

# Factors Affecting Chongqing Students' Behavioral Intention to Use WeChat Application for Effective English-Speaking Learning

## ปัจจัยที่มีผลกระทบกับพฤติกรรมการใช้งานแอปพลิเคชัน WeChat ของนักศึกษาในเมืองฉงชิ่ง เพื่อการเรียนพูดภาษาอังกฤษอย่างมีประสิทธิภาพ

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### ABSTRACT

This research paper examines factors contributed examines factors that contributed to the behavioral intentions on the WeChat application to strengthen the English-speaking learning of first-year students in higher vocational colleges in Chongqing, China. The conceptual framework presented casual association among Service Quality (SQ), Perceived Value (PV), Satisfaction (S), Convenience (C), Attitude (A), and Behavioral Intentions (BI). The researcher employed a quantitative method (n=550). Multistage sampling was applied into three stages. The Structural Equation Model (SEM) was applied in data analysis for reliability, validity of the constructs and hypothesis testing (model fit). The results indicated that convenience, perceived value, and service quality significantly impact satisfaction, respectively. Moreover, the behavioral intention was significantly impacted by attitude, satisfaction, and perceived value, respectively. This research confirmed the contributors to behavioral intentions in the English-speaking learning context, offering beneficial factors to English language teachers to attracting and satisfying their students.

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**Keywords:** Service Quality; Perceived Value; Attitude; Satisfaction; Behavioral Intention

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### บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อตรวจสอบปัจจัยที่ส่งผลกระทบต่อความตั้งใจใช้แอปพลิเคชันวีแชท (WeChat) เพื่อเสริมสร้างการเรียนรู้การพูดภาษาอังกฤษของนักศึกษาชั้นปีที่หนึ่งในวิทยาลัยอาชีวศึกษาในเมืองฉงชิ่ง สาธารณรัฐประชาชนจีน ปัจจัยดังกล่าวประกอบด้วยคุณภาพการบริการ (SQ) การรับรู้คุณค่า (PV) ความพึงพอใจ (S) ความสะดวก (C) ทศนคติ (A) และแรงจูงใจเชิงพฤติกรรม (BI) ผู้วิจัยใช้การศึกษาเชิงปริมาณ (n=550) การสุ่มตัวอย่างแบบหลายขั้นตอน (Multi-Stage Sampling) นำมาใช้ในการเก็บข้อมูลสามขั้นตอน ผู้วิจัยวิเคราะห์ข้อมูลแบบจำลองสมการโครงสร้าง (SEM) เพื่อหาความน่าเชื่อถือ (Reliability) และความถูกต้องของทางโครงสร้างของเครื่องมือ (Validity) และทดสอบสมมติฐาน (ความเหมาะสมของแบบจำลอง-Model Fit) ผลการวิจัยพบว่า ความสะดวก การรับรู้คุณค่า และคุณภาพการบริการ มีผลกระทบอย่างมีนัยสำคัญต่อความพึงพอใจ ตามลำดับ นอกจากนี้ทศนคติและความพึงพอใจมีผลกระทบต่อความตั้งใจเชิงพฤติกรรม อย่างมีนัยสำคัญ ตามลำดับ งานวิจัยนี้ยืนยันปัจจัยที่มีความสัมพันธ์กับความตั้งใจเชิงพฤติกรรมในบริบทด้านการเรียนพูดภาษาอังกฤษ อันเป็นประโยชน์ต่อผู้สอนภาษาอังกฤษในการสร้างแรงจูงใจและความพึงพอใจให้กับผู้เรียน

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**คำสำคัญ:** คุณภาพการบริการ; การรับรู้คุณค่า; ทศนคติ; ความพึงพอใจ; ความตั้งใจเชิงพฤติกรรม

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### Introduction

#### 1. Background of the Study

As for the increasing number of mobile devices, such as smartphones, tablet PC, and internet-connected devices, the technology of networks and smartphones have infiltrated all degrees of society. Therefore, many modern applications for communication via smartphones have been invented and favored by people, including WhatsApp Messenger, Facebook, and WeChat. However, due to some political reasons, WhatsApp Messenger and Facebook are disabled to

use in the mainland of China. WeChat has an exclusive privilege in market sharing. Considering the permeating of English-speaking learning, conducting WeChat is a learning platform to practice English pronunciation that meets the Chinese learners' needs in many ways.

WeChat in China is free of charge application that has supports more than 20 languages since it was launched in Guangzhou, China on 21<sup>st</sup> January 2011 by Tencent. It provides instant messaging services for smart devices. At present, the WeChat

application covers more than 200 countries and regions. Until January 2020, WeChat users' accounts had reached about 1,150 million all over the world (Zhaohui, 2020)

During the Coronavirus outbreak, Chinese college students have successfully continued to conduct learning processes during the pandemic to apply hybrid learning mode, including face-to-face and mobile learning in and out of class. WeChat is one of the best examples which changed higher vocational college students' way of learning English-speaking and was the most popular mobile learning application among higher vocational college students and instructors. WeChat predominates for its consistency, generality, amusement, fragmentation, low costs, high efficiency, repeatability, and synchronization (Wang, 2017). WeChat learning matched the growing demand for fragmented education, customized content, and individual learning styles. It was a creative teaching and learning methodology, various

from systematic curriculum learning without the constraint of time, space, and learning material (Wang & Wang, 2019).

## 2. Research Objective

The research aims to investigate the causes and consequences of student behavioral intentions. It can be explained by student satisfaction in the application of WeChat. Moreover, the link between service quality, perceived value, convenience, satisfaction, and attitude has been integrated to interpret the causes and consequences of student behavioral intentions.

## 3. Research Question

How is the relationship between service quality, perceived value, convenience, satisfaction, attitude, and behavioral intentions in the English proficiency of learners using WeChat context?

## 4. Conceptual Framework

The conceptual framework developed from previous studies is shown in Figure 1.

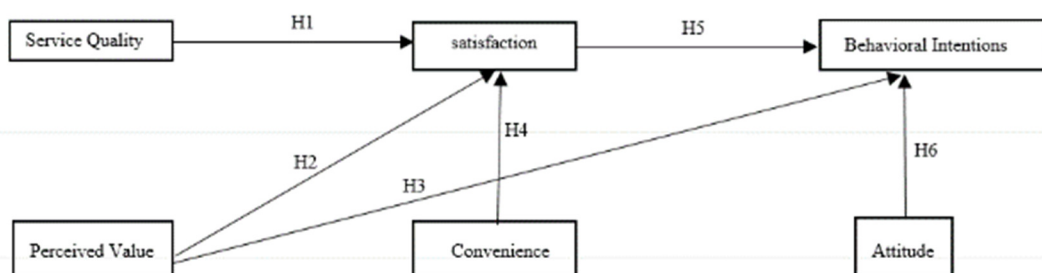


Figure 1 Conceptual Framework

#### 4. Significