efficient, and suitable in manipulating all kinds of technological tools while interacting and participating with others in hybrid teaching and learning (Chauhan, 2015) in that it turned out not to be a burden, but easy, understandable, and effective (Panergayo, 2021; Qin et al., 2019).

Many previous studies conducted a study on the acceptance of hybrid education among university students, emphasizing that system simplicity and user-friendliness contribute significantly to students' positive attitudes and intentions and with the improvement of the Perceived Ease of Use of the information system, students' acceptance and utilization of the system were likely to increase (Fokides, 2017; Setyawati, 2020; Sun & Gao, 2020). If a technology was easier to use, then the technology was easier to be accepted by people, and the possibility of being used by people would increase accordingly (Bashir & Madhavaiah, 2015; Nagy 2018). This conception has been used to estimate students' adoption of innovative education

technology as it demonstrates the motivation of the student and the consequential impact of a crucial approach in using educational technology (Vululleh, 2018). Focusing specifically on China, Bao (2020), Ren, Zheng, and Wu (2016), Sun and Gao (2021) explored the adoption of hybrid learning among undergraduates, finding that the students' Perceived Ease of Use of the learning platform directly influences their intention to participate in hybrid education. Their study underscores the need for educational institutions in China to invest in user-friendly and intuitive hybrid learning platforms to foster positive student attitudes and participation. The balance between content assimilation and grappling with system complexities is a critical aspect of students' learning experience in hybrid education settings which highlights that when students find the learning system easy to use, they are able to devote more cognitive resources to understanding and assimilating content, rather than navigating the complexities of the system (Chen et al., 2022; Li et al., 2021).

2.6 Perceived Usefulness

Perceived Usefulness is defined as the extent to which the individual is convinced that utilization of the specific system would enhance his or her learning effectiveness (Davis, 1989). It is the level in which a student perceives and expects that the employment of online system and platform become useful in their hybrid teaching and learning (Vululleh, 2018; Yang, D., Yang, A., & Hang, 2020) and would promote his or her learning performance (Chauhan, 2015). According to Tambun, Sitorus, & Pramudya (2020), Perceived Usefulness refers to how individuals perceive the utility of newly adopted technology. It refers to the extent to which a person believes that using a tool would make them more effective at completing a job (Nagy, 2018). It also refers to a person's view of how much a technology or tool will aid them in achieving their objectives and how much they feel utilizing a certain system would improve their professional or academic performance (Abraham, Septian, Prayoga, & Ruman, 2020). Thus, in this study, Perceived Usefulness is the degree to which a student believes and perceives that utilization of a target system and a platform of online leaning in hybrid education system would boost his or her learning productivity and enables him or her finish learning more effectively (Fokides, 2017).

The evaluation of the Perceived Usefulness of a certain system is perhaps the foremost determinant in determining the adoption of the technology. In the realm of education, it is often considered to be an important driver of both student and teacher's satisfaction, according to Davis (1989) and Togaibayeva et al. (2022). Previous research has shown that there is typically a significant correlation between user success and Perceived Usefulness (Al-Fraihat, Joy, & Sinclair, 2020). Kubota and Takeda (2021) argue that the use of e-learning systems offers significant benefits in terms of offering enough resources, accurate scheduling, and geographical flexibility. Several studies provide a comprehensive review, confirming the significant role of Perceived Usefulness in predicting students' acceptance of educational technology (Mart, 2018 & Setyawati, 2020). While both Perceived Usefulness and Perceived Ease of Use are essential, studies suggest that Perceived Usefulness may have a greater impact on students' Behavioral Intentions (Shi, Yang, H., MacLeod, Zhang, & Yang, H. H., 2020; Yang et al., 2020). Consequently, this facilitates and enhances the learning experience of university students. The strength of Perceived Usefulness has been recognized in several previous research to been a dominant element in identification of the users' intention to accept the target system (Shahzad, Hassan, Aremu, Hussain, & Lodhi, 2021).

2.7 Perceived Convenience

According to Yoon (2007), Perceived Convenience in the context of IT refers to the user's capacity to access technology at any time or location. or a way in which a system or service is convenient (Malik et al., 2021). Furthermore, it is worth noting that the extent to which a student perceives a specific educational technology as a convenient method of learning can be assessed (Berry, Seiders, & Grewal, 2002). This assessment is based on five dimensions, namely time, place, acquisition, use, and execution, which collectively determine the convenience of a product or service in facilitating task completion (Brown, 1990; Yoon & Kim, 2007). In the present study, the concept of Perceived Convenience refers to an individual's subjective assessment of the amount of convenience experienced in terms of time, location, and execution when engaging in Hybrid learning.

According to a number of studies, Perceived Convenience is an important factor influencing students' Behavioral Intentions to engage in different learning model. Chang, Yan, and Tseng (2012) determined the correlation between the five vital variables in the context of utilization of e-learning for the Chinese undergraduate EFL students. The Perceived Ease of Use, Perceived Usefulness, Perceived Convenience, attitude toward use and continuance intention to use which were involved in this research were derived from TAM theoretical framework. The results revealed that Perceived Convenience was one of the antecedent factors that affected acceptance of English mobile learning and had significantly positive effect on continuance of intention to use the learning system. Chang, Hajiyev, and Su (2017) delved into this relationship, discovering that when students found it easier to intertwine learning with their daily activities, their willingness to engage in hybrid education surged. The study revealed that a sense of autonomy — where students can access educational resources without time or location constraints — amplifies their intent to embrace such platforms.

Mokhtar, Katan, and Hidayat-ur-Rehman (2018) extended this discussion, emphasizing that English majors, in particular, showed heightened engagement intentions when they could blend their learning seamlessly with their routines. Here, it's not just about accessing content but the holistic experience, which includes easy navigation, intuitive interfaces, and flexibility that resonated with students' lifestyles, fostering their intent to adopt hybrid education. Revythi and Tselios (2019) emphasized the autonomy factor, suggesting that when students felt they had control over their learning pace and environment, their Behavioral Intention towards hybrid models was more favorable. Wang (2020) exploration within undergraduate context spotlighted an intricate dynamic. As students found it easier to dovetail their learning with their urban lifestyles — such as listening to English lessons during commutes — their predisposition towards hybrid models grew. Mailizar, Burg, and Maulina (2021) and Li et al. (2021) added a social dimension to this discourse. Their findings resonated with previous studies, but with an added revelation: students' intentions were significantly influenced by the ease with which they could socially connect on these platforms anytime and anywhere. It wasn't just about content; it was also about creating and being part of learning communities without friction.

2.8 Attitude Towards Use

Attitude towards use is a stabilized psychological intention of a human being towards a particular object or system. (Ajzen, 1991). Attitude towards use reflects the level to which an individual accepts or rejects to utilize a certain technological system. (Ajzen & Fishbein, 1977). Attitude towards use is determined as a crucial indicator of an individual's acceptance of the educational technology as a positive step of learning (King & He, 2006). Attitude towards use also reflects the preference of an individual for the technique to take it or not (Ozgen & Kurt, 2013). This variable is the extent to which a person favors and associates a particular system with his or her performance (Chauhan, 2015). In that respect, Attitude towards Use, in this study, is defined as the attitude of a psychological intention in accepting or rejecting to utilize a certain technological system in that it reflects both the preference of taking or not taking the technique and a primary point of judgment whether he or she would employ the hybrid educational technology as a good and wise decision during their studying process. (Bahjat, 2018; Celik & Yesilyurt, 2019).

Attitude towards use, in this study, is the primary judgmental point of the students whether they would employ the hybrid education technology during their studying process. (Celik & Yesilyurt, 2019). Attitude towards use is identified by two variables which are Perceived Ease of Use and Perceived Usefulness (Nagy, 2018). Previous research indicates that attitude towards using the new-fashioned technology might become the obstacle to technology integration for the instructors. (Beri & Sharma, 2019; Unal, & Uzun, 2021). Attitude towards use is a variable in psychological domain which could directly influence the specific person's behavior (Atabek, 2020). Attitude towards use could be combined with emotional, cognitive, and behavioral factors which show internal consistency with one another (Atabek, 2020).

2.9 Effort Expectancy

Effort expectancy can be defined as the extent to which an individual feels either he or she can practicably use technology in easy or difficult ways based on their technological usage behavior in using, adopting, and employing technology (Sair, Danish, & Qaisar, 2018). It is also defined as the level of ease connected to the utilization of the specific educational system (Bardakcı, 2019; Mahande & Malago, 2019; Onaolapo & Oyewole, 2018; Ssekakubo, Suleman, & Marsden, 2011). It is the level of ease with which a system (like Web 2.0) or a process can be used and is predicated on the notion that there are connections between the work effort expended, the results obtained from that effort, and the rewards attained as a result of that effort (Ogunsola & Olojo, 2021). Additionally, it relates to how users perceive the amount of effort and usability needed to use learning tools (Bouteraa, Raja Hisham, & Zainol, 2022; Wairimu, Githua, & Kungu, 2019). Thus, in this study, Effort Expectancy means students' levels of ease and effectiveness in workably using, adopting, and employing technology in hybrid learning.

A number of previous research have determined Effort Expectancy as the essential point for particular technology or system utilization (Mtebe & Raisamo, 2014). This variable is also the vital factor for Behavioral Intention to utilize information technology (Chen et al., 2021). Students who have low-level Effort Expectancy are more possible to obtain unsatisfactory studying outcome or retrogress in his or her employment of the target system. (Liu & Huang, 2015). Effort expectancy exerted a forceful effective influence and strong pointer of education technology acceptance (Ngampornchai & Adams, 2016).

2.10 Social Influence

Social influence means the level to which individual student detects of how essential it is for him or her to be convinced by others of whether he or she should accept technological utilization of online learning system (Venkatesh et al., 2003). That Social Influence also has seen as a perception about other's attitude and

behaviors (Goldsmith, 2015; Mahande & Malago, 2019) towards particular social atmosphere or pressure in that it convinces a person to do what other people do (Nuttavuthisit & Thøgersen, 2017). It is the degree to which a student has been convinced of what to do in accordance with others in the process of hybrid educational system (Qin et al., 2019). Social influence, thus, in this study, is the level to which a student is convinced of what to do in accordance with others in the process of hybrid educational system with a wise choice of to employ the technology or platform systems.

According to Gallego, Luna, and Bueno (2008), one of the major influences on people's views about using certain technologies was Social Influence. The inclination to use technology may be directly influenced by Social Influence (El-Masri & Tarhini, 2017). Hao (2017) believed that the Social Influence might be the decisive factor for users to adopt a certain technology. The use of technology and the growth of technology in education were shown to be significantly influenced by social impact, according to several research on diverse cultural and social effects. Previous study achievements have illustrated that a college student's judgement is generally impacted by the previous students or other individuals such as the professor or family member (Mahande & Malago, 2019; Nuttavuthisit & Thøgersen, 2017). University students' interest for a particular learning technology was activated by classmates or the instructors (Chaka & Govender, 2017; Mtebe & Raisamo, 2014).

2.11 Theoretical Framework

The current study aims to offer an integrated perspective by merging the elements from both the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). In addition, this foundational structure was enriched by other critical constructs identified from a wealth of scholarly literature, specifically focusing on Behavioral Intention associated with technology-enhanced learning systems. Three foundational theoretical frameworks, each with unique contributions, informed the creation of this study's conceptual framework.

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Mailizar et al. (2021) presented the first theoretical framework after researching how university students behaved while considering using e-learning during the COVID-19 epidemic. The link between Perceived Usefulness, Perceived Ease of Use, attitude toward usage, and Behavioral Intention to use an e-learning system was highlighted by this study. The TAM structure served as the basis for this study's research framework. Findings suggested that students' Perceived Usefulness, Perceived Ease of Use, Attitudes towards Using to accept e-learning significantly shaped their Behavioral Intention during the pandemic.

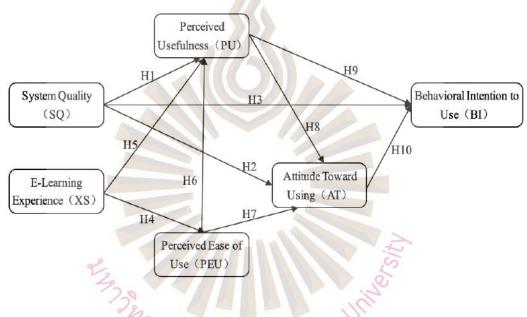


Figure 2.4 The 1st Research Framework Source: Mailizar et al., 2021

The 2nd theoretical framework from Malik et al. (2021) included Perceived Convenience into the Technology Acceptance Model (TAM). This framework aimed to examine the different factors influencing the Behavioral Intention of university students to embrace chatbots for educational purposes. In this research, an extension was made to the technology acceptance model (TAM) first suggested by David (1989) by including the concept of Perceived Convenience. The research investigated the interconnections between Perceived Usefulness, Perceived Ease of Use, attitude, Perceived Convenience, Enhanced Performance, and Behavioral Intention to embrace chatbot technology for learning purposes.

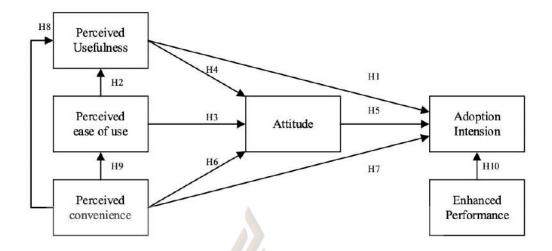


Figure 2.5 The 2nd Research Framework Source: Malik et al., 2021

The 3rd theoretical framework was investigated by Mahande and Malago (2019), who carried out "An e-learning acceptance evaluation through UTAUT model in a postgraduate program." The present research examines the relationship between performance expectation, Effort Expectancy, Social Influence, and enabling factors with Behavioral Intention, as outlined in the UTAUT model. The objective is to assess the level of acceptability of online learning technology among students. The outcomes reaffirmed the UTAUT model's robustness, revealing that all key variables held substantial sway over e-learning acceptance. Each component, whether it was Effort Expectancy or the facilitating conditions, held a tangible, positive influence over students 'attitude to adopt the learning model.

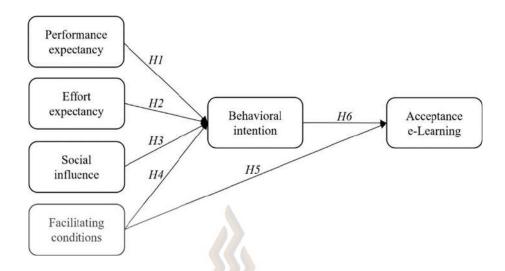


Figure 2.6 The 3rd Research Framework Source: Mahande & Malago, 2019

2.12 Conceptual Framework

Two main theories (TAM and UTAUT) and 3 theoretical frameworks which were demonstrated above supported and constructed the conceptual framework of this study. This study's conceptual framework is modified from three theoretical frameworks, which are depicted in Figure 2.4, Figure 2.5, and Figure 2.6. The research framework is illustrated in Figure 2.7, which displays all causal relationships among each variable.

The study's conceptual framework has seven variables which are categorized into three distinct types: independent factors, intermediate variables, and dependent variables. The research examined several independent factors, including Perceived Usefulness, Perceived Ease of Use, Perceived Convenience, Effort Expectancy, and Social Influence. This research has one mediator variable, namely Attitude towards Use. The dependent variable of this research is Behavioral Intention. Based on the above-mentioned related theories and variables, this study determined the conceptual framework and related variables of the factors that affect the Behavioral Intention to participate in hybrid education of undergraduates majoring in English in Chengdu.

Therefore, the current study is on the relationship of factors that impact Behavioral Intention to participate in hybrid education of undergraduates majoring English universities in Chengdu. There are two major purposes of the study: the first is to identify the factors that impact the students' continuous intention to use hybrid education; the second is to determine the underlying causal relationships among the factors. The initial expectation is to understand the factors that affect hybrid education usage behavior thus can shed light on the improvement of such education.

The study investigated the five relationships between these variables in the conceptual framework. Perceived Ease of Use and Behavioral Intention are the exogenous and endogenous variables in the first relationship, which also includes attitude toward usage as a mediator. The second relationship is between Behavioral Intention and Perceived Usefulness, with attitude toward use serving as the mediator; Behavioral Intention and Perceived Usefulness are the exogenous and endogenous variables, respectively. The third relationship is between Behavioral Intention and Perceived Convenience, with attitude toward usage serving as the mediator; Behavioral Intention is an endogenous variable, whereas Perceived Convenience is an exogenous variable. The fourth relationship is the relationship between Effort Expectancy and Behavioral Intention; The fifth relationship is the relationship between Social Influence and Behavioral Intention. (see Figure 2.7).

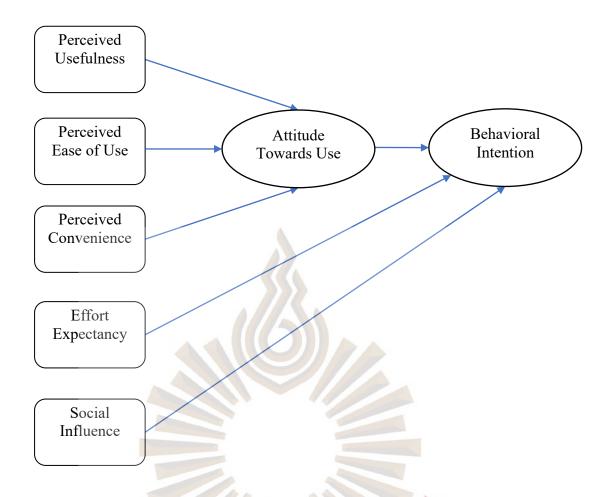


Figure 2.7 The Conceptual Framework
Source: Researcher

This study explored the vital factors influencing Behavioral Intention which contained Perceived Ease of Use, Perceived Usefulness, Perceived Convenience, Attitude towards Use, Effort Expectancy and Social Influence of the undergraduate students majoring in English from three public universities in Chengdu of China. Furthermore, this research examined the causal connection and interaction mechanism among the latent variables to reveal how these factors impact the students' Behavioral Intention to participate in hybrid education.

2.13 Related Research

Firstly, a certain number of previous academic research works had ascertained that Perceived Ease of Use generates its influence through the intervening variable Attitude towards Use on other variables such as intention (Al-Rahmi et al., 2021; Panagiotarou, Stamatiou, Pierrakeas, & Kameas, 2020). Perceived Ease of Use has exerted the significant influence on Attitude towards Use (Setyawati, 2020; Sun & Gao, 2020). Moreover, Attitude towards Use is the effect factors of Perceived Usefulness inside the TAM theoretical model which argues that a human being who detected the utilization of the technology was undemanding and would develop the inclination to become aware of it as useful and serviceable (Buabeng-Andoh, 2018; Widuri, Handoko, & Riantono, 2019). Furthermore, many other studies provided empirical support for a positive relationship between Perceived Ease of Use and Attitude (Goh, Hii, Tan, & Rasli, 2020; Handoko, 2019; Kimathi & Zhang, 2019; Lake, 2020). A meta-analysis of the literature by Mahmood, Hall, and Swanberg (2001) affirmed that Perceived Ease of Use had an indirect impact on Behavioral Intention through Attitude towards Use in technology adoption.

Various studies have revealed that Perceived Ease of Use positively impacts the people's opinion of how they will use a particular system (Venkatesh, 2000; Davis et al., 1989). A few studies have discovered that a Perceived Ease of Use influence on samples' opinion towards using the technological system (Davis et al., 1989; Karahanna, Straub, & Chervany, 1999; Taylor & Todd, 1995; Venkatesh, 2000). Additionally, Habibi, Mukminin, Pratama, and Harja (2019) and Lew, Lau, and Leow (2019) have found that Perceived Ease of Use has significantly impacted Behavioral Intentions of the students through attitudes towards use while using online learning technology. A number of academic studies demonstrated that Perceived Ease of Use exerted the positive and active effect on Attitude towards Use of the specific technology in educational situation (Huang & Liaw, 2018; Salloum & Shaalan, 2018; Teo, Zhou, Fan, & Huang, 2019; Turnbull, Chugh, & Luck, 2021). Numerous studies provide empirical support for a positive relationship between Perceived Ease of Use and Attitude towards Use during new IT adoption (Alfadda & Mahdi, 2021; Chen,

2008; Huang & Liaw, 2018; Lawson, McKenzie, Becker, Selby, & Hoover, 2018; Rizun & Strzelecki, 2020; Yoon & Kim, 2007).

Secondly, a few studies determined that Behavioral Intention was indirectly impacted by the variable Perceived Usefulness through the mediator variable Attitude towards Use (Almaiah & Alismaiel, 2019; Nagy, 2018). Studies on information technology have confirmed the active influence of Perceived Usefulness on Attitude towards Use for employing the information technology systems as assumed in the Technology Acceptance Model (Bashir & Madhavaiah, 2014; Cabero-Almenara et al., 2019; Nagy, 2018; Venkatesh, 2000). Besides, some research works have determined the indirect impact of Perceived Usefulness on Behavioral Intention through Attitude towards Use in educational field. (Al-Maroof & Al-Emran, 2018; Cheng, Lam, & Yeung, 2006; Chiou & Shen, 2012; Salloum et al., 2019; Zheng et al., 2018). Some studies had ascertained that Perceived Usefulness indirectly affected the intentions of the students in using learning management technology through the mediator factor Attitude towards Use (Cicha, Rizun, Rutecka, & Strzelecki, 2021; Eraslan & Kutlu, 2019). Additionally, several other studies provide empirical support for a positive relationship between Perceived Usefulness and Attitude towards Use in new educational technology adoption (Huang et al., 2020; Sukendro et al., 2020; Sun & Gao, 2020; Teo et al., 2019).

Thirdly, some studies confirmed that Attitude towards Use was an essential reflection point for Behavioral Intention (Golnaz et al., 2010). Davis (1989) ascertained attitude as an essential conception in technology acceptance model and asserted that attitude influenced the behavioral tendency of the individual. Attitude towards use exerted an essential active impact on particular samples' Behavioral Intention to the specific system. (Dabholkar & Bagozzi, 2002). Numerous studies designed the theoretical matrix to predict the utilization of the specific educational technology which illustrated a vital function of attitude in affecting Behavioral Intentions of the students (Azli, Shah, & Mohamad, 2018; Chao, 2019; Revythi & Tselios, 2019; Sun & Gao, 2020). Additionally, a plenty of studies gave empirical support for a significant relationship between the students' Attitude towards Use and

Behavioral Intentions while learning (Al Kurdi, Alshurideh, Salloum, Obeidat, & Aldweeri, 2020; Buabeng-Andoh, 2018; García Botero, Questier, Cincinnato, He, & Zhu, 2018; Svenningsson, Höst, Hultén, & Hallström, 2022; Zhu, 2020).

Besides, a number of academic studies demonstrated how Perceived Convenience significantly impacted Behavioral Intention and Perceived Convenience was defined as the external variable in TAM which positively affected the endogenous variable Behavioral Intention (Hsu & Chang, 2013). In recent years, in the research of information technologies such as wireless network (Yoon & Kim, 2007), RFID (Hossain & Prybutok, 2008), online shopping decision-making (Gupta & Kim, 2007), 3G mobile services (Suki & Suki, 2011), mobile applications in tourism (Tan et al., 2017) as well as other fields in education like acceptance and use of Moodle (Hsu, 2013)), English learning intention in mobile environment (Chang, Lin, & Yan, 2011), m-learning acceptance (Cheng, 2014), adoption of chatbots for learning (Malik et al., 2021), and actual use of Cloud Learning (Thanyatorn, 2021), it has been found that Perceived Convenience is an essential factor that affects the acceptance of new technologies or system and Perceived Convenience positively affects Behavioral Intention of adopting technology. Learners' experiences with hybrid platforms significantly shape their attitudes towards these systems. A survey conducted by Sharma and Verma (2022) noted that students who reported high levels of Convenience in accessing their course materials were more likely to express positive sentiments about hybrid education. Similarly, Nguyen and Tran (2023) highlighted that convenience factors, such as userfriendly interfaces and responsive design, played a pivotal role in fostering positive attitudes.

Additionally, previous studies confirmed that Effort Expectancy was an important determinant of Behavioral Intention (Ambarwati, Harja, & Thamrin, 2020; Azizi, Roozbahani, & Khatony, 2020; Prasad, Maag, Redestowicz, & Hoe, 2018; Teo & Noyes, 2019). Some previous research illustrated that Effort Expectancy exerted significant active influence on human Behavioral Intention to utilize the education technology (Hsu, Wang, & Chiu, 2009; Tobarra et al., 2020; Yakubu & Dasuki, 2019). Drew (2014) suggested that Effort Expectancy was actively connected with Behavioral

Intention. Numerous studies provide empirical support for a positive relationship between Effort Expectancy and Behavioral Intention in new educational technology adoption (Chao, 2019; Kumar & Bervell, 2019; Malureanu, Panisoara, & Lazar, 2021; Qashou, 2021). Students who have low-level of Effort Expectancy are more possible to obtain unsatisfactory studying outcome or retrogress in his or her employment of the target system. (Liu & Huang, 2015). Effort expectancy exerted a forceful effective influence and strong pointer of education technology acceptance (Ngampornchai & Adams, 2016).

Furthermore, it has been shown in many research that Social Influence may have both advantageous and disadvantageous impacts on individuals' Behavioral Intentions (Vermeir & Verbeke, 2006). Mahande and Malago (2019) have confirmed that Social Influence positively impacted Behavioral Intention of student in adoption of online learning in the UTAUT theoretical matrix in nonexperimental quantitative research. Other studies have also found that Social Influence an important determinants of students' Behavioral Intentions in learning (Chao, 2019; Chaka & Govender, 2017; Jairak, Praneetpolgrang, & Mekhabunchakij, 2009; Raza, Qazi, Khan, & Salam, 2021). Additionally, many studies gave empirical support for a significant relationship between Social Influence and Behavioral Intention in adoption of a certain educational technology (Buabeng-Andoh, 2021; Hsu, 2013; Hsu & Lin, 2022; Kumar & Bervell, 2019; Persada, Miraja, & Nadlifatin, 2019).

2.14 Mixed Method

Mixed methods, as defined by Creswell (2015), integrate qualitative together with quantitative techniques for gathering or interpreting data. The primary premise is that integrating qualitative and quantitative approaches results in a thorough comprehension of the study subject. Studies that employ questionnaires and interviews to gather data in succession are a common example (Creswell, 2015).

Investigations using mixed methods may be sequential or concurrent; when investigations first collect data using one of the two data collecting techniques quantitatively or qualitatively—and then gather the other kind of data while the two methods are interdependent, the research has sequentially designed mixed methods. In contrast, both quantitative and qualitative data are simultaneously and independently gathered in concurrent mixed designs (Creswell, Plano, Gutmann, & Hanson, 2003). Social, behavioral, and health disciplines all employ research using mixed methodologies. In order to make interpretations, it includes gathering both quantitative and qualitative data (Creswell & Clark, 2007). In comparison to utilizing each kind of data on its own, this strategy offers a greater knowledge of the study topic. Mixedmethods research adhere to two categories of designs: fundamental designs and sophisticated designs (Creswell, 2015). Advanced designs include intervention, social justice, and multistage assessment designs, while basic designs comprise convergence, explanatory sequential, and exploratory sequential designs. The explanatory sequential basic design is used in this investigation. In this approach, quantitative data are first gathered and analyzed, then qualitative data are gathered and analyzed to complement or explain the quantitative conclusions. This study used a strict mixed-methods design in order to take use of the combined benefits of both research methodologies. According to research (Creswell, 2015; Johnson & Onwuegbuzie, 2007), the mixedapproaches approach enables a more thorough study of a continuous learning process than the use of simply quantitative methods. Therefore, a mixed-methods approach has been used for this research in order to be able to disclose more explanatory data and to better understand the fundamental factors that influence Behavioral Intention of undergraduate students majoring in English to engage in hybrid education in Chengdu.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter provides a comprehensive overview of the research methodology employed in this study. It begins by explaining the rationale for using an explanatory sequential approach and focuses on the qualitative phase and qualitative phase respectively. The chapter also addresses population, sampling, and measures taken to maintain research reliability and validity. Overall, this chapter serves as a guide for understanding the research methodology, providing a solid foundation for comprehending the subsequent chapters and the findings presented.

3.1 Research Plan

This study utilizes an explanatory sequential design, a commonly employed approach in mixed-methods research (Creswell, 2015). The explanatory sequential design consists of an initial quantitative phase to explore the phenomenon and analyze data, followed by a qualitative phase to further investigate and explain the quantitative results in greater depth. This design typically includes two phases: quantitative and qualitative (Johnson & Christensen, 2019). Survey and focus group interview will be used in the two phases.

3.2 The First Phase – Quantitative Research

Quantitative research has depended on survey questionnaire to collect data for analysis and forecast the individual's behavior (Schoen & Crilly, 2012). The respondents of this research completed the questionnaires separately. The survey questionnaires were distributed to the three target universities.

Prior to distributing questionnaires to samples at the target universities, three experts were invited to assess the index of Item-Objective Congruence (IOC) to ensure the questionnaire's validity. The scales for verifying questionnaire items are as follows:

Scoring +1 = Certain that the test is congruent with the objectives or content.

Scoring 0 =Uncertain that the test is congruent with the objectives or content.

Scoring -1 = Certain that the test is NOT congruent with the objectives or content.

3.3 Population and Samples

3.3.1 Population

The population of this study are 800 undergraduate students majoring in English with the experience in hybrid education in the following universities in Table 3.1. For additional information, it's important to note that in China, there is no fifth year in university education due to Chinese regulations. All undergraduate programs typically take four years to complete (Guo, Y., Guo, S., Yochim, & Liu, 2022).

Table 3.1 Number of Undergraduate students majoring in English of Target Universities

University Name	Number of undergraduate students majoring in English	
Chengdu University	311	
Sichuan University	281	
Sichuan Normal University	208	
Total Number	800	

3.3.2 Sample Size

Sample size is important when statistical power of an analysis is considered in covariance-based methods, especially in SEM. On the one hand, Kline (2011) provides an extensive exploration of SEM principles and practices in his book "Principles and Practice of Structural Equation Modeling." While discussing sample size considerations, he emphasizes the oft-repeated guideline of having 5 to 10 cases per parameter as a general heuristic. This guideline, as pointed out by Kline, forms a solid foundation but also necessitates a keen awareness of specific model complexities. Additionally, Jackson (2003) highlights that the sample size should ideally surpass the number of parameters estimated, with a minimum recommendation of 5 cases per parameter. In the realm of SEM, Tanaka (1987) offers valuable insights in his article "How big is big enough?". He reiterates that while the 5:1 ratio can serve as a rule of thumb, various factors such as model specification, the magnitude of loadings, and error variances can influence this guideline. Lastly, Marsh, Hau, and Wen (2004) in their article titled "In Search of Golden Rules" critically evaluate these heuristics and advocate for a nuanced approach. While they acknowledge the 5-10 cases per parameter rule, they emphasize that other aspects such as model fit and data quality cannot be ignored. On the other hand, in recent years, many scholars like Cohen (1988) and Westland (2012) proposed a calculation of minimum sample based on three indicators: standard statistical power, effect size, and level of significance and proposed an online statistical algorithm tool, developed by Soper (2019), for calculating the appropriate minimum sample size. Dikilitas and Reynolds (2022), in their book "Research methods in language teaching and learning: A practical guide" also proposed this algorithm tool to develop the appropriate sample size for SEM and CFA. Following the criteria, we specified a small effect size of 0.2, a middle point of magnitude for small effect, a statistical power of 0.8 and 0.05 level of significance in setting the lower bound for samples needed for this study. With 48 indicators and 7 latent variables, the result suggests that a minimum sample size of 425 would be sufficient to achieve a statistical power for precision in our analysis. In this study, we took into consideration the potential challenges associated with data collection and aimed to ensure the robustness of our analysis. To address these concerns and to

mitigate potential uncertainties and enhance the study's methodological rigor, an oversampling approach was adopted. This strategy involved the inclusion of a surplus number of participants beyond the minimum sample size requirements (Kumar, 2019; Ryan, 2013). Thus, a sample size of 450 used for our analyses is deemed to be adequate.

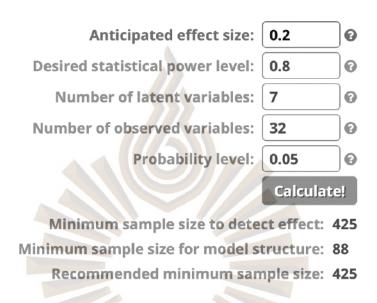


Figure 3.1 Sample Size Calculation for Structural Equations Modeling
Source: Soper, 2023

The provided image shows the tool by Soper (2019) to calculate the minimum sample size for a Structural Equation Modeling (SEM) analysis based on certain input parameters: anticipated effect size, desired statistical power level, number of latent variables, number of observed variables, and the probability level.

Therefore, 450 undergraduate students are decided to be selected from three public universities as the sample size according to the equation modeling statistical technique in Chengdu for reliable statistical results.

3.3.3 Sample methods

In this research it is essential to ensure the representativeness of the sample and the reliability of research findings in that stratified and systematic sampling were used.

Stratified Sampling: The population is initially divided into distinct subgroups (strata) based on specific criteria—in this study, the year of study (e.g., Freshman, Sophomore, Junior, Senior). The objective is to ensure that each subgroup is adequately represented in the sample.

Systematic Sampling: Within each of these strata, a systematic approach is employed to select the participants. This involves choosing a starting point randomly and then picking every k^{th} participant to form the sample.

The combination of these two methods allows for the benefits of both to be utilized—stratified sampling ensures that each subgroup (or stratum) of the population is adequately represented, while systematic sampling provides an efficient method to select participants from within those strata. The two steps of sampling procedures will be demonstrated in detail as follows.

First step: Stratified sampling:

Stratified sampling involves dividing the population into distinct subgroups or strata based on specific criteria. This ensures that each subgroup is adequately represented in the sample (Lohr, 2009). The initial step was to classify students based on their academic year of study, spanning Freshman, Sophomore, Junior, and Senior levels across three universities. Then, it follows with determining sample size in each stratum: proportional allocation was used to determine the sample size for each stratum. The formula employed was:

$$n_{\text{stratum}} = \left(\frac{N_{\text{stratum}}}{N_{\text{total}}}\right) \times n_{\text{total}}$$
(3-1)

where:

- n_{stratum} =Sample size for the stratum
- N_{stratum} =Total number in the stratum
- N_{total} = Total population
- N_{total} =Total sample size

For instance, considering the Sophomores at Sichuan University:

$$n_{\text{stratum}} = \left(\frac{71}{800}\right) \times 450 \approx 40$$

This method ensured that each stratum was represented in the final sample in proportion to its size in the total population.

Second step: Systematic Sampling:

Systematic sampling is an efficient method to select individuals from a larger population by following a systematic interval (Kish, 1965). Secondly step concern on determining sample size from each stratum by systematic sampling. The calculation of the sampling interval (k) was a pivotal step. It was determined through the following formula:

$$k = \frac{\text{Total number in stratum (N)}}{\text{Sample size for stratum (n)}}$$
(3-2)

For Sophomore at Sichuan University for instance:

$$k = \frac{71}{40} \approx 1.78$$

Drawing the sample: When k is not a whole number, it implies that a fractional student would be included in the sample (Lohr, 2009). In such cases, it is

more logical to round k to the nearest whole number, in this case, 2, to maintain a straightforward and manageable selection process. Starting from the 1st student in the Freshman stratum, include every '2nd' student in the sample until the desired sample size of 40 is achieved.

The selection of 'every 2nd' student is chosen for practicality and to ensure an even distribution across the stratum.

By applying this combined stratified and systematic sampling method, the research achieved a representative and well-distributed sample at each targeted University. The combination of stratified and systematic sampling techniques enhances the reliability and generalizability of the research findings, guaranteeing that each subgroup of the population is adequately represented (Bhandari, 2023).

Table 3.2 shows the precise sampling data in practice.

Table 3.2 The Proportional Sampling Units for the Stratified Sampling

Target Public	Year of	Total Sample Size =	Sample Size
Universities	Study	800	for the Stratum = 450
Chengdu	Freshman	94	53 (94 x 450/800)
University	Sophomore	107 ggil	60 (107 x 450/800)
	Junior	รับสิต 37Rangs	21 (37 x 450/800)
	Senior	73	41 (73 x 450/800)
Sichuan	Freshman	73	41 (73 x 450/800)
University	Sophomore	71	40 (71 x 450/800)
	Junior	66	37 (66 x 450/800)
	Senior	71	40 (71 x 450/800)
Sichuan Normal	Freshman	46	26 (46 x 450/800)
University	Sophomore	91	51(91 x 450/800)
	Junior	32	18 (32 x 450/800)
	Senior	39	22 (39 x 450/800)

After the final number of samples was determined, the allocation of valid questionnaires for each of the target universities was decided as follows: 175 for Chengdu University, 158 for Sichuan University, and 117 for Sichuan Normal University."

Table 3.3 Number of Questionnaires in Target Universities

University Name	Number of questionnaires
Chengdu University	175
Sichuan University	158
Sichuan Normal University	117
Total questionnaires for distribution	450

3.4 Research Instrument

The questionnaire used in this study aimed to explore the factors which impacted behavioral intention of undergraduate students majoring in English to participate in hybrid education at universities of Chengdu. The questionnaire consisted of two parts:

Part I: Demographic information

Part II: The factors influencing the students' behavioral intention

3.4.1 Part I: Demographic Information

The function of demographic information items is to gather background information of the respondents (Chen, 2018; Lodico et al., 2006) and provide data for the preliminary analysis for the survey research (Salkind, 2017). The demographic information included: gender; age; names of universities; years of the study.

3.4.2 Part II: Factors Influencing the Students' Behavioral Intention

This section contained 48 items. It is categorized into 7 groups as the following:

- 1) Perceived Ease of Use (PEOU) items 1-7;
- 2) Perceived Usefulness (PU) items 8-13;
- 3) Perceived Convenience (PC) items 14-20;
- 4) Attitude Towards Use (ATU) items 21-27;
- 5) Effort Expectancy (EE) items 28-33;
- 6) Social Influence (SI) items 34-41;
- 7) Behavioral Intention (BI) items 42-48.

Items 1 to 7 demonstrated perceived ease of use; items 8 to 13 demonstrated perceived usefulness; items 14 to 20 demonstrated perceived convenience; items 21 to 27demonstrated attitude towards use; items 28 to 33 demonstrated effort expectancy; items 34 to 41 demonstrated social influence; and items 42 to 48 demonstrated. behavioral intention.

Table 3.4 Summary of Items of the Part II of the Questionnaire

Construct	Taken and Adapted from	Items
Perceived Ease of Use (Vululleh, 2018)		7
Perceived Usefulness	(Sangjo et al., 2010)	6
Perceived Convenience	(Chang et al., 2012)	7
Attitude Towards Use	(Bashir & Madhavaiah, 2014)	7
Effort Expectancy	(Mtebe & Raisamo, 2014)	7
Social Influence	(Mtebe & Raisamo, 2014)	7
Behavioral Intention	(Mikalef et al., 2016)	7

In this study, a five-point Likert scale was employed to assess the factors related to students' behavioral intention.

The Likert scale is the extremely widely utilized scale in quantitative measurement research (Lodico, 2006; Salkind, 2017). Likert scales were scored by giving a weight to every point along the scale, and the respondent's score was the evenness through all the items. It should be noted that 5 illustrates the strongly agree for the favorable items, and it was contrary for the unfavorable items which 5 represents the strongly disagree (Salkind, 2017).

In this study, each of the participants should score a certain number which demonstrates the explicit attitude.

The degree of agreement is represented as follows:

1 = Strongly disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

Level of agreement and attitude were analyzed and determined by the study of Taherdoost (2019).

The Level of Attitudes were:

The Mean scores of 4.5-5.00 = Strongly Positive Attitude (SPA)

The Mean scores of 3.50-4.49 = Positive Attitude (PA)

The Mean scores of 2.5-3.49 = Moderately Positive Attitude (MPA)

The Mean scores of 1.50-2.49 = Negative Attitude (NA)

The Mean scores of 1.00-1.49 = Strongly Negative Attitude (SNA)

The Level of Agreement:

The Mean scores of 4.5-5.00 =Strongly Agree

The Mean scores of 3.50-4.49 = Agree

The Mean scores of 2.5-3.49 = Neutrally Agree

The Mean scores of 1.50-2.49 = Disagree

The Mean scores of 1.00-1.49 = Strongly Disagree

Back translation will be done (Ozolins, Hale, Cheng, Hyatt, & Schofield, 2020; Son, 2018). First, the English version of the questionnaire will be translated into Chinese and then will be translated back into English in order to check by Professors in English major from the College of Foreign Languages and Cultures of Chengdu University in order to ensure the accuracy of the translation. After careful verification and revision, the translation accuracy of the Chinese version questionnaire in this study has matched the criteria of the back translation.

3.5 Validity and Reliability of Quantitative Research

According to Zamanzadeh et al. (2015), quantitative structures required the validity and reliability of the research instruments. Wiersma and Jurs (2009) confirmed that validity indicated the generalizability of explaining the results of the research, and the reliability indicated the degree to which that research could be repeated, which applied to both research methods and research results. Content validity and internal consistency reliability affect the credibility of the research results.

To ensure the accuracy and significance of this study, content validity and internal consistency reliability are discussed in this section before collecting the data.

3.5.1 Content Validity

Content validity revealed the level to a specific test highlighted the massive number of items from which it was chosen, and it was extremely useful when assessing attitude or accomplishment tests in which the sample demonstrated a specified

extent of knowledge or awareness (Salkind, 2017). According to Yusoff (2019), content validity was the extent to which the assessment instrument mirrored the evaluated construct and was confirmed as a critical demonstration to support the validity of the evaluation implemented, which included the quantitative research questionnaire.

The assessment of content validity was conducted by selecting participants from a pilot group, so establishing the criteria for both sampling validity and item validity (Lodico et al., 2006). Furthermore, content validity refers to the expert evaluation of the extent to which a measurement tool accurately captures the intended construct. The present study used the index of item objective congruence (IOC) to assess the validity.

3.5.1.1 Indexes of Item-Objective Congruence (IOC)

In order to ensure content validity, it is recommended that the assessment team form a dedicated group consisting of experts or educators in the relevant study domain. This group should be responsible for evaluating the alignment between the assessment items and the intended objectives, as well as determining the extent to which content validity is present (Ary, Jacobs, Irvine, & Walker, 2018). The indicator used to analyze the congruence between items and objectives proved to be the most efficient method for quantitatively assessing the evaluations conducted by content experts on individual items.

Item-object congruence necessitates that the experts do an evaluation of the questionnaire items in order to see if they effectively assess the specific constructs or variables that the study aims to analyze.

According to Turner and Carlson (2003), the experts would use a set of rating scales consisting of +1, 0, and -1. These values are used to represent the following: The numerical value "1" signifies a high level of confidence on the part of the expert on the accuracy and validity of the measurement conducted by the item in question. The value of "-1" signifies the specialist's assertion that the item under consideration lacks the ability to effectively assess the desired construct. Ultimately,

the designation of "0" signifies the specialist's lack of certainty about the item's ability to appropriately assess its intended measure.

1 = the expert/specialist is confident that this item measured the attribute

-1 = the expert/specialist is confident that this item does not measure

0 = the expert/specialist is not confident that the item does measure or does not measure the expected attribute

In this study, five experts in the related fields were invited to do the IOC of the items in the instrument. However, the specialists were not informed that individual items were designed to be measured, so they remained independent and non-biased analysts. The formular below illustrates the equation to calculate the point.

$$IOC = \frac{\sum R}{N}$$
 (3-3)

IOC = item-objective congruence index

R = point given by specialists

 ΣR = total points of each specialist

N = numbers of specialists

The content validity was evaluated by five experts. Their findings indicate that both sections - one pertaining to the respondent's demographic information and the other concerning behavioral intention towards participating in Hybrid Education for undergraduate students majoring in English at Chengdu universities - achieved a content validity score of 1. This translates to a high level of congruence between test items and the study's objectives, as evidenced by an overall test item-objective congruence (IOC) score of 1.

3.5.2 Reliability of Quantitative Research

In this study, Cronbach's alpha (CA) and composite reliability coefficient (CR) are applied to assess the study's reliability.

3.5.2.1 Pilot Test

Prior to doing the comprehensive research, a pilot test is a preliminary study of limited scope that is used to assess or investigate the planned quantitative research (Chen, 2018). According to Cooper and Schindler (2011), it is recommended that the appropriate sample size for pilot test falls between the range of 25 to 100. Connelly (2008) suggested that the pilot study's sample size should be 10% of the total research samples. As a result, 30 undergraduate students will participate in the pilot test for the internal consistency reliability analysis in this study. If the internal consistency dependability of the instruments for this study was adequate for a large-scale survey of a huge number of participants, it would be determined by the findings of this pilot test.

3.5.2.2 Cronbach's Alpha

The study calculated the results of the Cronbach's alpha (CA) coefficient of the pilot study in order to guarantee the internal consistency reliability of the questionnaire. A number of questions were assessed using Cronbach's alpha as a consequence of analyzing the covariance matrices (Sijtsma, 2009). Cronbach's alpha was an assessment of the inherent conformity between each question or item and enabled simple regional authentication for each of the scale item's inquiries (Chen, 2018).

Cronbach's Alpha coefficients exhibited a range from -1.00 to +1.00, with higher values indicating greater levels of reliability (Salkind, 2017). When reliability was given a number of 1, it meant that there were no errors in the evaluation process. The instrument has no reliability if the alpha point is 0.00 or less. Taber (2018) asserts that for a construct to be deemed reliable, the Cronbach's Alpha value associated with it should exceed 0.7.

Table 3.5 Cronbach's Alpha Coefficient Size

Cronbach's Alpha Coefficient Range	Strength
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very Good
≥ 0.9	Excellent

Source: Hair, Money, Page, & Samouel, 2007

According to the internal consistency reliability results in the pilot study, the Cronbach's alpha score on Perceived Ease of Use was 0.958, Perceived Usefulness was 0.945, Behavioral Intention was 0.930, and Effort Expectancy was 0.916. All of them had excellent scale reliability. The score on Attitude towards Use was 0.896, and Social Influence was 0.891. Each of them indicated very outstanding scale reliability. Pilot test of the questionnaire with 30 of the non-sample students s as to analyze their reliability by Alpha coefficient of Cronbach was at 0.918. In conclusion, the study's Cronbach's alpha coefficient was more than 0.9, indicating that all of the constructs had a high degree of reliability and were suitable for use as the study's research tool.

3.6 Data Collection

The studies should determine the most appropriate data collection methods according to the research questions, research objectives and research methods (Johnson & Christensen, 2019).

Based on the comprehensive consideration of the situation of target universities, target population, this study adopted the in-person and online data collection approach, in which the faculty and staff of the target universities are entrusted to distribute and collect the questionnaires. The study will explain to the participating staffs the schedule for data collection. After the questionnaires are collected back, they will be organized and coded with the elimination of invalid data

by using Microsoft Excel files for subsequent statistical data analysis by IBM and SPSS.

3.7 Data Analysis

Software Package for Social Sciences (SPSS Version 20.0) will be used to examine descriptive analysis with frequency, percentages, means, standard deviations, skewness, and kurtosis. Analysis Moment of Structures (AMOS Version 20.0) will also be utilized to analyze the data. In order to analyze the data, a two-stage SEM suggested by Anderson and Gerbing (1988) and Hair, Hult, Ringle, and Sarstedt (2013) is used because several scale items were modified to fit the unique setting of the research.

When two-stage SEM is used, the measurement model is validated in the first stage and confirmatory factor analysis (CFA) is used to look for associations between the study's latent and observable variables. The structural model is investigated in the second stage to determine the strength and direction of the relationships between the latent variables.

3.7.1 Confirmatory Factor Analysis (CFA)

In this investigation, CFA is carried out after the data collecting procedure to ascertain if the quantity of structures and loadings for every observed variable are consistent with the expectations in the hypotheses (Malhotra, Hall, Shaw, & Oppenheim, 2004). CFA is a category of specific advanced factor analysis strategies that is normally utilized in social science research which facilitates in discriminating the factor structure which the phenomena follow (Huang & Yuan, 2020).

3.7.1.1 Construct Validity

According to Bolarinwa (2015), construct validity is the degree to which an instrument accurately predicts the construct that will be examined. Construct validity is certified according to determining the internal structure and connecting the

scale with the correlation variables. According to Furr and Heuckeroth (2019), the primary purpose of construct validity is to ensure the reliability of social science study findings. Also, Sjøberg and Bergersen (2021) suggested that construct validity is the prior-condition for generating effective deduction for the connections in the conceptions while the conceptions are evaluated according to indices. Construct validity is equipped with two subcategories of which could be determined as the convergent validity and the discriminant validity (Chen, 2018). According to the research of Ginty (2013), to achieve an ideal construct validity which represented the matrix, it should be equipped with a stable connection with convergent validity and less or no relationship for the discriminant validity.

3.7.1.2 Convergent Validity

One of the sub-components of concept validity is convergent validity (Trochim, 2020). According to Brandt, Beck, Sajin, Anders, and Münchau (2016), convergent validity is the degree to which two evaluations of the same construct are related. Convergent validity is the assessment of how numerous high-degree indices are related to a single construct (Churchill, 1979). Convergent validity is an analysis of an assessment tool's personality in which the tool itself serves as the representative of a number of question declarations (Kock, 2020). Factor loading, average extracted variance (AVE), and composite reliability (CR) are some of the conditions or indicators used to establish convergent validity (Pallant, 2010).

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(1) Factor Loading

According to Hu and Li (2020), factor loading indicates the elementary latent variable's parameter in the question-statements. Factor loading, according to Huang and Yuan (2020), is the results of the factors evaluated that is used to describe or explain the relationships between the observed variables using the factors with a smaller scale. Factor loading tests are very extensively used in social science, particularly in behavioral research. An improved understanding and application of this technology would result from the thorough assessment of the factor loading and the corresponding factor loading matrix (Chen, 2018). The appropriate threshold value for factor loading should be larger than 0.50, according to a number of

studies (Chen & Tsai; 2007; Hulland, 1999; Truong & McColl, 2011). Similar to this, Hair et al. (2020) indicated that the factor loading value should at least be larger or equal to 0.50, and more than 0.70 is more suitable.

(2) Average Variance Extracted (AVE)

The mean variance in the target variables that the construct is meant to describe or explain is known as average variance extracted (Hu & Li, 2020). The total number of squares of completely standardized factor loadings divided by the sum results and the error variances for all the indicators may be used to obtain the average variance extracted for the constructs (Huang & Yuan, 2020). According to several experts, the average variance extracted level should be between 0 and 1.00, and an extent of over 0.50 is necessary for convergent validity (Hair et al., 2013; Bagozzi & Yi, 1988). Furthermore, according to Fornell and Larcker (1981), the acceptable value of average variance extracted is 0.50. It measures the amount of variance obtained from the construct in comparison to the magnitude of evaluation error.

(3) Composite Reliability

By removing this summation from the total variance in the composite, composite reliability—also known as construct reliability—represents the relationship of each true value variance and covariances of the composite for correlated variables for constructs. In certain ways, according to Netemeyer (2003), the composite reliability resembles Cronbach's Alpha in that it estimates the internal consistency of the observed variables or scale items. Additionally, some experts defined composite dependability as the sum of all individual score variances relative to individual value variances for all observed variables (Brunner & Süß, 2005). In addition, according to Fornell and Larcker (1981), the indicators for the mutual variance in the scale items are what are used to identify correlated latent variables. According to Gu et al. (2019), the threshold of composite reliability should be greater than 0.60, reflecting the optimal extent of the inherent consistent reliability of all the observed variables. Additionally, Srinivasan (2002) found that the composite reliability value is greater than or equal to 0.70, indicating that the scale items are at the proper level.

3.7.1.3 Discriminant Validity

The discriminant validity, a verification technique that based on the long-standing and well-established concept, was first developed by Camp and Fiske in 1959. Discriminant validity is the degree at which the absolute threshold of the relationship between the two notions is one, according to Reichardt and Coleman (1995). According to Schwab (2013), discriminant validity is extrapolated when the results of a particular construct's examination yield separate results as opposed to results that are influenced by other constructs. According to Hair, Anderson, Tatham, and Black (2010), discriminant validity ensures that the construct being examined is distinct and exhibits the phenomenon of interest that previous estimates were unable to capture. When the number of trait correlation assessments is higher than or equal to two and the standard errors are less than 1.00, discriminant validity is present (Schmitt & Stults, 1986).

3.7.2 Goodness of Fit

The statistical pattern's degree of "goodness of fit" refers to how well it matches a set of observations. The discrepancy between the anticipated threshold and the actual threshold within the statistical framework is often assessed using measures of goodness of fit. The Goodness of Fit (GOF) estimate is used by both the Structural Equation Model (SEM) and the Confirmatory Factor Analysis (CFA) to assess model fits. To determine whether the data originate from the specified distribution, the goodness of fit tests are used (Kesemen, Tiryaki, Tezel, & Özkul, 2021). The variance between expected values and actual values within the statistical matrix is determined by goodness of fit indices (Maydeu-Olivares & Forero, 2010). Hair et al. (2010) identified a number of goodness of fit estimate categories. The absolute fit indices and incremental fit indices were calculated in this study.

3.7.2.1 Absolute Fit Indices

The degree to which the priori matrix fits the research data could be referred to as an absolute fit index (McDonald & Ho, 2002). As an alternative, according to some scholars (Ainur, Deni, Jannoo, & Yap, 2017), estimates of absolute fit might be

used to determine how well the study model fit the statistical data. According to Ramlall (2017), the population covariance and the hypothesized matrix-implied covariance are about equivalent in terms of absolute fit, suggesting that the explanation of arguments may be valid and credible.

The research used the absolute fit measure, which included of many indicators including the Chi-Square Value to Degree of Freedom (CMIN/DF), Root Mean Square Error of Approximation (RMSEA), the Adjusted Goodness of Fit Index (AGFI), and the Ratio of the Goodness of Fit Index (GFI).

(1) Chi-Square Value to Degree of Freedom (CMIN/DF)

To determine whether there is a significant connection between two categorical nominal variables, the chi-square examination of the independence is used (Chen, 2018). The expected and actual covariance matrices differed, as shown by the chi-squared verification (Gatignon, 2010). The chi-square analysis is merely a statistical check of the various matrix types used in structural equation modeling (Hair et al., 2013). According to Hair et al. (2010), the chi-square index requirement of less than or equal to 3.00 is acceptable.

(2) Goodness of Fit Index (GFI)

According to Baumgartner and Hombur (1996), the Goodness of Fit index (GFI) is a special category that assesses how well the assumed model fits the observed covariance matrix. In the empirical covariance matrix, GFI calculates the scale of variances and covariances evaluated in accordance with the matrix-indicates covariance model (Jöreskog & Sörbom, 1989; Tanaka & Huba, 1985). The most excellent level should be greater than or equal to 0.90, with the value range of the GFI being 0 to 1.00 (Bagozzi & Yi, 1988; Baumgartner & Hombur, 1996). An GFI value larger than 0.9 is seen as "excellent fitness", but over 0.8 can be acceptable and met the requirement suggested by Baumgartner and Homburg (1995), and Doll, Xia, and Torkzadeh (1994). According to Wijanto (2008), the values for GFI do not exceed 0.9, they still met the threshold value if above 0.8. In other words, (goodness-

of-fit) GFI value ≥ 0.9 is a good fit, while $0.8 \leq \text{GFI} \geq 0.9$ is referred to as suitable fit or acceptable model.

(3) Adjust Goodness of Fit Index (AGFI)

On the other hand, GFI will rise as more parameters are included in the model. An adjusted GFI(AGFI) was developed by Joreskog and Sorbom (1984) to address this issue. According to Baumgartner and Hombur (1996), the number of indices for each statistical study construct had an impact on goodness of fit, which was modified by the AGFI. A value of 0.90 or more is regarded as satisfactory for this weighted decision coefficient, which theoretically ranges from 0 (bad fit) to 1 (perfect fit) (Tanaka & Hu Ba, 1985).

(4) Root Mean Square Error of Approximation (RMSEA)

According to Timothy (2015), a specific statistical indicator used to remove sample size problems is the Root Mean Square Error of Approximation (RMSEA), which is based on the diversities between the hypothetical matrix and the best arguments. The range of RMSEA should be between 0 and 1.00 in which the fewer threshold represents better degree of the model fit while the threshold less or equal to 0.06 is demonstrative of the acceptable fit level, and the ideal degree of model fit is indicated by an RMSEA criterion of less than 0.05.

3.7.2.2 Incremental fit indices

According to Byrne (2016), the incremental fit indications show how closely the examined matrix resembles the baseline pattern. Incremental fit indices (IFI) are a common fitting index for modifying sample size and degree of freedom, according to A good match is one that exceeds.9, however the index can go above 1. The following three indexes are covered in this study:

(1) Comparative Fit Index (CFI)

The Comparative Fit Index (CFI) modifies the chi-square test of model fitting (Gatignon, 2014) and the sample size inherent in the normalized fitting index (Bentler, 1990) in order to examine model fitting by comparing the

differences between the data and a hypothetical model. The CFI scale runs from 0 to 1, with higher numbers indicating greater fit. In the past, model fitting was deemed good when the CFI value was 0.90 or higher (Hu & Bentler, 1999).

(2) Normed Fit Index (NFI)

The difference between the chi-square value of the hypothetical model and the chi-square value of the zero model is examined using the normed fitting index (NFI) (Bentley & Bonett, 1980). The cut-off value of 0.95 or greater denotes that the model fits the data well, and the values of these two should be between 0 and 1 (Hu & Bentler, 1999). The recommended degree of fit level for the indices used in the current academic research, such as NFI, as suggested by Hair et al. (2006), should be at or above 0.90.

3.7.3 Structural Equation Model (SEM)

SEM could be defined as the equation which utilizes the latent and measured variables statistical analysis coefficient (Jöreskog & Sörbom, 1993). Fan, Chen, and Shirkey (2016) and Tarka (2018) postulated that the functions of SEM are employed to confirm the causality among the latent and observed variables in a specific research matrix and encompasses evaluation of the imprecise or inaccuracy in the correlating arguments. The SEM is equipped with serval sections which incorporate confirmatory factor analysis, confirmatory composite examination, path analysis, and so on (Kline, 2016).

According to Ramlall (2017), the two fundamental components of structural equation modeling (SEM) are the measurement model and the structural model. The measurement pattern assesses the association between latent variables and observed variables, while the structural model examines the link between endogenous and exogenous variables. Moreover, as stated by Hair et al. (2013), the use of both measurements and structural models is essential in the process of formulating concepts, constructing theories, and assessing hypotheses. The following section presents a concise overview of the statistical analysis used to operationalize the measurement pattern and structure pattern.

3.7.3.1 The Measurement Model

According to Dash and Paul (2021), the SEM measurement model could be defined as the undemonstrative and unambiguous matrixes which connected the latent variables and observed variables. Chen (2018) stated that the connections among both the latent and observed variables are represented in SEM measurement matrix. Arbuckle and Wothke (2008) suggested that this category of approach could evaluate certain series of scale items for each construct, which the items were designed to assess the hypothesis that emphasizes on the degree of measured variables were dependent on latent variables.

3.7.3.2 The Structural Model

Khosrowpour (2008) suggested that the structure model of SEM, also named theoretical matrix or casual model demonstrates the causality connection in the latent variables of the research framework. Similarly, Huang and Yuan (2020) stated that the structure model of SEM is essentially defining which variables are connected according to theoretical hypotheses. Alternatively, Chen (2018) suggested that merely the connections between the latent variables are illustrated in the structural model for the SEM. Hence, the path analysis determining the direct relationship via the standardized regression weights according to the p-value confirming the causal correlations is different from CFA in the evaluation model as the CFA demonstrates the correlated connection (Siriphat, 2016).

3.8 The Second Phase – Qualitative Research

In accordance with the research methodology, the first step included the collecting and analysis of quantitative data, which was then followed by the collection and analysis of qualitative data. In other words, the purpose is to provide a qualitative explanation, enhance, and validate the results obtained during the quantitative part of the study (Busetto, Wick, & Gumbinger, 2020; Creswell & Hirose, 2019; Dawadi, 2021). This research included semi-structured interviews, which were then analyzed using thematic analysis.

This study will apply focus group interviews to the qualitative research phase with participants providing a more holistic picture of how they perceive and confirm the relationship of factors influencing Behavioral Intention to participate in hybrid education of undergraduates majoring in English at universities in Chengdu. The number of focus groups should be large enough to produce consistent themes. In one study, it is found that about 80 to 90% of the themes will be identified in one to three focus groups (Fugard & Potts, 2015; Galvin, 2015; Guest, Namey, & McKenna, 2017). Focus groups that utilize semi-structured interviews are used to confirm the relationship of factors influencing Behavioral Intention to participate in hybrid education of undergraduates majoring in English in Chengdu. The qualitative phase of this study sought to answer the following research question: What are the perceptions and attitudes of undergraduate student majoring in English through the interview in a focus group in order to confirm the model of the relationship of factors influencing Behavioral Intention of undergraduate students majoring in English to participate in hybrid education in universities in Chengdu?

3.8.1 Interview Participants

Qualitative research is guided by the principle of saturation, a state where additional data does not yield new thematic insights (Creswell & Hirose, 2019). Saturation dictates the adequate sample size, as it marks the threshold beyond which no significant new information is expected to emerge, thereby signaling the appropriate conclusion of data collection. Regarding focus groups, optimal sizes range from 4 to 10 participants (Chen, 2007; Hennink, Kaiser, & Weber, 2019; Moser & Korstjens, 2018). Smaller groups foster more in-depth discussions and greater participant interaction, whereas larger groups may dilute the conversation and become challenging to manage. In this study, the semi-structured interviews involved nine participants from three universities. This number proved to be effective in reaching saturation, ensuring that a diverse range of insights was captured without overwhelming the data collection process."

The major method used for data gathering in this study was focus group interviews. Hence, qualitative research often adopts non-random sampling methods (Plummer, 2017). In this study, the researchers used a purposive sample method to carefully pick informants who had a sufficient understanding of the phenomena being investigated. This approach aligns with the recommendations put out by qualitative academics Creswell and Hirose (2019). It is found that about 80 to 90% of the themes will be identified in one to three focus groups (Guest et al., 2017). Nine students from the three universities will be invited to the semi-structured interview subsequent to a preliminary list of questions. This study encouraged participants to confirm the model of relationship of factors influencing Behavioral Intention to participate in hybrid education of undergraduates majoring in English at universities in Chengdu. Interviews will be conducted in Chinese. The interviews will be recorded, transcribed, and translated into English.

Through the interview invitations, contact information was confirmed for a total of nine interviewees, including their email addresses or telephone numbers. These interviewees exhibited varying degrees of diversity in aspects such as age, gender, and year of study at the university. The specific sampling and interviewing process comprised two stages. Initially, a focus group interview was conducted with six students in mid-March 2023. Building upon this, three additional students were included in the interview survey in early May 2023 as part of the second stage.

In determining the number of interviewees, the study adhered to the principle of saturation, which entails continuously exploring new interviewees until it was ascertained that 'no new surprises or insights would emerge' (Morse, Barrett, Mayan, Olson, & Spiers, 2002). The addition of new interviewees in the latter phase aimed to select individuals for interviews that would contribute to the further refinement of the research (Saunders et al., 2018), thereby enhancing the in-depth understanding of various participant types (Onwuegbuzie & Leech, 2007).

3.8.1.1 Interview Participant Demographics

Since qualitative research part examines the factors influencing Behavioral Intention of undergraduate students majoring in English to participate in hybrid education, the following conditions have to be concerned about the selected interviewees:

- (1) Interviewees must be undergraduate students majoring in English starting from sophomore year or above (including sophomore year) who have a deep understanding and knowledge of hybrid education.
- (2) The distribution of interviewees in terms of gender, education and geography is randomized to minimize the biased heterogeneity of the interviewees.

Selecting undergraduate students majoring in English starting from their sophomore year or above as interviewees in this qualitative research study is to ensure that the participants possessed a level of experience and maturity that was conducive to exploring the factors influencing their Behavioral Intention with regard to hybrid education. By focusing on students at this stage of their academic journey, the research aimed to tap into their deeper understanding of different educational modes, their informed perspectives, and their ability to provide insightful responses. This approach also minimized potential confounding variables related to freshman adjustment issues and allowed for a more comprehensive examination of their decision-making processes.

There were four male and five female students who were interviewed. Table 4.14 displays the information background of the students who participated in the interview. The interviewees listed are pseudonyms to protect the identities of the participants.

Table 3.6 Demographic profile of interviewees

				Time of Hybrid	
Interviewee	Gender	Age	Year of Study	Education	University
				Experience	
S1	Male	21	Junior	12 months	CDU
S2	Female	22	Senior	12 months	CDU
S3	Female	22	Senior	12 months	SCU
S4	Male	20	Sophomore	6 months	SNU
S5	Female	21	Junior	12 months	SNU
S 6	Male	22	Senior	12 months	SCU
S 7	Female	21	Junior	6 months	SCU
S 8	Female	22	Senior	12 months	CDU
S9	Male	20	Sophomore	6 months	CDU

3.8.2 Interview Data Collection

In a focus group, an investigator speaks with a group of three to twelve participants on subjects relating to the study question (Rabiee, 2004). These meetings allow for the collecting of several points of view within a single temporal and geographical environment, making them an important tool for qualitative research. As a result, the moderator can frequently adopt an unbiased observational posture as the group engages in an unstructured dialogical exchange (Ryan, Gandha, Culbertson, & Carlson, 2014; Stewart & Shamdasani, 2014). Additionally, the concurrent discussion of similar topics by numerous people has the potential to intensify the level of disagreement. As a consequence, there is a possibility to get thorough information about an essential issue from a specific demographic.

From the standpoint of the participant, focus groups are typically found to be arguably more comfortable for participants than individual interviews in the context of qualitative research. This is supposedly due to the fact that people are not required to participate in every aspect of the discussion and may find it easier to express their opinions when they are supported by other group members (Alsaawi, 2014; Hennink, 2014; Stewart & Shamdasani, 2017). Additionally, focus groups provide a forum for participants to exchange reflections and ideas, sometimes fostering the emergence of fresh viewpoints. However, it should be noted that using focus groups has its own peculiar complexities and difficulties. Focus groups, like interviews, provide a rich source of information that may be painstakingly recorded and then evaluated, with sessions often lasting between one and two hours (Guest et al., 2017). Additionally, professional moderators are required to keep the conversation focused and moving forward while promoting participation from all participants (Liamputtong, 2011).

After confirming the interviewees' acceptance of the invitation to the focus group interview, arrangements were made for the specific time and place of the interview with each interviewee via text message or email, with priority given to their convenience. The interviews for the study were all done remotely in conformity with all applicable approved research norms and procedures. All qualitative research interviews are conducted in confidence utilizing university-provided video conferencing software. The entire interview was recorded with the interviewees' permission, and key points of the interview were noted throughout the interview. The interview was conducted in a video-audio format. The recordings of the interviews were first pre-rescripted using the online speech-to-text translation platform "Xunfei Hearing" (http://www.iflyrec.com/). "Xunfei Hearing" is an authoring service platform based on advanced intelligent speech and language technologies, with voice authoring as its core function (Hua & Zhao, 2021). The paid machine transcription function provided by the platform was used to directly transcribe most of the speech materials into the first draft of this paper. However, owing to the limitations of machine transcription in handling variations in interviewees' speech rhythms, tones, pronunciations, and punctuation, a second proofreading and revision of the initial draft was undertaken. This involved a meticulous word-by-word review of the transcription by listening to the audio, resulting in a detailed transcript that captured participants' words, phrases, and expressions. Additionally, all identifying information related to the interviewees was removed to ensure their anonymity and privacy.

3.8.3 Qualitative research instrument

This study will apply focus group interviews to the qualitative research phase with participants providing a more holistic picture of how they perceive and confirm the relationship of factors influencing Behavioral Intention to participate in hybrid education of undergraduates majoring in English at universities in Chengdu. Focus group interviews that utilize semi-structured interviews are used to confirm the relationship of factors influencing Behavioral Intention to participate in hybrid education of undergraduates majoring in English at universities in Chengdu.

According to Adams (2015), one of the most important methods for doing qualitative research in the social sciences is the in-depth interview, also known as the semi-structured interview. It is used to understand the experiences of a certain social group, investigate the causes of a particular social phenomenon, and provide solutions to social problems via in-depth conversations with the respondents (Alsaawi, 2014). The creation of the interview outline, building rapport with the interviewee, asking insightful questions, and inspiring the interviewee to share their narrative are its main foci (Galvin, 2015). This section focuses on the three aspects: interview outline design, interview data analysis and ethics of the interview to briefly explain the application of in-depth interviews in this study.

3.8.3.1 Design of Interview Outline

An interview protocol was developed to align with the study goals. According to Wiserma and Jurs (2008), the interview protocol is a list of questions used by the interviewer to remind him/her of the interview. Although the interview protocol is different from a questionnaire, it is still more or less structured according to the type of research questions, research objectives, and the field research approach adopted (Burriss, 2006; Bryman, 2001). The interview outline for this study consisted

of the following sections:

(1) Opening questions

This is an introductory section to remind the interviewer of what to inform the participants at the beginning of the interview, including the interviewer's self-introduction, an explanation of the research objectives, and a brief description of the expected outcomes of the study. Afterwards, simple questions follow, which are designed to continue to promote rapport between the interviewer and the respondent and to guide the respondent into the core issues of the interview in a relatively smooth and natural way (Maguire & Delahunt, 2017). This stage of the study began with a brief sharing of the overall feedback results from the previous stage of the questionnaire survey with the interviewees and sharing with them some of the problems and phenomena identified therein

(2) Key questions

This part contained the necessary questions for the research topic, which aims to collect key information so as to answer the research questions. At this stage, the questions primarily center on two sections, which encompass perceptions of influencing factors on Behavioral Intention to participate in hybrid education and attitudes and satisfaction toward hybrid education in the future. This part tries to understand the details of the interviewees' narratives through frequent probing to get more detailed information and examples (Busetto et al., 2020) of understanding the reasons for their participation or non-participation in hybrid education.

(3) Concluding questions

It provided closing instructions to finish the interview and thank the informants as the last component of terminating an interview. The interviewer was able to slowly withdraw from the deep narrative and "fade out" of the interview by asking more understandable questions (Adams, 2015) such as "what specific suggestions do you think the school could improve the hybrid education?

The primary objective of the interview was to provide more elucidation and enhance the precision of the statistical findings (Schumacher et al., 2021; Creswell & Clark, 2018). After collecting and analyzing students' responses to the online survey, individuals were deliberately selected from the pool of interested respondents. Subsequently, semi-structured interviews were performed in the format of a focus group. Each participant in the interview process conveyed their perspectives using their native language and provided truthful responses to the inquiries.

As previously noted, the interview process was divided into three major phases, which are detailed in Appendix I. The first phase was an introduction, in which the interviewer identified himself or herself and the aim of the interview, pledged confidentiality, requested permission to record the conversation, and asked for warm-up questions. The second segment included the major questions about the interview's objective. This section was created in a logical sequence based on the research questions and a review of the existing literature. To acquire more precise and in-depth information during the major questions, a series of probing questions was devised. The last segment offered directions for terminating the session and thanking the informants.

Interview Protocol Questions

Please note that the primary inquiries are enumerated as follows. Nevertheless, it should be noted that the interview format being used is a semi-structured interview, which implies that more probing questions may be posed to the interviewee in response to their answers.

Opening questions

(After interviewer finish the self-introduction and an explanation of the research objectives):

- (1) Please tell me about the hybrid education in your university.
 - (2) What do you know about the hybrid education?

Key questions

According to your learning experience:

- (1) How would you describe the acceptance and adoption level hybrid education in your university?
- (2) How would you describe the challenges facing students to participate in the hybrid education?
- (3) what are the advantages or drawbacks of hybrid education you have found while participate in hybrid education?
- (4) Do you think the model of hybrid education is in line with the characteristics of your major as well as the direction of development? Or is hybrid education suitable for undergraduate students majoring in English?

Concluding questions

What do you think your university needs to improve to increase students' participation in the hybrid education? Would you like to continue to study your courses through hybrid education in the future? Would you recommend it to others and why?

As it is often challenging to predict how interviewees will interpret questions in the interview outline before conducting formal interviews, it becomes essential to test the questions in advance through pilot interviews (Napier, Goswell, & McKee, 2010; Palak & Walls, 2009; Tang, 2020). During this phase, three undergraduate students majoring in English from Chengdu University were invited to participate in model interviews, simulating the format and duration of formal interviews, including audio recording and note-taking. A gap of three to five days was allowed between interviews to enable refinements to the interview outline based on feedback from the pilot interviews. The revision of the interview outline, following the guidance of Creswell and Hirose (2019) and Beokweg (2021), focused on several key aspects. These included assessing whether interview topics were readily comprehensible to respondents, adjusting wording according to the interviewees' feedback, ensuring the order of questioning aligned with the logical thinking patterns of respondents, confirming that the information collected addressed the research

questions, and assessing the appropriateness of the interview duration. It's important to emphasize that designing an interview outline is an iterative process that remains open and adaptable (Blatter & Haverland, 2012; Constantinou, Whittaker, Kalpakidis, Fenz, & Warn, 2007; Creswell et al., 2019). While the interview outline incorporates these considerations, it undergoes ongoing revision during the actual interview process, with results from previous interviews informing the design of subsequent interviews (or the next set of respondents) to varying degrees (Huang, Teo, & Zhou, 2020).

3.8.3.2 Assessment of Interview Quality

Assessing the quality of a qualitative interview study is relatively difficult, partly because such surveys are often conducted in natural settings that are difficult to recreate and replicate. The quality of an interview study can be judged primarily by the criteria of interpretativeness, adaptability, coherence, and saturation (Hennink et al., 2019; O'Reilly & Parker, 2013; Saunders et al., 2018). Wiersma et al. (2008) point out that qualitative research also involves issues of reliability and validity. Yin summarized four tests applicable to case studies, including structural, intrinsic and extrinsic validity, and reliability.

This study combines multiple perspectives and focuses on assessing the quality of in-depth interviews in terms of structural validity, external validity, and internal reliability.

(1) Structural validity, also known as "construct validity," refers to the extent to which a measure applied to a case study can accurately operationalize the concepts of the subjects (Guetterman, Fetters, & Creswell, 2015). In this study, the main conceptualization of the subjects in the interview survey section was the relationship of factors influencing Behavioral Intention of undergraduate students majoring in English to participate in the hybrid education. To enhance the construct validity of the study, this study tested the rationality of the selected research perspective and theoretical foundation several times, and also inquired about and compared the analysis methods used in other related studies as well as the research conclusions obtained (Diefenbach, 2009).

(2) External validity is the extent to which research findings can be generalized to a broader population, event, or situation (Burriss, 2007). It has also been argued by some studies that the goal of a study with qualitative characteristics is not to generalize its findings, but rather to extend the understanding of the study by providing detailed descriptions that will help others understand similar situations (Slack & Draugalis, 2001). In order to enhance the external validity, this study recorded the details of the interview process and the individual characteristics of the participants in a timely and exhaustive manner as much as possible and presented the common and contrasting dimensions of the phenomenon under study with the similar general phenomena in a subtle way during the study.

(3) Internal reliability, which is the consistency of the research process and the extent to which the study can be replicated (Bryman, 2001). Its purpose is to ensure that the same study presents the same results when it is re-run through the original steps; its goal is to reduce and minimize errors and biases in the study (Roberts & Priest, 2006). In this study, during the conduct of in-depth interviews, a detailed record of each step, procedure, and all relevant data obtained from the interviews will be maintained to ensure traceability and proper documentation of all records.

3.8.4 Qualitative Data Analysis

Qualitatively, a thematic analysis approach was to analyze the interview. The Nvivo12 was applied to coding in the qualitative analysis of this study (Guetterman et al., 2018; Xu & Zammit, 2020). Thematic analysis is a widely used method for systematically identifying and examining recurring themes or patterns within qualitative data (Bergin, 2018; Bogdan, 2007; Creswell, 2018).

The semi-structured focus groups interview that was performed remotely using video conferencing software will provide the study's qualitative data. For a subsequent qualitative data analysis, the participant replies will be captured, written down, and coded. The interview transcriptions will be coded, collated into a qualitative interview codebook, and anonymized in accordance with evolving best

practices for qualitative data analyses (Bergin, 2018; Bogdan, 2007; Creswell, 2018). The codebook will then be evaluated for coding frequency. To address the research question, the data was uploaded from the interviews to Nvivo12 and transcribed before the coding process. As "coding is a cyclical act" (Saldaña, 2015), interviews were analyzed through multiple steps.

The analysis of interview data is essentially a process in which the researcher is immersed in the data and through which he or she understands and interprets the experiences of the research participants (Kumar et al., 2019). The researcher follows established procedures and employs approved methods and techniques to analyze textual data, while at the same time understanding, interpreting, and explaining the experiences of the interviewees to reveal the individual, social, and cultural meanings hidden behind their behaviors (Gläser-Zikuda, Hagenauer, & Stephan, 2020). The analysis of qualitative data often both overlaps with and has its own separate aspects from the organization of the data (Mayring, 2014). Chen (2016) divides the analysis of qualitative data into four steps: Organization and preliminary analysis of the data, categorization and in-depth analysis, and reporting the insights from the previous analysis. Hutter and Hennink (2020), on the other hand, regarded data preparation and identifying codes, data description and comparison, data classification and conceptualization, and constructing theories as key links in the cycle of qualitative data analysis. Baraun and Clarke (2006) define thematic analysis as a method for identifying, analyzing and reporting patterns and themes within data.

Coding is a key link between the collection of qualitative data and the formation of generative theories to explain these data (Charmaz, 2006), and its purpose is to find a code that is meaningful to the research question. "Code numbers" or "codes", i.e., issues, themes, ideas, opinions, etc. that are evident in the data, are the most basic units of meaning in data analysis. A researcher can look for code by determining the frequency of occurrence of related words or content. If certain phenomena appear repeatedly in the data, forming a certain pattern, it means that these phenomena are the most important parts of the data, and need special attention and focus on registration (Bazeley, 2009). The stage of code search is usually open-ended,

so this open coding process is also known as "first level coding" (Bryman, 2006). In this stage of the study, the main purpose is to discover words or phrases in the original data that express independent meanings related to the research question by reading the data carefully several times (Caracelli & Greene, 1997). Based on this, the code numbers that fit the data were identified through constant revision and represented by corresponding numbers. This phase of the work was practiced with constant revision until the researcher realized that it was no longer possible to identify new themes from the data (Collins, Onwuegbuzie, & Jiao, 2007).

This study combines multiple perspectives and focuses on analyzing the interview data through the following steps.

Phase 1: Initial code Generation

Phase 2: Theme Identification

Phase 3: Theme Definition and naming.

The first stage is the subsequent transcription procedure. Once the audio data has been translated into textual format, the next step entails generating initial codes based on the data. The codes underwent a thorough examination, comparison, and review in order to minimize any instances of duplication and redundancy. In the subsequent step, the various codes were organized into probable thematic categories, and all pertinent data extracts that had been coded were consolidated inside the selected themes. Additionally, the process included the evaluation and adjustment of the themes. Consequently, all the data that was recovered underwent a thorough reevaluation in order to identify any discernible patterns. During this phase of the research process, efforts were made to further refine the data by coding any extra information that had been overlooked. This included both the inclusion of missing data within existing themes and the process of recoding. The third step included the process of delineating and assigning labels to various subjects. During this phase, each topic was chosen in order to encapsulate a brief narrative that contributed to the completion of the overall tale of the research. To ensure clarity, any overlapping concepts were deleted in order to create a coherent and concise map. The last stage was documentation of a thematic analysis, offering a full portrayal of the facts contained within the identified themes.

To prevent social bias in responses and maintain research integrity, we refrain from directly soliciting stakeholders' opinions during interviews. Instead, we rely on informed consent procedures, participant sensitivity, and confidential data collection to mitigate response bias and undue influence (Robinson & Leonard, 2019).



CHAPTER 4

RESULTS OF DATA ANALYSIS

Chapter 4 meticulously presents the results derived from the conducted data analysis. To maintain a rigorous presentation, the subsequent section elucidates the abbreviations, symbols and their corresponding full terms employed throughout this chapter.

Symbols and Abbreviation of Statistics in Data Analysis

Abbreviation and Symbols	Full Term
$\bar{\mathbf{x}}$	Mean
SD	Standard Deviation
SK	Skewness
KU	Kurtosis
χ^2	Chi-Square Test
χ^2/df	Chi-Square to Degrees of Freedom Ratio
RMSEA 7798	Root Mean Square Error of Approximation
CFI	Comparative Fit Index
TLI	Tucker-Lewis Index (or Non-Normed Fit Index -
	NNFI)
SRMR	Standardized Root Mean Square Residual
GFI	Goodness-of-Fit Index
AGFI	Adjusted Goodness-of-Fit Index
PNFI	Parsimonious Normed Fit Index
IFI	Incremental Fit Index
CR	Composite Reliability

Direct Effect

DE

AVE	Average Variance Extracted
CA	Cronbach's Alpha Reliability
IE	Indirect Effect
IOC	Item Objective Congruence
NFI	Normed Fit Index
SE	Standard Error
TLI	Tucker-Lewis Index
χ2	Chi-Square
R ₂	Coefficient of Determination
S	Summation
T	t-statistic
F	F-statistic
P	p-value
R	Pearson's correlation coefficient
A	Cronbach's α (internal consistency)
β	Beta coefficient (slope in regression)
	Latent Variable
4	Observed Variable
	Directional Relationships
THE THE S	Correlations.

4.1 Descriptive Analysis

4.1.1 Descriptive Analysis for the Demographic Characteristics

For this section, personal information from the 450 respondents of undergraduate students majoring in English such as the gender, university information and year of study, are represented in the descriptive analysis for the demographic characteristics.

Table 4.1 The demographic information by percentage and frequency

(N=450)

		All Res	pondents	
Characteristics	Frequency	Percentage	Valid	Cumulative
			Percentage	Percentage
Gender				
Male	58	12.9	12.9	87.1
Female	317	87.1	87.1	100
University			-	
Chengdu University	175	38.9	38.9	38.9
Sichuan University	158	35.1	35.1	74
Sichuan Normal University	117	26	26	100
Academic Year				
Freshman	120	26.7	26.7	26.7
Sophomore	151	33.5	33.5	60.2
Junior	76	16.9	16.9	77.1
Senior	103	22.9	22.9	100
Age	Mala		J. J.	
18-19	184	40.9	40.9	40.9
20-21	195	43.3	43.3	84.2
22-23	65	14.4	14.4	98.7
24-25	U3164 10	Ra1.3	1.3	100
Total	450	100	100	

The demographic characteristics of respondents are summarized in terms of frequency and percentage. Majority of the respondents were females, accounting for 87.1% of the total sample, while male respondents composed 12.9%. In terms of the university the respondents belong to 38.9% of the respondents are from Chengdu University, 35.1% are from Sichuan University, and 26% are from Sichuan Normal University. In terms of the academic year, freshman respondents accounted for 26.7%, sophomore accounted for 33.5%, junior accounted for 16.9%, and senior accounted for 22.9%. Finally, for age, respondents who are aged 18-19 years old represented 40.9%,

20-21 years old represented 43.3%, 22-23 years old represented 14.4%, 24-25 represented 1.3%.

4.1.2 Descriptive Analysis

The results for the descriptive analysis indicated the mean and standard deviation for each of the observed variable. The most effective method for calculating the average of a given dataset is to use the mean, which is the sum of the ratings divided by the total number of measurements. The standard deviation determines how much each result in a data collection deviates from its mean (Underhill & Bradfield, 1998). According to Chen (2013) evaluating the mean and standard deviation for each of the construct is the fundamental data filtering procedure for the sub sequential research.

This study utilized the 5-point Likert Scales to measure the latent variables: PEOU, PU, PC, EE, SI, ATU and BI. The scope of the mean value for all the observed variables is from 3.231 to 4.020, and the range of standard deviation is from 0.873 to 1.292. The means and standard deviations are illustrated in Table 4.2.

Table 4.2 Descriptive Analysis of Each Construct

Construct	Items	Pangsit	S.D.	
	PEOUI	3.536	1.198	
	PEOU2	3.482	1.129	
	PEOU3	3.571	1.261	
PEOU	PEOU4	3.487	1.189	
	PEOU5	3.658	1.178	
	PEOU6	3.740	1.099	
_	PEOU7	3.602	1.270	

Table 4.2 Descriptive Analysis of Each Construct (Cont.)

Construct	Items	X	S.D.	
	PU1	3.773	1.046	
	PU2	3.807	1.001	
PU	PU3	3.684	1.002	
ro	PU4	3.809	0.987	
	PU5	3.789	1.132	
	PU6	4.020	0.899	
	ATU1	3.273	0.917	
	ATU2	3.293	0.890	
	ATU3	3.480	0.876	
ATU	ATU4	3.418	0.892	
	ATU5	3.302	0.887	
	ATU6	3.296	0.841	
	ATU7	3.320	0.873	
20	BII	3.513	0.911	
BI	BI2	3.373	0.929	
PE	BI3	3.344	0.932	
BI	BI4	3.231	0.965	
	BI5	3.400	0.925	
	BI6	3.409	0.904	
	BI7	3.400	0.951	
	PC1	3.702	1.203	
	PC2	3.718	1.090	
PC	PC3	3.673	1.081	
	PC4	3.671	1.090	
	PC5	3.473	1.170	

Table 4.2 Descriptive Analysis of Each Construct (Cont.)

Construct	Items	X	S.D.
	PC6	3.571	1.109
	PC7	3.684	1.210
	SI1	3.504	1.256
	SI2	3.469	1.292
	SI3	3.656	1.268
SI	SI4	3.567	1.202
	SI5	3.464	1.257
	SI6	3.480	1.293
	SI7	3.402	1.247
	EE1	3.560	1.197
	EE2	3.560	1.248
	EE3	3.442	1.170
EE	EE4	3.602	1.140
	EE5	3.553	1.114
	EE6	3.560	1.248
	EE7	3.462	1.199

4.2 Tests for Multivariate Assumptions

4.2.1 Normality

In statistics or quantitative research, normality tests are utilized to confirm whether a set of information is matrixed for normal distribution. Multiple statistical calculations require which of the distribution of the data should be normal or at least virtually normal. In assessment and limited-sample deduction, normality is commonly maintained as a hypothesis (Mishra et al., 2019). Lomnicki (1961) indicated that examining for normality is a linear stochastic strategy for the analysis of skewness and kurtosis coefficients.

Green and Salkind (2016) suggested that the skewness coefficient represents the extent to which an observed variable's scores fall at one or the other end for the variable'8 distribution. If the multitude of the scores distribute at the high-end section, equipped with comparatively minor scores at the low-end, this distribution is typically negative skewed. Based on Dugar (2018), the threshold of skewness value between - 0.500 to 0.500 demonstrates the comparatively symmetrical skewness, while -1.000 to - 0.500, or from 0.500 to 1.000 illustrates the temperately skewness degree. Nevertheless, values lower than -1.000 or above 1.000 means the set of data are extremely skewed.

The kurtosis degree for the observed variable that demonstrates the concentration of the tail scopes of a distribution relative to the periodicity of scores at both extremes (Green & Salkind, 2016). The best value range for the kurtosis, according to Cain, Zhang, and Yuan (2017), is in the range from -2.000 to +2.000. Below is a summary of the statistical findings for skewness and kurtosis.

Table 4.3 Normality Evaluation

V = 1: 1: 1: 1: 1:	Time	Sk		KU	
Variables	Items	Statistic	Std. Error	Statistic	Std. Error
	PEOU1	-0.334	0.115	-0.863	0.230
	PEOU2	-0.207	0.115	-0.865	0.230
	PEOU3/	-0.496	0.115	-0.805	0.230
PEOU	PEOU4	-0.268	Rd 0.11	-0.875	0.230
	PEOU5	-0.525	0.115	-0.694	0.230
	PEOU6	-0.431	0.115	-0.793	0.230
	PEOU7	-0.467	0.115	-0.941	0.230
	PU1	-0.898	0.115	0.548	0.230
PU	PU2	-0.795	0.115	0.387	0.230
	PU3	-0.708	0.115	0.412	0.230
	PU4	-0.753	0.115	0.435	0.230
	PU5	-0.847	0.115	0.202	0.230
	PU6	-0.908	0.115	0.926	0.230

Table 4.3 Normality Evaluation (Cont.)

Variables	Itams	SF	ζ	ŀ	ζU
v arrables	Items	Statistic	Std. Error	Statistic	Std. Error
	PC1	-0.521	0.115	-0.770	0.230
	PC2	-0.500	0.115	-0.432	0.230
	PC3	-0.362	0.115	-0.781	0.230
PC	PC4	-0.584	0.115	-0.214	0.230
	PC5	-0.133	0.115	-1.024	0.230
	PC6	-0.333	0.115	-0.767	0.230
	PC7	-0.967	0.115	0.152	0.230
	EE1	-0.591	0.115	-0.499	0.230
	EE2	-0.525	0.115	-0.646	0.230
	EE3	-0.297	0.115	-0.767	0.230
EE	EE4	-0.620	0.115	-0.352	0.230
	EE5	-0.149	0.115	-1.043	0.230
	EE6	-0.471	0.115	-0.818	0.230
	EE7	-0.252	0.115	-0.881	0.230
	SI1	-0.511	0.115	-0.766	0.230
	SI2	-0.456	0.115	-0.901	0.230
	SI3	-0.557	0.115	-0.786	0.230
SI	SI4 4/7	-0.556	0.115	-0.650	0.230
	SI5	-0.314	0.115	-1.036	0.230
	SI6	-0.456	0.115	-0.923	0.230
	SI7	-0.312	0.115	-0.902	0.230
	ATU1	0.007	0.115	-0.385	0.230
ATU	ATU2	-0.057	0.115	0.009	0.230
AIU	ATU3	-0.438	0.115	0.284	0.230
	ATU4	-0.431	0.115	0.016	0.230
	ATU5	-0.264	0.115	-0.139	0.230
	ATU6	-0.061	0.115	-0.034	0.230
	ATU7	-0.125	0.115	-0.247	0.230

Table 4.3 Normality Evaluation (Cont.)

Variables	Itama	Sk	<u> </u>	KU	
variables	Items	Statistic	Std. Error	Statistic	Std. Error
	BI1	-0.502	0.115	0.335	0.230
	BI2	-0.338	0.115	0.142	0.230
	BI3	-0.387	0.115	0.158	0.230
BI	BI4	-0.178	0.115	-0.111	0.230
	BI5	-0.350	0.115	0.083	0.230
	BI6	-0.335	0.115	0.114	0.230
	BI7	-0.359	0.115	0.021	0.230

Table 4.3 demonstrates the calculated results of the skewness and kurtosis for each of the latent variable. Perceived Ease of Use (PEOU) had skewness value between -0.207 and -0.525, kurtosis between -0.694 and -0.941. For Perceived Usefulness (PU), the range of the skewness was from -0.753 to -0.908, while the kurtosis was from 0.202 to 0.926. For Perceived Convenience (PC), the skewness was between -0.967 to -0.133, while the kurtosis was between -1.024 to 0.152. In terms of effort-expectancy (EE), the range of skewness was between -0.149 and -0.620, while kurtosis was between -1.043 to --0.352. For Social Influence (SI), the skewness was from -0.557 to -0.312, and kurtosis was from -1.036 to -0.650. For Attitude towards Use (ATU), the range of skewness was between 0.438 and 0.007, and the kurtosis was between -0.385 to 0.284. Finally in terms of Behavioral Intention (BI), the range of skewness was from -0.502 to -0.178, and the kurtosis was from 0.335 to -0111. The values for the skewness and kurtosis were acceptable.

4.2.2 Multicollinearity

In quantitative research, the multicollinearity or collinearity is an event which a latent variable in the multiple regression matrix would be linearizing forecasted from the others according to a substantial extent of precision. Multicollinearity is the conception of essential inter-correlations of the factors for the multiple regression

matrix (Shrestha, 2020). In addition, multicollinearity could facilitate more massive confidence interval and minor solid possibility esteems to the indicator (Frank, 2001; Hosmer, Lemeshow, & Sturdivant, 2013).

For this study, the correlation matrix is the instrument for determining the multicollinearity. Shrestha (2020) postulated that if the threshold for Pearson correlation coefficient is approximating to 0.800, collinearity probably exists. Franke (2010) assumes that the critical value of correlations at 0.800 entre observed variables are the authentication of multicollinearity. Correlation coefficient values ranged from 0.312 to 0.739. There was no violation of multicollinearity, as shown by the multicollinearity results for each pair of the latent variables being less than 0.800.

Table 4.4 The Correlation Coefficient for Multicollinearity

The Pair of the Latent Variables			Correlation Coefficient
Perceived Ease of Use	< <u></u>	Perceived Usefulness	.482
Perceived Ease of Use	<>	Perceived Convenience	.552
Perceived Ease of Use	<>	Effort Expectancy	.506
Perceived Ease of Use	<>	Social Influence	.587
Perceived Ease of Use	5-2	Attitude Toward Use	.512
Perceived Ease of Use	(Behavioral Intention	.393
Perceived Usefulness	<>	Perceived Convenience	.457
Perceived Usefulness	<>	Effort Expectancy	.510
Perceived Usefulness	<>	Social Influence	.643
Perceived Usefulness	<>	Attitude Toward Use	.580
Perceived Usefulness	<>	Behavioral Intention	.448
Perceived Convenience	<>	Effort Expectancy	.464

Table 4.4 The Correlation Coefficient for Multicollinearity (Cont.)

The Pair of the Late	Correlation Coefficient	
Perceived Convenience <>	Social Influence	.600
Perceived Convenience <>	Attitude Toward Use	.526
Perceived Convenience <>	Behavioral Intention	.405
Effort Expectancy <>	Social Influence	.652
Effort Expectancy <>	Attitude Toward Use	.312
Effort Expectancy <>	Behavioral Intention	.393
Social Influence <>	Attitude Toward Use	.435
Social Influence	Behavioral Intention	.480
Attitude Toward Use <>	Behavioral Intention	.739

4.2.3 Internal Consistency Reliability

In the pilot test section of Chapter 3, the internal consistency reliability was assessed with a sample of 30 respondents, representing the final sample. Internal consistency reliability testing was done among the 450 respondents for all latent variables in this section. The detailed information for internal consistency reliability and Cronbach's alpha was demonstrated in Chapter IV. Results of the reliability test for all the latent variables are summarized in Table 4.5.

Table 4.5 Value of Internal Consistency Reliability of all Respondents

Variable	Item	Taken and adapted from	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
	PEOU1		0.717	0.895	0.908
	PEOU2	(17-1-11-1	0.689	0.898	
	PEOU3		0.775	0.889	
PEOU	PEOU4	(Vululleh,	0.758	0.891	
	PEOU5	2018)	0.718	0.895	
	PEOU6	1///	0.74	0.893	
	PEOU7		0.681	0.9	
	PU1		0.8	0.841	0.881
	PU2		0.713	0.856	
PU	PU3	(Sangjo et al., 2010)	0.613	0.872	
PU	PU4		0.623	0.871	
	PU5		0.729	0.854	
	PU6		0.666	0.864	
	PC1	(Chang et	0.738	0.906	0.917
	PC2		0.704	0.909	
	PC3		0.748	0.904	
PC	PC4		0.704	0.909	
	PC5	al., 2012)	0.741	0.905	
	PC6		0.759	0.903	
	PC7		0.821	0.896	
	EE1		0.81	0.92	0.933
	EE2	(Mtebe & Raisamo,	0.779	0.923	
PP	EE3		0.759	0.925	
EE	EE4		0.767	0.924	
	EE5	2014)	0.779	0.923	
	EE6		0.807	0.92	

Table 4.5 Value of Internal Consistency Reliability of all Respondents (Cont.)

Variable	Item	Taken and adapted from	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
	EE7		0.785	0.922	
	SI1		0.666	0.882	
	SI2		0.716	0.876	
	SI3	(Mtebe &	0.639	0.885	
SI	SI4	Raisamo,	0.674	0.881	0.894
	SI5	2014)	0.636	0.886	
	SI6		0.743	0.873	
	SI7		0.786	0.868	
	ATU1		0.675	0.875	
	ATU2		0.692	0.873	
	ATU3	(Bashir &	0.701	0.872	
ATU	ATU4	Madhavaih,	0.646	0.879	0.890
	ATU5	2014)	0.644	0.879	
	ATU6		0.754	0.866	
	ATU7		0.688	0.874	
	BI1	ายรังสิต	0.804	0.919	
	BI2	(Mikalef et al., 2016)	0.805	0.919	
	BI3		0.779	0.921	
BI	BI4		0.716	0.927	0.931
	BI5		0.772	0.922	
	BI6		0.774	0.922	
	BI7		0.812	0.918	

Based on the statistical findings presented in Table 4.5, it is evident that the Cronbach's alpha coefficients for various variables were calculated as follows: 0.908 for Perceived Ease of Use, 0.881 for Perceived Usefulness, 0.917 for Perceived Convenience, 0.933 for Attitude towards Use, 0.894 for Effort Expectancy, 0.890 for Social Influence, and 0.931 for Behavioral Intention. The obtained results demonstrate strong internal consistency reliability for all the variables of interest, as shown by Cronbach's alpha scores above the threshold of 0.8. This discovery indicates that the variables in our study exhibited a strong degree of internal consistency dependability, confirming that both our models and data are appropriate for further rigorous statistical analysis and validation.

4.3 Estimation of Confirmation Factor Analysis Matrix

Confirmation Factor Analysis (CFA) is the extremely valid approach for determining how properly the small-scale of variables illustrated themselves (Byrne, 2010; Hair, Black, Babin, Anderson, & Tatham, 2006). CFA, an advanced factor analysis statistical approach, is frequently used in social and humanities research to analyze the factor structure suggested by experts for the phenomena (Huang & Yuan, 2020).

Structural Equation Model (SEM) is a classification of the nonuniform series of methods employed according to observational and experimental research in social and humanity science, which is employed most frequently in behavioral academic domain (Boslaugh & McNutt, 2008; Shelley, 2006). Joreskog and Sorbom (1993) stated that the SEM could be determined as the equation which utilizes the latent and observed variables statistical analysis parameters.

4.3.1 Estimation of the Goodness of Fit for the CFA Matrix

The objective of this component is to evaluate and verify the measurement instrument used to test the goodness of fit model for the information gathered in terms of the seven criteria to approach the goodness of model fit. The indexes were: The

CMIN/df, GFI, AGFI, RMSEA, CFI, NFI, and TLI.

Figure 4.6 illustrated the entire CFA measurement matrix. The matrix was developed using the seven latent variables which include Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude towards Use (ATU), Behavioral Intention (BI), Perceived Convenience (PC), Social Influence (SI), and Effort Expectancy (EE). Furthermore, forty-eight observed variables were obtained as the essential components for the CFA measurement matrix. As illustrated in Figure 4.6, the elements in the path diagram signify the following contents. The ellipses, rectangles, and the circles, represented the latent variables, observed variables, and measurement errors individually. The double-head arrows are the covariances that connected each of the latent variables, which are also referred to as factor correlations while the one-way connection between the latent variables and observed variables is illustrated by a single directed arrow with the factors and their items which are also named the CFA factor loading.



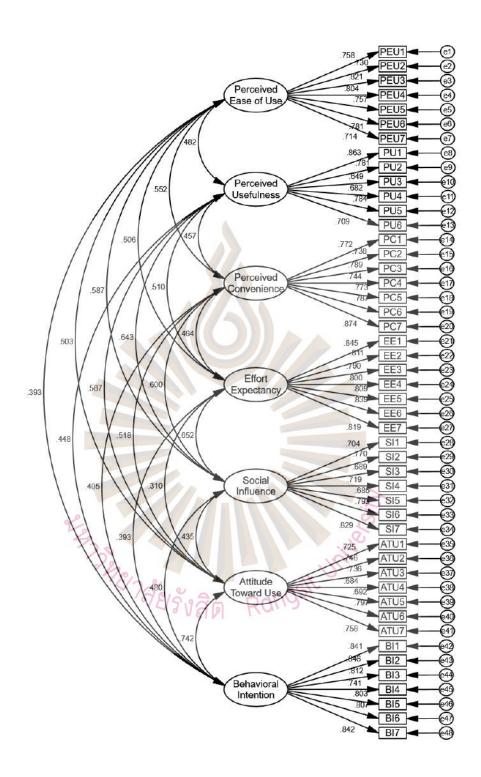


Figure 4.1 The Measurement Matrix

4.3.1.1 The Goodness of Fit Indices

It is suggested that the goodness of fit verifications are utilized to estimate whether the data match with the given distribution (Kesemen, 2021). Kenton (2021) suggested that the unconformity evaluation equates to an observable threshold from the investigated consequences to the Perceived value (Kenton, 2021).

The present research CFA to evaluate the overall constructs collectively. Following the initial stage of CFA, the evaluation of goodness of fit for the CFA matrix was conducted, and adjustments were made based on modification indices to refine the model. It has been recommended that in the context of synthetic quantitative research, at least one fitness index should be employed to assess the congruence between the matrix and the model fit criteria (Kline (2015). Two categories of indices were utilized: absolute fit and incremental fit. The detailed criteria are demonstrated in table 4.6.

Table 4.6 Summary of the Goodness of Fit

Categories	GOF Indices	Criteria	Origin	
	Chi-Square Minimum/ Degree of Freedom (CMIN/DF) Goodness of Fit Index (GFI)	CMIN/DF <3.00 GFI > 0.80	Brown (2015) Wijanto (2008)	
Absolute Fit	Strang, Dangs,			
Indices	Index	AGFI > 0.80	Byrne (2016)	
	(AGFI)			
	Root-Mean-Square Error		Kline (2015)	
	of Approximation	RMSEA < 0.05		
	(RMSEA)			
Incremental Fit Indices	Comparative Fit Index	CFI > 0.90	Hair et al. (2006)	
	(CFI)			
	Normed Fit Index (NFI)	NFI > 0.90	Kline (2015)	

Table 4.6 Summary of the Goodness of Fit (Cont.)

Categories	GOF Indices	Criteria	Origin	
	Tucker-Lewis Index (TLI)	TLI > 0.90	Kline (2015)	

4.3.1.2 Modification Indices

In quantitative research, obtaining all goodness-of-fit indices that align with the criteria in the initial stage of model measurement is a rare occurrence. Therefore, extensive statistical analysis of CFA involves adjustments to the CFA matrix based on modification indices. Some experts are of the opinion that modification indices, used to assess the freed error covariance among observed variables, can indeed enhance the precision of the model, consequently improving the degree of alignment with the goodness-of-fit criteria (Wood, Griffin, Barton, & Sandercock, 2021). In CFA matrix, the covariances instrument utilized to connect corresponding error which could effectively refine the fitness degree. Table 4.7 provides an overview of the goodness of fit findings from CFA both before and after modification. Figure 5.2 shows the CFA matrix after adjustments.

Table 4.7 The Goodness of Fit Results of CFA

Categories	GOF Indices	Criteria	Source	Before	After
	2/2	200	rien	Adjustment	Adjustment
Absolute Fit Indices	CMIN/DF	<3.00	Hair, et al. (2010)	1.465	1.386
	GFI	>0.80	Wijanto, S.H. (2008	0.876	0.883
	AGFI	>0.80	Filippini, et al. (1998)	0.862	0.870
	RMSEA	< 0.05	Browne and Cudeck (1993)	0.032	0.029
Incremental Fit Indices	CFI	>0.90	Hair, et al. (2006)	0.965	0.971
	NFI	>0.90	Hair, et al. (2006)	0.898	0.904

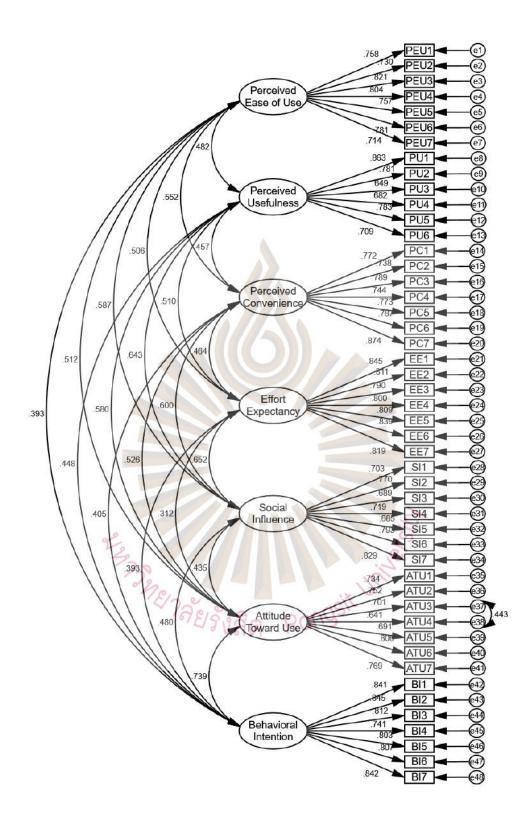


Figure 4.2 The Measurement Matrix After the Adjustment

4.3.1.3 Evaluation of the Matrix for Confirmatory Factor Analysis

Before data collection, item-objective congruence (IOC) was conducted to ensure the content validity of the instrument, and a pilot test was executed to assess internal consistency reliability with 30 respondents, as explained in chapter three. Subsequently, internal consistency reliability verification was performed using data from all 450 respondents after data collection. Following the adjustment of the goodness fit for the CFA matrix, construct validity was examined.

4.3.1.4 Construct Validity

Construct validity is estimated based on identifying the inherent structure and linking the scale with the related variables. Construct validity is the essential character of the various validity for the research estimation in the social and humanity science exploration (Husna & Akmal, 2021). However, the authentication of construct validity rest with when the consequences generated an attractive series of requirements for the validity (Brown, 2000). Taherdoost (2016) suggested that construct validity could be separated into two essential sub-components: the convergent validity and the discriminant validity. In according to Pallant (2010), convergent validity is evaluated by three major indictors which are factor loading, average variance extracted (AVE), and composite reliability (CR).

4.3.1.5 Convergent Validity

Convergent validity is a term which often applied in social science study to describe how closely two assessments of variables should be related to one another. The convergent validity would evaluate how multi- indicators of significant level might interconnect in the comparable construct. (Churchill, 1979). According to Cheung and Wang (2017), convergent validity is the degree to which two assessments assessing the same concept are related. In this work, factor loading, average variance extracted (AVE), and composite reliability (CR) were used to assess convergent validity.

(1) Factor Loading

Factor loading is the term representing the coefficient of the question-statements with the fundamental latent variable (Hu & Li, 2020). The factor loading of a variable demonstrates the extent to which the observed variable is

interconnected with a certain factor (Dennis, 2006). A considerable portion of prior literature has established that the appropriate threshold of factor loading should be greater than 0.500. (Chen & Tsai, 2007; Hulland, 1999; Truong & McColl, 2011). In this study, the value of factor loading for the entire observed variables were above 0.500, with the minimum value of 0.641, and the maximum value of 0.874. This finding suggests that the values for all factor loadings were at an optimal level.

(2) Average Variance Extracted (AVE)

According to the previous research from Fornell and Larcker (1981), average variance extracted (AVE) is an assessment of the quantity of variance captured by a construct in comparison to the amount of variance attributable to measurement error. The overall number of squares of completely standardized factor loadings differentiated by the summation outcomes and the erroneous variances for all the indications may be utilized to determine the average variance extracted for the constructs (Huang & Yuan, 2020). Several experts have confirmed that the range of the value for average variance extracted should be between 0 and 1.000, and greater than 0.500 is the sufficient extent for the convergent validity (Hair et al., 2013; Bagozzi & Yi, 1988).

The statistical results of AVE are summarized in Table 4.8. The results were from 0.532 to 0.666. The highest one of AVE was Effort Expectancy (EE) in which the threshold was 0.666. The second largest one was Behavioral Intention (BI) in which the value was 0.662. The third one was Perceived Convenience (PC) with the value of 0.614. The fourth one was Perceived Usefulness (PEOU) with the value 0.589. The fifth one was Perceived Usefulness (PU) with the threshold of 0.559. The sixth one was Social Influence (SI) with the score of 0.552. Finally, the lowest one was Attitude towards Use (ATU), with the AVE value of 0.532. Therefore, the entire value of AVE is above 0.500 which have matched the acceptable criteria.

(3) Composite Reliability (CR)

The composite reliability or congeneric reliability is a category of solitary standardized evaluation reliability rate, or the trustworthiness of individuals spanning items with a completely constant occasion in quantitative analyses utilized in psychological estimation (Joreskog, 1971). Netemeyer (2003) suggested that composite reliability which in some aspects approaches Cronbach's

Alpha, is an approximation of consistency reliability for the measurement items. The threshold of composite reliability should be above 0.700 which indicates that the observed variables are in the acceptable degree (Gefen, Straub, & Boudreau, 2000; Hair et al., 2010; Kline, 2010; Srinivasan, 2002). The calculated results of CR are summarized in Table 4.8. The value range of the results was from 0.883 to 0.933. The highest value of CR was Effort Expectancy (EE) in which the threshold was 0.933. The second largest one was Behavioral Intention (BI) with the value of 0.932. With a value of 0.917, Perceived Convenience (PC) came in third. Perceived Ease of Use (PEOU), with a rating of 0.909, was the fourth one. The fifth one was Social Influence (SI) in which the threshold was 0.896. The sixth one was Attitude towards Use (ATU) in which the score was 0.888. Finally, the lowest one was Perceived Usefulness, in which the value of CR was 0.883. The entire value of CR is above 0.700 which have reached the ideal level.

Table 4.8 Factor Loading, T-Value AVE, and CR

Observed Variable	Item	Factor Loading	S.E.	T-value	p	CR	AVE
PEOU	PEOU1	0.758	1.11		it.	0.909	0.589
	PEOU2	0.73	0.057	15.779	***		
	PEOU3	0.821	0.063	18.047	***		
	PEOU4	0.804	0.06	17.625	***		
	PEOU5	0.757	0.06R	16.455	***		
	PEOU6	0.781	0.055	17.048	***		
	PEOU7	0.714	0.065	15.407	***		
PU	PU1	0.863				0.883	0.559
	PU2	0.781	0.044	19.609	***		
	PU3	0.649	0.048	15.116	***		
	PU4	0.682	0.046	16.162	***		
	PU5	0.783	0.05	19.721	***		
	PU6	0.709	0.041	17.063	***		

Table 4.8 Factor Loading, T-Value AVE, and CR (Cont.)

Observed	T4	Factor	C.E.	Т1		CD	ANT
Variable	Item	Loading	S.E.	T-value	p	CR	AVE
PC	PC1	0.772				0.917	0.614
	PC2	0.738	0.053	16.42	***		
	PC3	0.789	0.052	17.812	***		
	PC4	0.744	0.053	16.601	***		
	PC5	0.773	0.056	17.362	***		
	PC6	0.787	0.053	17.742	***		
	PC7	0.874	0.056	20.17	***		
EE	EE1	0.845				0.933	0.666
	EE2	0.811	0.047	21.094	***		
	EE3	0.79	0.045	20.259	***		
	EE4	0.8	0.044	20.658	***		
	EE5	0.809	0.042	21.008	***		
	EE6	0.839	0.047	22.286	***		
	EE7	0.819	0.045	21.442	***		
SI	SI1	0.703	1.11		ity	0.896	0.552
	SI2	0.77	0.073	15.328	***		
	SI3	0.689	0.072	13.767	***		
	SI4	0.719	0.068	14.357	***		
	SI5	0.685	0.071	13.692	***		
	SI6	0.793	0.074	15.771	***		
	SI7	0.829	0.071	16.44	***		
ATU	ATU1	0.734				0.888	0.532
	ATU2	0.752	0.064	15.582	***		
	ATU3	0.701	0.063	14.474	***		
	ATU4	0.641	0.065	13.18	***		
	ATU5	0.691	0.064	14.281	***		
	ATU6	0.806	0.06	16.753	***		
	ATU7	0.769	0.063	15.948	***		

14010 110 1401	Tuest to Factor Zeading, 1 variability, and est (cont.)								
Observed Variable	Item	Factor Loading	S.E.	T-value	p	CR	AVE		
BI	BI1	0.841				0.932	0.662		
	BI2	0.845	0.046	22.445	***				
	BI3	0.812	0.047	21.044	***				
	BI4	0.741	0.051	18.331	***				
	BI5	0.803	0.047	20.665	***				
	BI6	0.807	0.046	20.818	***				
	BI7	0.842	0.047	22.317	***				

Table 4.8 Factor Loading, T-Value AVE, and CR (Cont.)

Note SE=Standard Error, ***=p<0.001; **=p<0.01; *=p<0.05.

Based on the data which illustrated in Table 4.8, the entire value for the factor loading, average variance extracted (AVE), and composite reliability (CR) were in the acceptable level, which indicated that the convergent validity was well established.

4.3.1.6 Discriminant Validity

Reichardt and Coleman (1995) suggested that the absolute threshold for the association between the two constructs which separate from one is defined as discriminant validity. Hair et al. (2010) postulated that discriminant validity is a subtype of validity which concentrates on guaranteeing that a construction is assessed in a manner that is empirically distinct and demonstrates a phenomenon that other estimates could not. Zait and Bertea (2014) suggested that discriminant validity demonstrates the measurement items should interconnect greater among them than with other scale items from other constructs that are theoretically supposed not to connect.

The variables' AVE square roots in the discriminant value summarization are enumerated in a diagonal direction. According to this principle, the square root of each latent variables⁵ AVE should have been much significantly greater than the causal interconnection of that conceptual framework with any constructs. For each latent variable, the AVE threshold would need to be at least 0.500 (Fornell &

Larcker, 1981). Discriminant validity exhibits the amount of characteristic causal connection assessments which is approximately equal to two, and the measurement deviations are significantly inferior to 1.000 (Schmitt & Stults, 1986). In terms of discriminant validity, it is believed by some that the square root of the average variance extracted (AVE) should exceed the coefficient between any two latent variables, and the coefficient between two latent variables should be less than 0.800, as suggested by Liu, Li, and Wang (2020).

As the data of discriminant validity are summarized in Table 4.9, the square root of AVE has been demonstrated in diagonal which were 0.767, 0.748, 0.784, 0.816, 0.743, 0.729, and 0.814, and the maximum value of the coefficient for any two latent variables was 0.681. According to these statistical results, the discriminant validity of this dissertation was established.

Table 4.9 Discriminant Validity

Correlation	PEOU	PU	PC	EE	SI	ATU	BI
PEOU	.767					_	
PU	.439**	.748			1/8/		
PC	.504**	.408**	.784	Bri	King		
EE	.465**	7.470**	.425**	.816			
SI	.534**	.579**	.537**	.600**	0.743		
ATU	.460**	.529**	.474**	.281**	.390**	0.729	
BI	.361**	.423**	.378**	.368**	.446**	.681**	0.814

Note The diagonally listed values are the AVE square roots of the variables

4.4 Evaluation of Structural Equation Model

After the estimation of the confirmatory factor analysis matrix, the subsequent step was to evaluate the structural equation model to determine the connections and effect between the endogenous and exogenous latent variables.

The inferential analysis of structural equation modeling (SEM) was used to quantify and scrutinize the interactions between observed and latent variables. It evaluates linear causal relationships between variables while compensating for misspecification, comparable to but perhaps more influential than regression evaluations (Boslaugh & McNutt, 2008; Shelley, 2006). Structural equation modeling (SEM) is a mathematical methodology which utilizes confirmatory factor analysis to evaluate an incorporated strategic step that influences a concept. This theory generally interconnects to causal mechanisms that lead to analyses of a variety of variables (Newcomb & Bentler, 1988).

According to Byrne (2016), "structural equation modeling" corresponds to two specific domains of the strategy. Initially, a series of structural equations are utilized to characterize the investigated causal mechanisms. Second, these structural associations could be pictorially symbolized to assist in comprehending the hypothesis being scrutinized. According to Hair (2021), the representation of causality connection inside the constructs of the research framework was accomplished via the use of the structural equation modeling, which is also referred to as the theoretical or causal matrix. The drawing method of SEM matrix is very similar to CFA matrix, with the same ellipses, rectangles, and circles, which represented the latent variables, observed variables, and measurement errors individually. The key difference is in the matrix of SEM, where the linkages between latent variables are shown by single-directional arrows that align with the pathways. These associations should be established based on the underlying conceptual framework.

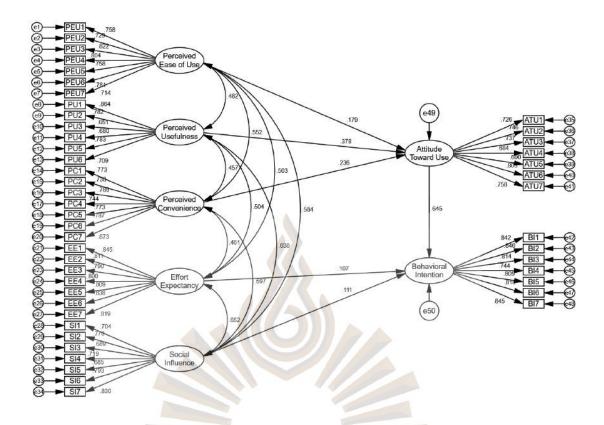


Figure 4.3 The Structural Matrix

The construction of SEM matrix for this study is illustrated in Figure 4.10. Similar to the CFA, the SEM matrix has the same seven latent variables, which include Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude towards Use (ATU), Behavioral Intention (BI), Perceived Convenience (PC), Social Influence (SI), and Effort Expectancy (EE). The single directional arrows which correlated with the latent variables describe the regression parameters and reflected the influence of one latent variable to another. There were three single-head arrows pointing to endogenous variable Behavioral Intention, which reflected the triple exogenous influencers: Attitude towards Use, Social Influence, and Effort Expectancy that might have exerted the causal impact on the Behavioral Intention. Furthermore, similar relationship also existed in exogenous factors Perceived Ease of Use, Perceived Usefulness, and Perceived Convenience to endogenous variable Attitude towards Use.

In addition, the definition of residual error is the deviation in forecasting endogenous factors according to exogenous factors, and Byrne (2016) suggested that in the SEM, it is essential to emphasize that the residual error coefficient are unobserved variables. Hence, in this study, the residual error, which include e49, and e50 illustrated in Figure 4.10, reflected the deviation in forecasting Behavioral Intention (endogenous variable) from Attitude towards Use, Social Influence, Effort Expectancy (exogenous variables); and the error in predicting Attitude towards Use (endogenous variable) from Perceived Ease of Use, Perceived Usefulness and Perceived Convenience (exogenous variables).

4.4.1 Evaluation the Goodness of fit for the SEM Matrix

Similar to the CFA, the objective of this section was to evaluate and verify the structural instrument. After the initial data examination in SEM, the goodness of fit for the SEM model was assessed. Two categories of goodness of fit were examined to refine the SEM matrix. These categories encompassed CMIN/DF, GFI, AGFI, and RMSEA from the absolute fit indices, as well as CFI and TLI from the incremental fit indices.

The covariance instrument was utilized to correlate the interrelated deviation to obtain the fitness for the SEM matrix. After the seven covariances which have connected eight measurement errors were established, the SEM matrix matched the criteria indicated in this study. The results for goodness of fit from SEM, are summarized in Table 4.10.

Table 4.10 The Goodness of Fit Results of SEM

Categories	GOF Indices Criteria Source		Source	Before	After
	GOT mulces	Citteria	Source	Adjustment	Adjustment
	CMIN/DF	<3.00	(Brown, 2015)	1.478	1.400
Absolute Fit Indices	GFI	>0.80	(Wijanto, 2008)	0.875	0.882
indices	AGFI	>0.80	(Byrne, 2016)	0.862	0.870

- ·	COET 1	G :: :	<u> </u>	Before	After
Categories	GOF Indices	Criteria	Source	Adjustment	Adjustment
	RMSEA	< 0.05	(Kline, 2015)	0.033	0.030
Incremental	CFI	>0.90	(Hair et al., 2006)	0.964	0.970
Fit Indices	TLI	>0.90	(Kline, 2015)	0.962	0.968

Table 4.10 The Goodness of Fit Results of SEM (Cont.)

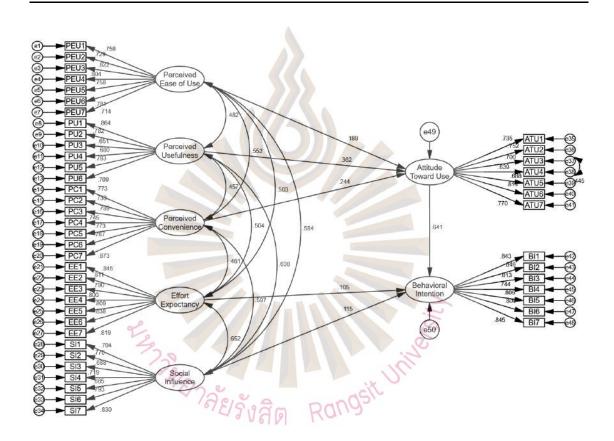


Figure 4.4 The Structural Matrix After the Adjustment

4.4.2 Research Hypotheses Examining

Ioannidou and Erduran (2020) convinced that the objective of the quantitative research approach is to test the proposed hypotheses by considering various independent and dependent variables. therefore, seven alternative hypotheses were illustrated as follows:

Hypothesis 1: Perceived Ease of Use has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 2: Perceived Usefulness has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 3: Perceived Convenience has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 4: There is a significant causal relationship between Effort Expectancy and Behavioral Intention.

Hypothesis 5: There is a significant causal relationship between Social Influence and Behavioral Intention.

After the modification model and model fitness assessment, the hypotheses were tested and presented in this section. The SEM matrix in which the goodness of fit has matched the correlated criteria, the hypotheses were examined. The hypothesis testing results are summarized in table 4.11.

Perceived Usefulness (PU) stood out as the most influential variable, with a significant standardized path coefficient of 0.362 (p<0.001), indicating that it had the strongest direct impact on Behavioral Intention, mediated by Attitude towards Use. Following closely was Perceived Convenience (PC), which also significantly affected Behavioral Intention with a standardized path coefficient of 0.244 (p<0.001) through its mediation by Attitude towards Use. Perceived Ease of Use (PEOU) was next in line, contributing to Behavioral Intention through Attitude towards Use, with a coefficient of 0.189 (p<0.001). Social Influence (SI) and Effort Expectancy (EE) exhibited relatively weaker influences with coefficients of 0.115 (p<0.05) and 0.105 (p<0.05), respectively, making them the least influential variables in determining Behavioral Intention.

Table 4.11 Research Hypotheses Test Results

	Hypotheses		Standardized Path Coefficient (p)	S.E.	T-Value	Test Results
Hl	PEOU	BI	0.189	0.042	3.373***	Supported
H2	PU	BI	0.362	0.041	6.649***	Supported
Н3	PC	BI	0.244	0.04	4.408***	Supported
H4	EE	BI	0.105	0.039	2.074*	Supported
Н5	SI	BI	0.115	0.048	2.087*	Supported

Note ***=p<0.001; **=p<0.01; * =p<0.05.

4.4.3 Explanation of the Results for Hypotheses Testing

As shown in the data in Table 4.11, the entire hypotheses were supported. Detailed explanation follows.

Hypothesis 1: Perceived Ease of Use has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 1 proposed an indirect significant causal connection between Perceived Ease of Use and Behavioral Intention with Attitude towards Use (ATU) as a mediator. The results showed that there is a positive statistical correlation between Perceived Ease of Use (PEOU) and Behavioral Intention (BI) to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu, with the standardized path parameter at 0.189, and the t-value at 3.373***. Consequently, HI was supported.

Hypothesis 2: Perceived Usefulness has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 2 proposed an indirect significant causal connection between Perceived Usefulness (PU) and Behavioral Intention (BI) with Attitude towards Use (ATU) as a mediator. The result demonstrated that there is a positive statistical correlation between Perceived Usefulness (PU) and Behavioral Intention (BI) to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu, with the standardized path parameter at 0.362, and the t-value at 6.649 ***. Hence, H2 was supported.

Hypothesis 3: Perceived Convenience has an indirect effect on Behavioral Intention with Attitude towards Use as a mediator.

Hypothesis 3 proposed an indirect significant causal association between Perceived Ease of Use (PC) and Behavioral Intention (BI) with Attitude towards Use (ATU) as a mediator. The result showed that there is a positive statistical correlation between Perceived Ease of Use (PC) and Behavioral Intention (BI) to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu, with the standardized path parameter at 0.244, and the t- value at 4.408 ***. Therefore, H3 was supported.

Hypothesis 4: There is a significant causal relationship between Effort Expectancy (EE) and Behavioral Intention (BI).

Hypothesis 4 proposed an indirect significant causal relationship between Effort Expectancy (EE) and Behavioral Intention (BI). The statistical test result demonstrated that there is a positive statistical correlation between Effort Expectancy (EE) and Behavioral Intention (BI) to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu, with the standardized path parameter at 0.105, and the t-value at 2.074 ***. Accordingly, H4 was supported.

Hypothesis 5: There is significant causal correlation between Social Influence (SI) and Behavioral Intention (BI).

Hypothesis 5 proposed an indirect significant causal interconnection between Social Influence (SI) and Behavioral Intention (BI). It was reported that there is a positive statistical correlation between Social Influence (SI) and Behavioral Intention (BI) toward use to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu, with the standardized path parameter at 0.115, and the t-value at 2.087 ***. As a result, H5 was supported.

4.4.4 Direct, Indirect, and Total Effects

No matter how complex the model is, the model cannot capture all aspects of the relationship between variables (Edwards, 2013). The application of social sciences depends on direct and indirect effects, which are commonly discovered in mediation analysis (MacKinnon, 2008; Hyman, 1955). The research model operates without the mediator variable due to the direct impact. The indirect effect, as defined by Tueller and Lubke (2010), is the relationship between two variables that is moderated by at least one factor. The mediator variable is utilized in mediation to characterize how or whether an independent variable influences a consequence. (Gunzler, Chen, Wu, & Zhang, 2013). Mediation processes are intermediate variables between an independent and a dependent variable. This mechanism encompasses three categories of variables: the dependent, the independent, and the (hypothesized) mediator variable, all of which have been anticipated to communicate the causation connection between the dependent and independent variables. The total effect of independent on dependent variables is described as the combination of the direct and indirect effects of independent and dependent variables transferred via the mediator variable. (Agler & De Boeck, 2017). Including an intermediary will inevitably increase the minimum distance between x and y, and the related paths will inevitably be related, which requires additional model assumptions. If these assumptions are not true, the estimates of direct and indirect are biased (Sobel, 2008). Therefore, we have to consider the mutual influence of direct variables and indirect variables on the total effects.

In this study, there were four independent variables which included Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Perceived Convenience (PC), Social Influence (SI), and Effort Expectancy (EE); one mediator variables which is Attitude towards Use (ATU), and one dependent variable Behavioral Intention (BI). Table 4.12 provides an overview of the statistical findings for the direct, indirect, and overall effects. The statistical results for the p-value illustrated by two-tailed-significance are shown by Table 4.13. Figure 4.5 shows the related path analysis results.

Table 4.12 Direct, Indirect, and Total Effects of the Relationship among Variables

		20	Independ	lent Variables						
Dependent Variables	SI	EE	PC	PU	PEOU	ATU				
Total Effect										
Attitude Towards Use	0	0	0.244**	0.362***	0.189**	0				
Behavioral Intention	0.115*	0.105**	0.156***	0.232***	0.121**	0.641***				
		Dire	ect Effect							
Attitude Towards Use	0	0	0.244**	0.362 ***	0.189 **	0				
Behavioral Intention	0.115*	0.105**	0	0	0	0.641 ***				
		Indi	rect Effect	7.3						
Attitude Towards Use	0	0	0	0.5	0	0				
Behavioral Intention	0	0	0.156 ***	0.232 ***	0.121 **	0				
22	2/- 2		R2	. Au.						
Attitude Towards Use	र ने महा	ว้าสิต	Rangs	0.424						
Behavioral Intention	0.01 *	V 61 191	110	0.575						

<u>Note</u> ****=p<0.001; **=p<0.01; *=p<0.05

Table 4.13 The statistical results for the p-value

	Independent Variables						
Dependent Variables	SI	EE	PC	PU	PEOU	ATU	
	P-Value of Total Effect						
Attitude Towards Use	•••	•••	.001	.000	.002	•••	
Behavioral Intention	.019	.009	.000	.000	.001	.000	

Table 4.13 The statistical results for the p-value (Cont.)

Independent Variables							
Dependent Variables	SI	EE	PC	PU	PEOU	ATU	
P-Value of Direct Effect							
Attitude Towards Use			.001	.000	.002		
Behavioral Intention	.019	.009	•••			.000	
	P-	Value of In	direct Effec	t			
Attitude Towards Use	•••						
Behavioral Intention	•••		.000	.000	.001		

Note ***=p<0.001; **=p<0.01; *=p<0.05

1) Behavioral Intention

The dependent variable in this study was Behavioral Intention, and the R² value of 0.575 showed that 57.5% of the variance in Behavioral Intention could be explained by Perceived Ease of Use, Perceived Usefulness, Perceived Convenience, attitude toward use, Social Influence, and Effort Expectancy. There were three latent variables that significantly directly impacted Behavioral Intention which were Effort Expectancy, Social Influence, and Attitude towards Use, with the impact points equivalent to 0.105**, 0.115**, and 0.641*** individually. In addition, another three latent variables meaningfully impacted Behavioral Intention indirectly which included Perceived Convenience, Perceived Usefulness, and Perceived Ease of Use, with values equivalent to 0.244**, 0.362***, 0.189** respectively.

2) Attitude Towards Use

Attitude towards use was the mediator variable in this study and three latentvariables which significantly impacted Attitude towards Use directly. The R² of Attitude towards Use was 0.424, illustrating that 42.4% of the variance could be attributed to Perceived Convenience, Perceived Usefulness, and Perceived Ease of Use. The construct that significantly affected Attitude towards Use directly include Perceived Usefulness with the value at 0.362 ***, Perceived Ease of Use with the value at 0.189 ** and Perceived Convenience with the value at 0.244 **.

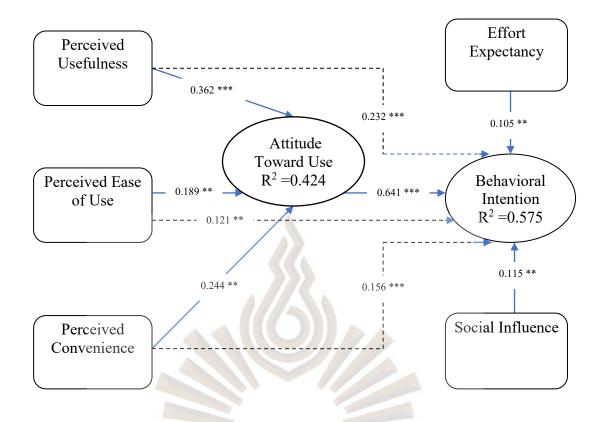


Figure 4.5 Path Diagram Consequences

4.5 Qualitative Data Analysis

Focus groups and semi-structured interviews with undergraduate students majoring in English at the three institutions were used in the qualitative phase to investigate and validate the key elements influencing the behavior intentions of the participants in the hybrid education. The methodology in this research was used to identify and themes found in the transcripts of the interviews. The qualitative data were collected for the purposes of answering the 3rd research question. Qualitative data were analyzed by using Nvivo12.

4.5.1 Interview Data analysis

In thematic analysis, raw data is transformed into organized themes that resonate with the underlying patterns in the data (Braun & Clarke, 2006). This process

involves an active role from the researcher, from data familiarization to theme revision and definition. Braun and Clarke (2006) are renowned figures in the qualitative research community who emphasize the flexibility inherent in thematic analysis. They describe it as a method that's both 'essentialist,' capturing the experiential realities of participants, and 'constructionist,' focusing on the broader socio-cultural contexts that influence these realities. This flexibility is what allows thematic analysis to be adapted to the needs of specific research contexts. In line with their perspective, our approach to generating themes was informed by both the explicit content of our data and our interpretations as researchers. Our occasional move from subthemes to main themes reflects this balance, as we sought to capture the nuances of participant experiences while also recognizing broader patterns.

4.5.1.1 Initial thematic identification

Thematic analysis involves a detailed, non-judgmental examination of interview data to identify, analyze, and categorize themes in a systematic manner (Lee et al., 2018). This step converts raw material into thematic labels that help organize and categorize the information (Dougherty, 2017). During the initial stage, patterns and trends were discerned in the interview data. Using a coding system like aax (where x = 1, 2, 3, ...), patterns were labeled. For instance, "aa1" might represent a statement such as "This approach to learning English is quite promising...". These thematic labels were then grouped to represent broader themes. (Refer to table 4.13)

Using the Nvivo 12 software, the interview data were thoroughly examined to identify recurring patterns and themes. From the interviews, an initial set of 94 themes, labeled from aa1 to aa94, were drawn out. Upon deeper examination and to ensure clarity and relevance, these themes were distilled down to 83 principal themes, which were numbered from a1 to a83. As part of the refining process, redundant or irrelevant themes were discarded. The consolidated themes, which truly encapsulated the participants' perspectives, were then relabeled as nnxx (where xx = 01, 02, etc.). For instance, an initial theme "a24 - Internet teaching technology" was refined and relabeled as "nn01" to emphasize its recurring significance across the interviews. These principal themes were subsequently grouped into broader thematic

categories denoted as NNXX (XX=01, 02, ...). An example of such a thematic category is "NN01 Perceived Usefulness."

Table 4.14 Scope of initial themes

Original Interview Statements	Lable	Initial Theme
This approach to		
learning English is quite	A	
promising. It simplifies the		
process using technology,		
which is a big plus. I		
genuinely believe that this		
method can significantly	aa1A Comprehensive	
improve my English skills.	Digital-Library	al Internet
It's like having a well-	Approach for	Education
equipped digital library	Enhanced English	Technology
accessible through my	Learning	
smartphone. As an English	The last	2
major, my studies involve in-	5	S
depth exploration of	The state of the s	
literature and language, and	acit U	
this approach seems tailored	่งสิต Rangs	
to our academic needs.		

Table 4.14 Scope of initial themes (Cont.)

Original Interview	5 (Cont.)		
Statements	Lable	Initial Theme	
I appreciate how it helps me			
manage my time and budget			
effectively. It's practical for			
students like me who have a			
lot on their plates. With my			
heavy coursework, this	aa2Time-Efficient		
online learning method eases	Personal Tutoring	a2 Save Time	
the load. It's akin to having a	Experience for	Costs	
personal tutor at your	English Majors		
fingertips around the clock.			
English majors deal with			
complex subject matter, and			
this approach simplifies our			
learning process.			
Exploring English has	The Lates	2	
become an immersive		S	
journey. It feels like more	Tist.		
than just studying; it's	deit		
experiencing the language in	van Rangs		
various dimensions. This	aa3Deep Immersive		
innovative approach deepens	Experience in	a3 Immersive	
our understanding of	English Language	Experience	
language, literature, and	and Literature		
culture. As English majors,			
we're passionate about our			
field, and this approach			
aligns perfectly with our			
aspirations.			

Table 4.14 Scope of initial themes (Cont.)

Original Interview	· · · · · · · · · · · · · · · · · · ·		
Statements	Lable	Ir	nitial Theme
Learning becomes much			
more manageable with the tech			
tools we use. The platform's			
user-friendliness ensures a			
smooth learning experience. It	a4Tech-Enhanced		
simplifies the process of using		a4	Related
these helpful learning tools. It's	User-Friendly		Learning
like a bridge to making	Platform for English		Technologies
studying more accessible.	Major Studies		
English major coursework can			
be demanding, and having an			
easy-to-navigate platform is a			
game-changer.			
Last week, I was in a			
lecture about Shakespearean	1111	-	
plays. Later, I had to head home	5		
for the weekend and realized I	linite .		
forgot my textbook in my dorm.	asit).		
In the past, that would have	Range		
stressed me out. But now, I just	Connectivity	o. 5	Eagy To
pulled out my laptop, got the	Connectivity Payand Classroom	as	Easy To
course materials, and even	Beyond Classroom Boundaries		Operate
jumped into a discussion about	Doulidaries		
the play. It's just so smooth			
switching between class and			
studying on my own. Makes			
learning feel more connected			
and fun.			

Table 4.14 Scope of initial themes (Cont.)

Original Interview	s (Cont.)		
Statements	Lable	Initial Theme	
The flexibility to plan			
my study time is incredibly			
convenient. It empowers us to			
take control of our schedules,			
which is crucial in our field.	(E 1 1		
	aa6Empowered and	. C E1 1.1.	
This learning method offers a	Customizable Study	a6 Flexible	
level of customization that's	Schedule for	Arrangements	
incredibly valuable. English	English Majors		
majors often juggle multiple			
tasks, and this approach			
accommodates our need for			
flexibility.			
Gone are the worries			
about when or where to			
study. It provides limitless	11111		
possibilities. I can access my	5		
English materials from	aa7Unrestricted English		
anywhere—whether I'm at	Study Access	a7 Not Limited by	
home or enjoying a coffee at	Regardless of Time	Time and Space	
a café. It's liberating. English	and Place	Time and Space	
major studies require	and riace		
constant reading and			
analysis, and this approach			
caters to our need for			
anytime, anywhere learning.			
Maintaining discipline	aa8Discipline-Driven		
is essential for me. I	Approach for	a8 Discipline	
understand that the more	Advanced English	Expectations	
effort I put in, the greater the	Learning		

Table 4.14 Scope of initial themes (Cont.)

Original Interview	s (Cont.)	
Original Interview	Lable	Initial Theme
Statements		
rewards. It's what keeps me		
motivated. In English studies,		
discipline is key, and this approach		
encourages our commitment.		
I have high expectations for		
my learning experiences.		
Excellence is a priority in my		
English studies, and this		
approach seems to align with	aa9Guided Mentorship	
those expectations. It's akin to	Approach Meeting	a9 Learning
having a mentor guiding you	English Academic	Expectations
throughout your academic	Aspirations	
journey. English majors aim for		
excellence in language and		
literature, and this approach	MILITAL E	
enhances that pursuit.	5	
The rapid evolution of	Wint.	
technology is an exciting aspect	deit	
of our student life. Being part of	งสิต Rangs	
this technological revolution is	10 End	
fascinating. I have faith in this	aa10 Embracing	
modern approach to learning, and	Modern	-10T11
I believe it's well-suited for our	Technological	a10Technology
future careers. As aspiring	Innovations for	Development
professionals in language and	English Career	
literature, we recognize the	Readiness	
importance of embracing		
technology for our future career		
readiness.		

Table 4.14 Scope of initial themes (Cont.)

Table 4.14 Scope of initial theme	5 (Cont.)	
Original Interview	Lable	Initial Theme
Statements		
Customizing our		
learning to match our		
individual needs is crucial.		
It's like embarking on a		
tailored educational journey.	aa11 Personalized	
Personalized learning is a	Learning Pathway	a11Targeted
significant factor for us, and	Tailored to English	Learning
this modern approach fully	Majors' Needs	Learning
embraces it. English major	Wajors Needs	
studies demand tailored		
approaches, and this method		
seems perfectly suited to our		
academic journey.		
Learning used to be a struggle,		
but not anymore. This new	aa12 Supportive and	. 12D 1-41 1
approach offers us help where	Guided Approach to	a12Breakthrough
we need it. It's like having	Tackle English	Learning
someone there to guide you	Study Hurdles	Difficulties
through the tough stuff.	vân Rangs	
It takes my learning to a		
whole new level. It's like an	12 F 1 1 1	
adventure. I feel like I'm	aa13 Enriched and	10.01
getting more out of my	Profound	a13Elevate
English studies. This	Exploration of	Learning
approach helps me explore	English Studies	
English in-depth.		
Learning efficiently is	aa14 Online English	
important for us. I manage	Debates for	a14Learning
my time and learn from	Efficient and	Efficiency

Table 4.14 Scope of initial themes (Cont.)

Original Interview	T 11	T '.' 1 TPI	
Statements	Lable	Initial Theme	
different places. In our field,	Enhanced		
discussions and debates are a	Knowledge Sharing		
must. This approach lets us			
do that online, so we can			
share ideas whenever we			
want.			
No more worrying about			
time and place. I can learn	aa15 Limitless		
from anywhere, whether I'm	English Learning,	a15 Across Time	
at home, in a dorm, or at a	Accessible Across	and Space	
café, as long as I've got Wi-	the Globe	ана Брасс	
Fi. It's like having the world	the Globe		
as your classroom.			
We've got different			
ways to learn, and that's	aa16 Diverse English		
pretty cool. It's not one-size-	Learning Strategies	a16Methods Of	
fits-all. I like that. It's like	Catering to Varied	Practice	
having a toolkit for learning	Needs Needs	Tractice	
English, and it's got	v तेल स्वाप्तुः		
something for everyone.			
They're really putting in			
the effort to make this			
approach awesome. It's	aa17 Inspirational		
making teaching and learning	Commitment to	a17Effort to	
better. We see the	Raise the Bar in	Promote	
commitment to making it the	English Teaching		
best it can be. It's pretty			
inspiring.			

Table 4.14 Scope of initial themes (Cont.)

Original Interview Statements	Lable	Initial Theme
Making teaching and	aa18 Prioritizing	
learning better is important. It's all about keeping things in check in the classroom. It's a big deal. Enhancing the	Improvement in English Classroom Dynamics and Interaction	a18Improving Classroom Dynamics
effectiveness of teaching and learning is vital. It accomplishes that effectively. Focus on classroom discipline is something I value. It sets the tone for a productive learning environment. Promoting this learning model is a step in the right	aa19 Promoting Discipline to Foster Productive English Learning Environments	a19Focus On Classroom Discipline
direction. It benefits both students and educators. Sharing related software is like sharing knowledge and resources. It enhances the learning experience and fosters collaboration. I believe in sharing related	aa20 Collaborative English Learning Through Shared Resources and Software	a20Promotion of the Learning Model
software. It's like sharing a toolbox with fellow learners. It's about fostering a community of learners who support each other. It's something I'd recommend to others without hesitation.	aa21 Cultivating an English Learning Community through Software Resource Sharing	a21 Sharing Related Software to others

4.5.1.2 Reviewing Themes

The research employed a rigorous thematic analysis approach to delve deep into the perspectives of undergraduate students majoring in English, especially concerning their Behavioral Intentions toward hybrid education.

Upon initial analysis, the data revealed multiple emergent themes, encapsulating students' varied perceptions, attitudes, and intentions:

- (1) Perception of Factors: Central to the study was understanding students' intrinsic perceptions regarding hybrid education. Within this overarching theme, the subtheme, the subtheme "NN01 Perceived Usefulness" encapsulates diverse concepts like "Internet Education Technology," "Save Time Costs," and "Immersive Experience," all pointing towards the undergraduate English major students' value perception of hybrid education.
- (2) Functional Aspects of Hybrid Education: This theme encapsulated "NN02 Perceived Ease of Use. This subtheme brings forth concepts like "Related Learning Technologies" and "Ease of Operation," emphasizing the functional and operational attributes of hybrid learning as viewed by the students. These insights underscore the importance of user-friendly platforms and tools in facilitating a seamless hybrid learning experience.
- (3) Attitudinal Beliefs: Beyond mere perceptions, the study delveded into the students' attitudes towards hybrid education. One of the prominent subthemes here was "NN06Enhancing Academic Achievement" which captureed the sentiments and beliefs of undergraduate students majoring in English on how hybrid education potentially influences their academic outcomes that hybrid learning could bolster their academic performance, offering a blend of traditional and digital methods tailored to their learning preferences.
- (4) Behavioral Intentions: The culmination of perceptions and attitudes inevitably leads to actionable intentions. The data suggested that students were keen on recommendations, further adoption, and even advocacy for hybrid education, given their Perceived benefits.

Table 4.14 in the research provides a comprehensive breakdown, mapping out the intricate interplay between the main themes and their respective subthemes. This tabular representation aids in tracing the thematic journey from discrete concepts to broader one, elucidating the complex tapestry of undergraduate perspectives.

Table 4.15 Scope of subthemes and Main Themes

Main Themes	Sub Themes		Initial Themes	
	NN01 Perceived	nn01	Internet Education Technology	
	Usefulness	nn02	Save Time Costs	
		nn03	Immersive Experience	
	NN02 Perceived	nn04	Related Learning Technologies	
Domantian of	Ease of Use	nn05	Easy To Operate	
Perception of Factors	NN03 Perceived	nn06	Flexible Arrangements	
ractors	Convenience	nn07	Not Limited by Time and Space	
	NN04 Effort	nn08	Discipline Expectations	
	Expectancy	nn09	Learning Expectations	
	NN05 Social	nn10	Social Communication	
	Influence	nn11	Technology Development	
200	NN06 Enhancing	nn12	Targeted Learning	
273	Academic Academic	nn13	Breakthrough Learning	
Attitude Towards	Achievement		Difficulties	
Use	Achievement PE/Svan	nn14	Elevate Learning	
Use	NN07 in line with	nn15	Learning Efficiency	
	development	nn16	Across Time and Space	
	characteristics	nn17	Methods Of Practice	
	NN08 Enhancement Suggestions	nn18	Effort to Promote	
Behavioral Intention		nn19	Improving Classroom Dynamics	
		nn20	Focus On Classroom Discipline	
	NN09	nn21	Promotion of the Learning Model	
	Recommendation	nn22	Sharing Related Software with	
	for others	111122	others	

In the conducted thematic analysis, the study unearthed three pivotal themes that underpin the factors influencing English undergraduates' intentions to participate in hybrid education. These themes, interwoven yet distinct, are 'Factor Perceptions,' 'Attitude Towards Use,' and 'Behavioral Intentions.' Factor Perceptions: Delving into the undergraduates' beliefs and assessments, this theme surfaced five key dimensions that mold their view on hybrid education. These dimensions encompass Perceived Usefulness, Perceived Ease of Use, Perceived Convenience, Effort Expectancy, and Social Influence. Such perceptions were often anchored in practical aspects such as internet education technology, time and cost efficiencies, and the alignment with current learning technologies. Attitude Towards Use: Shaped heavily by the foundational beliefs established in the 'Factor Perceptions' theme, this theme resonated with the respondents' attitudes. Six sub-themes emerged, highlighting attitudes such as viewing hybrid teaching as a means to boost academic results or aligning with students' developmental traits. Notable sub-themes included the belief in targeted learning, overcoming learning hurdles, and enhancing overall learning. Behavioral Intentions: This theme pivoted around action – how these English major undergraduates translate their attitudes into actionable steps. Two prominent subthemes arose: the students' drive to advocate for bolstering hybrid education and their intentions to recommend its use to their peers. Within these sub-themes, five further dimensions were discerned, focusing on areas like amplifying the education process, teaching efficiency, classroom discipline, promoting varied learning modes, and software tool sharing.

Interconnections of Themes: The landscape painted by the themes manifests a holistic narrative, beginning with the undergraduates' fundamental beliefs and culminating in their intentions. The interconnectedness of the themes underscores the cascade effect: 'Factor Perceptions' shape the 'Attitude Towards Use,' which, in turn, influences 'Behavioral Intentions.' Specifically, the 'Factor Perceptions' theme encapsulates the myriad of beliefs and judgments that undergraduates hold regarding hybrid education. Positive perceptions of hybrid education's tools and methodologies act as catalysts, spurring positive attitudes. The subsequent 'Attitude Towards Use' theme builds on these foundational beliefs. If students deem hybrid education

beneficial, they subsequently view it as a mechanism to amplify their academic prowess, facilitate targeted learning, and circumvent conventional learning barriers. The final theme, 'Behavioral Intentions,' manifests these attitudes into tangible actions. Positive attitudes kindle a strong intent to not only engage with hybrid education but also to champion its virtues to peers.

Collectively, these themes craft a comprehensive tapestry detailing the cognitive journey of English major undergraduates. The analysis begins with their primary beliefs, transitions to specific attitudes, and ultimately culminates in definitive intentions to immerse in hybrid education. The study accentuates the need to cultivate favorable perceptions from the onset, setting the tone for subsequent attitudes and actions.

4.6 Conclusion

In the explanatory sequential mixed-method research on "The Relationship of Factors Influencing Behavioral Intention to Participate in Hybrid Education of Undergraduate Students Majoring in English in Universities," both quantitative and qualitative approaches were implemented. The research commenced with a quantitative phase, where confirmatory factor analysis (CFA) and structural equation modeling (SEM) were employed, followed by a qualitative phase grounded based on thematic analysis.

Upon scrutinizing the outcomes of both phases, it became evident that the qualitative findings echoed and substantiated the quantitative results. The qualitative data, derived from thematic analysis, offered a deeper understanding, and provided nuanced insights into the Behavioral Intentions of undergraduate students majoring in English to participate in hybrid education. This qualitative phase successfully delineated the intricate relationships between factor perceptions, attitudes towards use, and Behavioral Intentions. These revelations were consistent with the quantitative findings where specific hypotheses related to Perceived Ease of Use, Perceived

Usefulness, Perceived Convenience, Effort Expectancy, and Social Influence were established.

The qualitative findings affirmed the 1st hypothesis that Perceived Ease of Use indirectly affected Behavioral Intention, mediated by attitudes towards use. Through thematic analysis, the prominence of 'user-friendliness' emerged, indicating students' preference for systems they find easy to navigate. Similarly, the 2nd hypothesis about Perceived Usefulness influencing Behavioral Intention via Attitude towards Use was substantiated in the qualitative results. Themes related to the benefits and relevance of hybrid education were prominent in student narratives. In line with the 3rd hypothesis, thematic analysis also highlighted the significance of Perceived Convenience. Themes revolving around the adaptability and flexibility of hybrid education were prevalent, indicating its influence on students' attitudes and intentions. Themes emerging from the analysis aligned with the 4th hypothesis regarding the strong relationship between Effort Expectancy and Behavioral Intention. Students' willingness to invest effort in hybrid education and their participation intentions were apparent through these themes. Lastly, the qualitative data supported the 5th hypothesis that emphasized the relationship between Social Influence and Behavioral Intention. Themes about peer opinions and societal perceptions were evident, showcasing their influence on students' decisions regarding hybrid education. In sum, the qualitative phase, based on thematic analysis, not only confirmed but also enriched the understanding of the quantitative findings. It offered a comprehensive perspective, ensuring a thorough and detailed analysis of the factors influencing the Behavioral Intention of undergraduate students majoring in English to participate in hybrid education.

CHAPTER 5

DISCUSSIONS AND CONCLUSION

In this chapter, we discuss the findings of the study. The results highlight the significant impact of perceived usefulness, perceived convenience, perceived ease of use, social influence, and effort expectancy on students' attitudes and intentions towards hybrid education. We recommend that policymakers and educators consider these factors when designing and implementing hybrid learning courses, with a focus on enhancing ease of use, maximizing usefulness, optimizing convenience, fostering positive attitudes, and continuously monitoring and evaluating the effectiveness of hybrid education. By addressing these factors, we can create a supportive and engaging learning environment that promotes active participation and positive learning outcomes. Future research should explore these factors in diverse contexts and further investigate the evolving landscape of hybrid education.

5.1 Discussion

While the objectives of the study were to explore the factors that influenced behavior intentions of undergraduate students majoring in English to participate in hybrid education in Chengdu Universities, it appeared that all the five hypotheses were supported:

Hypothesis 1: Perceived ease of use has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 2: Perceived usefulness has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 3: Perceived convenience has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 4: There is a significant causal relationship between

effort expectancy and behavioral intention.

Hypothesis 5: There is a significant causal relationship between social influence and behavioral intention.

While all the five hypotheses were supported, the behavioral intention of undergraduate students majoring in English to participate in hybrid education was significantly influenced, by Perceived Usefulness, Perceived Convenience, and Perceived Ease of Use, respectively, via Attitude toward Use as a mediator, significantly in which Attitude toward Use, Social Influence and Effort Expectancy significantly effected Behavior Intention directly. As such, in the following section, the discussion of the results would be based upon a causal relationship of variables stated in the hypotheses in accordance with their significant levels found, from the most to the least, in the model.

First, it was reported that Perceived Usefulness turned out to be the most significant factor influencing Behavioral Intention of undergraduate students majoring in English in Chengdu universities with Attitude Towards Use as a mediator. Perceived Usefulness is a factor that encourages individuals' perception of the utility of newly adopted technology to be useful (Tambun et al., 2020) with its help in achieving objectives and feeling of utilizing a certain system to improve professional and/or academic performance (Abraham et al., 2020). In this study, attitude towards use, was defined as the attitude of a psychological intention in accepting or rejecting to utilize a certain technological system in that it reflects both the preference of taking or not taking the technique and a primary point of judgment whether the students would employ the hybrid educational technology as a good and wise decision during their studying process. (Bahjat, 2018; Celik & Yesilyurt, 2019). Putting together, it could be explained that the students with highly positive attitudes towards the use of hybrid education would find a new educational technology highly useful (Huang et al., 2020; Sukendro et al., 2020; Sun & Gao, 2020; Teo et al., 2019). In other words, the more students found hybrid education to be positively useful, the greater experience in a new kind of teaching and learning setting would flourish (Shi et al., 2020; Yang et al., 2020). In the case of undergraduate students majoring in English in universities in Chengdu, similarly, the more they exposed to hybrid learning system, the more they perceived it as useful in not only developing their practical skills in digital literacy (Kubota & Takeda, 2021), but also in developing skills of learning English effectively through both online and offline (Mart, 2018). Consequently, it is believed that Perceived Usefulness could be the most influential factor to facilitate and enhances the learning experience of not only undergraduate students majoring in English but also any major of students in boosting their intention to accept the target system successfully (Shahzad et al., 2021).

Second, it was found that Perceived Convenience with Attitude towards Use as a mediator was the second most significant factor influencing behavioral intention. Perceived Convenience refers to the user's capacity to access technology at any time or location with a way in which a system or service is convenient (Malik et al., 2021). Students with high levels of convenience in accessing their course materials tended to express positive attitudes towards hybrid education more than the students who experienced difficulty in learning through hybrid teaching and learning Sharma and Verma (2022). Similarly, Nguyen and Tran (2023) highlighted that convenience factors, such as user-friendly interfaces and responsive design, played a pivotal role in fostering positive attitudes. While Perceived Convenience positively and significantly affected Attitudes towards Use of the hybrid learning mode, that the undergraduate students majoring in English in Chengdu universities had reported to perceive a high level of convenience towards time, place, and execution during participation so that they became positive in accepting, choosing, and adopting this education situation (Chang et al., 2017; Revythi & Tselios, 2019). Similarly, as perceived convenience had positive effect on continuance of intention to use hybrid educational learning models, it helped facilitate effective learning engagement with high levels of collaboration and participation among the students involved (Li et al., 2021; Mailizar et al., 2021).

Third, as it was found that Perceived Ease of Use was the third most important factor on Behavioral Intention as a number of research demonstrated that Perceived Ease of Use exerted the positive and active effect on Attitude towards Use of the specific technology in educational situation (Huang & Liaw, 2018; Salloum &

Shaalan, 2018; Teo et al., 2019; Turnbull et al., 2021). As Bao (2020), Nagy (2018), Setyawati (2020), Sun and Gao (2020) argued that perceived ease of use influenced students' psychological intentions towards their learning system whether it is difficult to handle or easy to be used. This finding is also consistent with Li et al. (2021) and Chen et al. (2022) who argued that when students found the platform straightforward and manageable, they could focus more on content assimilation rather than grappling with system complexities. In a situation of undergraduate students majoring in English, it could be explained that English major students must be able to do all kinds of four skills in listening, speaking, reading, and writing creatively and critically, as such, they tended to seamlessly integrating their skills into their learning process without technological hindrances, especially user-friendly interfaces and responsive design, played a pivotal role in fostering positive attitudes (Nguyen & Tran, 2023).

Fourthly, the finding indicated that there is a significant causal relationship between Social Influence and Behavioral Intention as the fourth most influential variable. Social influence is considered as the level to which individual student detects of how essential it is for him or her to be convinced by others of whether he or she should accept technological utilization of online learning system (Venkatesh, et al., 2003). Interestingly, this factor happened to effect undergraduate students majoring in English in Chengdu the second least. This is probably because in response to the evolving landscape of education during and after the COVID-19 pandemic, the embrace of hybrid learning is not just an individual choice but a collective sentiment (Mahande & Malago, 2019). While social influence is likewise an extremely important factor in determining students' psychological intentions towards a learning system and emphasizes that the adoption of hybrid learning is not just an individual choice but is influenced by the collective perspectives and endorsements within their academic and societal circles (Nuttavuthisit & Thøgersen, 2017), regarding their majors of study, those students could not deny participating in hybrid education.

The discrepancy between the emphasis on peer interactivity in traditional English language classrooms (Canale & Swain, 1980), and the study's finding that Social Influence is the second least influential factor can be attributed to the evolving

nature of education in hybrid environments (McCarthy, 2017). In hybrid learning, students have more exposure to technology and individualized learning, potentially reducing the immediate impact of peer influence. Additionally, students majoring in English, like those in other fields, may consider a combination of individual preferences, external factors, and societal trends when adopting hybrid education (Mahande & Malago, 2019). This implies that while peer interaction remains important in English language learning, it is not the sole determinant of students' choices in hybrid education.

Fifthly, a positive and significant causal relationship between Effort Expectancy and Behavioral Intention was confirmed, with Effort Expectancy identified as the least influential latent variable in this study. While Effort expectancy in this study means students' levels of ease and effectiveness in workably using, adopting, and employing technology in hybrid learning, it could be explained by the work of Anabel and Simanjuntak (2022) that the undergraduate students majoring in English in universities in Chengdu had less difficulty in adjusting themselves in hybrid learning. This is consistent with the studies by Chen and Foung (2020) and Istiqomah (2019) in that the Effort Expectancy became less influential with English major students when it comes to hybrid learning situation, this is because English major students tend to be enthusiastic in improving their language skills in all kinds of leaning situations. Thus, either online or offline, alongside with rich online language resources within hybrid education that (Al Murshidi, 2019), their desire was to improve their language proficiency, and this turned out to be a significant drive in their intention to actively participate in hybrid education. It appeared that undergraduate students majoring in English in universities in Chengdu did not need to use any complicated technological platforms in submitting their assignments only for the effort in engaging in interactive participation, hence, their Effort Expectancy would not be significantly high (Bardaker, 2019; Mahande & Malago, 2019; Ogunsola & Olojo, 2021).

5.2 Limitation and Future Research

Despite understanding the relationship of factors influencing behavioral intention of undergraduate students majoring in English to participate in hybrid education, challenges persist in comprehensively leveraging this knowledge for policy-making and practical implementation in educational settings. While the relation of factors impacting the behavioral intention to engage in a hybrid education is well understood, problems exist on how fully to use this knowledge for policy formulation and practical practice in educational environment. Future research may include the exploration of longitudinal impacts of the factors on hybrid education and the decoding of intricate interactions among various determinants of students' attitudes and perceptions across diverse socio-economic and cultural contexts.

Since this study focused solely on undergraduate students majoring in English in universities in Chengdu, which might not represent the diverse academic disciplines and varied student attitudes towards hybrid education. The sample might have geographical, cultural, or institutional limits, given that students from different regions or universities might perceive hybrid education differently. Additional areas for future investigation might concern the long-term effects of the variables on hybrid education, as well as the interpretation of complex relationships between numerous determiners of different student attitudes and beliefs in regard to different social backgrounds and cultures. By addressing these limitations and implementing the recommendations, future research can present a well-rounded and comprehensive exploration into the factors that define and influence student engagement and participation in hybrid education models.

5.3 Recommendation

This study identifies the influencing factors on the behavioral intention of undergraduate students majoring in English in Chengdu to participate in hybrid education. Therefore, it is recommended that these factors be considered in subsequent policy making of hybrid learning courses for Undergraduate students majoring in English to obtain more effective teaching and learning outcomes. Developers of

educational and teaching programs for Undergraduate students majoring in English in colleges and universities should pay special attention to students' behavioral intentions in terms of actual teaching connotations. Quite a few studies by Holmes et al. (2023) and Slavin (2012) augured that behavioral intention is one of the extremely important influences in effective learning. Based on the results of the first three hypotheses, this study identified an interrelated mechanism of the constructs of Perceived Ease of Use, Perceived Usefulness, Perceived Convenience, Attitude towards Use, and Behavioral Intention. Thus, positive psychological outcomes for undergraduate students regarding the ease of use, usefulness and convenience of hybrid education will enhance students' positive attitudes toward using this education model and ultimately result in positive learning behaviors. When considering the interrelated mechanism, it is crucial for policy makers and professors to thoroughly deliberate on the optimal integration of the professional attributes of Undergraduate students majoring in English and the technical components of hybrid teaching operating systems. This integration aims to enhance the academic and practical quality of hybrid teaching design for undergraduate students majoring in English. Teaching should reduce students' unfamiliarity and resistance to the hybrid teaching platform and provide corresponding technical support so that students can easily operate the technical aspects of hybrid learning. In addition, the role of instructors in shaping students' perceptions and intention toward hybrid education should be further investigated in aspects like teaching style, technological proficiency, and instructional design.

What's more, based on the results of hypotheses 4 and 5 which determine the interrelated mechanism of the construct of Effort Expectancy, Social Influence, and Behavioral Intention of undergraduate students majoring in English to participate in hybrid education, teachers should motivate students to achieve satisfactory learning outcomes. First, teachers need to create a positive learning atmosphere for hybrid learning to encourage students to use the learning platform. Second, according to different learning task requirements and professional skill requirements, teachers should design effective learning programs for students in different academic years. Teaching requirements should be developed according to the characteristics of hybrid learning to encourage students to complete them by themselves and to put more effort into accomplishing their goals.

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5.4 Conclusion

The significant positive indirect effect of perceived ease of use, perceived usefulness, and perceived convenience on the behavioral intention to participate in hybrid education, mediated through attitude towards use, along with the positive significant effect of social influence and effort expectancy on behavioral intention, have been substantiated through extensive research and survey data collected from the undergraduate students majoring in English in Chengdu by this study. Recommendations, grounded in the findings on the varied determinants of behavioral intention towards hybrid education among undergraduate students majoring in English, pave the way towards a more inclusive, accessible, and effective hybrid learning environment. Implementing these strategies will likely foster a positive attitude towards hybrid learning and enhance students' willingness to participate and engage in such educational models:

5.4.1 Enhance perceived ease of use:

- 1) The university should invest in making the hybrid education platform more user-friendly.
- 2) The interface should be intuitive, and any technical difficulties should be addressed promptly through workshops, orientation sessions, and infographics.
- 3) Ensure that the technology and platforms utilized in hybrid education are user-friendly and provide clear instructions for navigation

5.4.2 Maximize Perceived Usefulness:

- 1) Create and promote engaging online content that clearly demonstrates the practicality and relevance of the hybrid education approach for undergraduate students majoring in English.
- 2) Encourage faculty to design courses that incorporate real-world applications and scenarios to highlight the usefulness of the knowledge and skills gained through hybrid learning.

3) Solicit regular feedback from students and faculty to make continuous improvements to the hybrid education programs.

5.4.3 Optimize Perceived Convenience:

- 1) Develop a flexible scheduling system that accommodates students' other commitments, such as part-time jobs or extracurricular activities.
- 2) Invest in high-quality, accessible technology to ensure seamless online interactions, including live video conferencing, discussion forums, and file sharing.
- 3) Provide a variety of assessment methods that allow students to demonstrate their understanding in ways that suit their preferences and convenience.

5.4.4 Foster Positive Attitudes Towards Use:

- 1) Create a culture of openness and adaptability by celebrating successful hybrid education experiences.
- 2) Encourage faculty to showcase the benefits of hybrid education through their teaching methods and classroom interactions.
- 3) Promote peer-to-peer support networks where students can share their positive experiences and insights regarding hybrid education.

5.4.5 Continuous Monitoring and Evaluation:

1) Implement regular assessments and surveys to gauge student and faculty satisfaction with hybrid education, making data-driven improvements as needed.

Collaborate with researchers and educational experts to stay updated on emerging trends and best practices in hybrid education. By implementing these strategies, we aim to empower undergraduate students majoring in English to actively participate in hybrid education, fostering a positive and effective learning environment. By addressing these limitations and implementing the recommendations, future research can present a well-rounded and comprehensive exploration into the factors that define and influence student engagement and participation in hybrid education models.

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Questionnaire

This questionnaire contains 2 parts:

Part 1: Respondent's demographic information

Part 2: 48 items of "The Relationship of Factors Influencing Behavioral Intention to Participate in Hybrid Education of Undergraduate Students Majoring in English in Universities in Chengdu. Your answers are valuable in terms of understanding the overall picture and situations pertaining this topic. Accordingly, the researcher would like to show great appreciation and gratitude for your valuable time in answering this questionnaire.

Part 1: Demographic Information

1.	Gende	or:
		Male
		Female
2.	Unive	rsities:
		Chengdu University (CDU)
		Sichuan Normal University (SNU)
		Sichuan University (SCU)
3.	Level	of the study:
		of the study: Freshman Rangsit Rangsit
		Sophomore
		Junior
		Senior
4.	Age:	
		18 to 19
		20 to 21
		22 to 23
		24 to 25
		24 to 25

Part 2: The Relationship of Factors Influencing Behavioral Intention to Participate in Hybrid Education of Undergraduate Students Majoring in English in Universities in Chengdu

Please answer the following question by ticking $\sqrt{}$ in the block which are given according to the degree to which you agree as follows:

1 = Strongly Disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

F		rs Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral Neutral	Agree	Strongly Agree
1.		cipating in hybrid teaching and			0		
	learn	ning (or both online and onsite)		110	7		
	is no	t a problem for me.	240	Sit			
2.	I thin	nk to participate in hybrid 7	Kan	9			
	teach	ning and learning for English					
	majo	or courses is suitable for me.					
3.	I thir	nk to participate in hybrid					
	teacl	ning and learning for English					
	majo	or courses is understandable					
	and e	efficient for me.					
4.	It is	acceptable for me to study					
	Engl	ish major courses through					
	hybr	id teaching and learning.					

F	'actors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5.	Overall, participating in hybrid					
	teaching and learning for English					
	major courses turned out to be easy					
	for me.					
6.	Overall, I have no problem					
	interacting with others through any					
	platforms in hybrid teaching and		7			
	learning.					
7.	After all, I become skillful in using	4/4/				
	technological tools to fulfill my					
	tasks while participating in hybrid					
	teaching and learning for English					
	major courses.			sity		
8.	It is necessary to use any online			5		
	platform or system to fulfill my	BB	110	7		
	tasks while participating in hybrid	Dani	sit			
	teaching and learning.	Kan	5			
9.	I perceive that any online platform					
	system can help me studying					
	effectively, especially, in hybrid					
	teaching and learning.					
10	. The online platform systems I am					
	using can help improve my					
	participating in hybrid teaching and					
L	learning.					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. The online platform systems I am					
using can boost my learning					
productivity while studying English					
major courses in hybrid teaching					
and learning.					
12. The online platform systems I am	10				
using can promote my learning		1			
performance while studying					
English major courses in hybrid	1//				
teaching and learning.					
13. The online platform systems I am					
using can enable me to achieve my					
goals while studying my English			Sit.		
major course.			0		
14. I have no problem using	BB	110	1		
technological tools while	Dan	sit			
participating in hybrid teaching and	Ran	9			
learning for my English major					
courses.					
15. I am able to use different types of					
technology while participating in					
hybrid teaching and learning for my					
English major courses.					
16. It is convenient for me to use any					
technological tools or platforms					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
while participating in hybrid					
teaching and learning for my					
English major courses.					
17. It is convenient for me to learn of					
how to use different types of					
technological tools or platforms	12				
while participating in hybrid					
teaching and learning for my					
English major courses.					
18. It is convenient for me to use any					
tools or platforms anywhere while					
participating in hybrid teaching and					
learning for my English major			ity		
courses			5		
19. It is convenient for me to	N P	110			
implement different types of	240	sit			
technological tools or platforms	Kan	9			
while participating in hybrid					
teaching and learning for my					
English major courses.					
20. I feel convenient and skillful to					
complete my tasks during					
participating in hybrid teaching and					
learning anytime and anywhere					
while participating in hybrid					
teaching and learning for my					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
English major courses.					
21. I can accept any technological tool					
or platform system with no					
difficulty while participating in					
hybrid teaching and learning for my					
English major courses.					
22. Any technological tool or platform		>			
system I choose in participating in					
hybrid teaching and learning for my					
English major courses is a wise					
choice.					
23. I am positive towards all kinds of					
technological tool or platform			sity		
system in hybrid teaching and			5		
learning for my English major	R B	110	1		
courses.	Dani	Jsit C			
24. I am happy in using different types	Kan	9			
of technological tools or platform					
systems while participating in					
hybrid teaching and learning for my					
English major courses.					
25. I have no preferences in using					
specific technological tools or					
platform systems while					
participating in hybrid teaching and					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
learning for my English major					
courses.					
26. I have a good judgement of how to					
implement different types of					
technological tools while	K .				
participating in hybrid teaching and					
learning for my English major					
courses.					
27. I feel satisfied with my					
performance in utilizing different					
types of technological tools while					
participating in hybrid teaching and	111.		1		
learning for my English major			1/5		
courses.			5		
28. Practically, I have am able to adopt		Ji's	0.00		
and employ technology while	Ran	721			
participating in hybrid teaching and					
learning.					
29. It is easy for me to utilize any of the					
specific educational system while					
participating in hybrid teaching and					
learning.					
30. I am capable of using different					
types of online learning					
technologies while participating in					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
hybrid teaching and learning for my					
English major courses.					
31. It is rewarding to put an effort into					
my performance while participating					
in hybrid teaching and learning for	~ .				
my English major courses.					
32. I perceived no strain in operating	2)))				
online learning technologies while					
participating in hybrid teaching and					
learning for my English major					
courses.					
33. I am at ease in using, adopting, and	1110		7 >		
employing online technologies			2/5		
while participating in hybrid			2		
teaching and learning for my		it Ur			
English major courses	Ran	3516			
34. Overall, I feel effective in using,					
adopting, and employing online					
technologies while participating in					
hybrid teaching and learning for my					
English major courses.					
35. I am convinced that online					
technologies are essential in hybrid					
teaching and learning.					
<u> </u>				•	

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36. It is clear that utilization of any					
online technological tools or					
systems is salient to participate in					
hybrid teaching and learning.					
37. All the people I know show me of					
how important it is to effectively	10				
employ online technology in hybrid					
teaching and learning.			200		
38. In any circumstances, I must be	1//				
capable of using online technology					
while participating in hybrid					
teaching and learning for my					
English major courses.			ity		
39. In accordance with other			0		
classmates, I must be able to	N P	110	1		
participate in hybrid teaching and	Dan	sit			
learning for my English major	Kan	9			
courses.					
40. I conform with others in using					
particular online technologies while					
participating in hybrid teaching and					
learning for my English major					
courses.					
41. Finally, I am persuaded that it is a					
wise choice to be able to participate					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
well in hybrid teaching and learning					
for my English major courses.					
42. Genearally, I am happy in					
participating in hybrid teaching and					
learning.	Ζ,				
43. As an undergraduate English major					
student, I really enjoy studying					
English major courses through					
hybrid teaching and learning.					
44. As an undergraduate English major					
student, I become confident in					
participating in hybrid teaching and	1100		7.		
learning for my English major			2/15		
courses.			5		
45. As an undergraduate English major		it Ut			
student, from now on, I will not	Ran	3510			
hesitate in participating in hybrid					
teaching and learning of any kind.					
46. As an undergraduate English major					
student, I feel rewarded in					
participating in hybrid teaching					
and learning either now or in the					
future.					

Factors Influencing the Students' Behavioral Intention	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
47. As an undergraduate English major					
student, I will continue to					
participating in hybrid teaching					
and learning either now or in the					
future for my major English					
courses.	18				
48. Overall, as an undergraduate					
English major student, I see the full					
benefits of participating in hybrid					
teaching and learning for my major					
English courses and will					
recommend others to do so.					

Ly Jae Pael Sy Rangsit University



Please note that the primary inquiries are enumerated as follows. Nevertheless, it should be noted that the interview format being used is a semi-structured interview, which implies that more probing questions may be posed to the interviewee in response to their answers.

Opening questions

(After interviewer finish the self-introduction and an explanation of the research objectives):

- Please tell me about the hybrid education in your university.
- _ What do you know about the hybrid education?

Key questions

According to your learning experience:

- _ How would you describe the acceptance and adoption level hybrid education in your university?
- _ How would you describe the challenges facing students to participate in the hybrid education?
- _ what are the advantages or drawbacks of hybrid education you have found while participate in hybrid education?
- _ Do you think the model of hybrid education is in line with the characteristics of your major as well as the direction of development? Or is hybrid education suitable for undergraduate students majoring in English?

Concluding questions

_ What do you think your university needs to improve to increase students' participation in the hybrid education? Would you like to continue to study your courses through hybrid education in the future? Would you recommend it to others and why?

APPENDIX C INDEX OF ITEM OBJECTIVE CONGRUENCE: IOC



An IOC for

A Survey Research

Topic: The Relationship of Factors Influencing behavioral Intention to Participate in HybridEducation of Undergraduate Students Majoring in English in Universities in Chengdu

Dear Expert:

This research is to fulfill the dissertation for Doctor of Education Program in Educational Studies, Suryadhep Techers College, Rangsit University. Its topic is "The Relationship of Factors Influencing behavioural Intention to Participate in Hybrid Education of Undergraduate Students Majoring in English in Universities in Chengdu".

The objectives of the study are:

- 1. To explore the factors influencing behavioral intention to participate in hybrid education (both online and onsite) of undergraduate students majoring in English in the universities in Chengdu;
- 2. To determine the causal relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu; and
- 3. To interview the undergraduate students majoring in English in a focus group in order to confirm the model of the relationship of factors influencing behavioral intention to participate in hybrid education in universities in Chengdu.

This questionnaire is a part of a quantitative method as to gain the levels of perceptions and attitudes to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu. After that the information obtained, it will be used to write up for the interview questions as to confirm the model of the relationship of factors influencing their behavioral intention while participating in hybrid education.

Your answers will be valuable in terms of validating the information containing in this questionnaire which will be beneficial for understanding the overall picture and situations pertaining this topic. Accordingly, the researcher would like to show great appreciation and gratitude for your valuable time and comments for the validity of this research instrument.

Accordingly, the researcher would like to show great appreciation and gratitude for your valuable time and comments for the validity of this research instrument.

Xiaoyi Zou

An IOC for A Survey Research Instructions:

Congruent = +1

Questionable = 0

Incongruent = -1

This questionnaire contains 2 parts:

Part 1: Respondent's demographic information

Part 2: 48 items of behavioral intention to participate in Hybrid Education of undergraduate studentsmajoring in English in universities in Chengdu.

Part 1: Demographic Information

ITMES	+1	0	-1
1. Gender:			
□ Male			
□ Female			
2. Universities:			
□ Chengdu University (CDU)			
□ Sichuan Normal University (SNU)			
□ Sichuan University (SCU)			
3. Level of the study:			
□ Freshman			
□ Sophomore			
□ Junior			
□ Senior			
4. Level of the study:			
□ Freshman			
□ Sophomore			
□ Junior 🐾			
□ Senior			
5. Age: The state of the state			
□ 18 to 19			
□ 20 to 21			
□ 22 to 23			
□ 24 to 25			

Part 2: The Relationship of Factors Influencing Behavioral Intention to Participate in Hybrid Education of Undergraduate Students Majoring in English in Universities in Chengdu

ITMES	+1	0	-1
Perceived Ease of Use			
1. I have no difficulty studying in online and onsite teaching			
and learning.			
2. I think hybrid teaching and learning is suitable for me.			
3. It is efficient for me to study and participate in hybrid			
teaching andlearning			
4. It is not a burden for me to study English major courses			
throughhybrid teaching and learning.			
5. I think that studying English major courses through hybrid			
teachingand learning turned out to be easy, understandable,			
and effective.			
6. Overall, I have no problem studying English major courses			
and interacting with others through any platforms in hybrid			
teaching andlearning.			
7. Overall, I become more skillful in using particular			
technological tools to fulfill any tasks while studying			
English major courses throughhybrid teaching and learning.			
Perceived Usefulness			
8. I think that any online platform system is useful in			
teaching andlearning both online and onsite.			
9. I perceive that any online platform system can help me			
studyingeffectively even in hybrid teaching and learning.			
10. I perceive that the online platform systems I am using can			
help improve my studying English major courses through			
hybrid teachingand learning.			

ITMES	+1	0	-1
11. I perceive that the online platform systems I am using can			
boost my learning productivity while studying English			
major courses through hybrid teaching and learning.			
12. I perceive that the online platform systems I am using can			
promote my learning performance while studying English			
major courses through hybrid teaching and learning.			
13. I perceive that the online platform systems I am using			
will enable me to achieve my goals in finishing up with			
my English major course effectively.			
Perceived Convenience			
14. I having no problem using technological tool in taking			
Englishmajor courses both online and onsite.			
15. I have an ability to use different types of technology in			
studying English major courses through hybrid teaching			
and learning.			
16. It is convenient for me to use any technological tools or			
platforms any time while studying English major courses			
through hybrid teachingand learning.			
17. It is convenient for me to learn of how to use different types			
of technological tools or platforms while studying English			
major courses through hybrid teaching and learning.			
18. It is convenient for me anywhere to use different types of			
technological tools or platforms while studying English			
major coursesthrough hybrid teaching and learning.			
19. It is convenient for me to implement different types of			
technological tools or platforms while studying English			
major courses through hybridteaching and learning.			
20. I feel convenient and skillful, as an English major student,			
to complete my tasks during participating in hybrid			
teaching and learninganytime and anywhere.			

ITMES	+1	0	-1
Attitude Towards Use			
21. I can accept to utilize technological tool and platform			
system with no difficulty in taking English major courses			
both online and onsite.			
22. I think that any technological tool or platform system in			
hybrid teaching and learning I choose to use is a wise			
decision.			
23. I am positive towards any kinds of technological tool or			
platform system while participating in hybrid teaching and			
learning.			
24. I am happy in using different types of technological tools or			
platforms while learning performance while studying			
English major courses through hybrid teaching and learning.			
25. I prefer to use certain kinds of technological tools while			
learning while studying English major courses through			
hybrid teaching and learning.			
26. I feel that I have a good judgement in implementing			
different types of technological tools in any platform			
systems while studying English major courses through			
hybrid teaching and learning.			
27. I feel satisfied with my performance in utilization of			
different types of technological tools in any platform			
system while studying English major courses through			
hybrid teaching and learning.			
Effort Expectancy			
28. Practically, I can use, adopt, and employ technology in an			
easy way while participating in hybrid teaching and learning.			
29. It is easy for me to utilize any of the specific educational			
systemwhile participating in hybrid teaching and learning.			

ITMES	+1	0	-1
30. I am capable of using different types of online learning			
technologies while studying English major courses through			
hybrid teaching and learning.			
31. It is rewarding for me to put an effort into my performance			
while studying English major courses through hybrid			
teaching and learning.			
32. I perceived no strain in operating online learning			
technologies while studying English major courses through			
hybrid teaching and learning.			
33. I am at ease using, adopting, and employing online	_		
technologies while studying English major courses through			
hybrid teaching and learning.			
34. I am effective in using, adopting, and employing online	_		
technologies while studying English major courses			
through hybridteaching and learning.			
Social Influence			
35. I am convinced that online technologies are essential in			
participating in hybrid teaching and learning.			
36. I am told that technological utilization of online learning			
system isimportant in hybrid teaching and learning.			
37. All the people I know always say I must know of how to	_		
employonline technology in hybrid teaching and learning.			
38. I am pressured by my surroundings that I must be capable			
of using online technology while participating in hybrid			
teaching and learning.			
39. In accordance with other classmates, I must be able to			
participate in studying English major courses through			
hybrid teaching and learning.			
40. I conform with others in the process of utilizing online			
technologies in order to participate in studying English			

ITMES	+1	0	-1
major courses through hybridteaching and learning.			
41. I am convinced with a wise choice of what to do in			
accordance with others in the process of participating in			
studying English major courses through hybrid teaching			
and learning.			
Behavioral Intention			
42. Genearally, I am happy in participating in hybrid teaching			
andlearning.			
43. I really enjoy studying English major courses through			
hybridteaching and learning.			
44. I become confident in participating in studying English			
majorcourses through hybrid teaching and learning.			
45. I intend to participate in studying English major courses			
throughhybrid teaching and learning in the future.			
46. I feel rewarded to participate in studying English major			
coursesthrough hybrid teaching and learning in the future.			
47. I will continue to participate in studying English major			
coursesthrough hybrid teaching and learning in the future.			
48. I will recommend others to participate in studying English	-		
major courses through hybrid teaching and learning in the future.			

Content Validity was conducted by 3 experts. The result shows that the content validities for all the two sections were 1 and 1 (Respondent's demographic information and items of behavioral intention to participate in Hybrid Education of undergraduate students majoring in English in universities in Chengdu respectively). The overall test item-objective congruence (IOC) was 1 which means they were acceptably congruent with the objective of the study. More details showed in Table 1.

Table 1 Content Validity by 3 experts

555	Item – Objective congruence
	(IOC)
Demographic Information	1
Items of behavioral intention	
to participate in Hybrid Education of	
undergraduate students majoring in	1
English in universities in Chengdu	
Perceived Ease of Use	Take 1
Perceived Usefulness	lgsit Univer
Perceived Convenience Roll	1
Attitude Towards Use	1
Effort Expectancy	1
Social Influence	1
Behavioral Intention	1

BIOGRAPHY

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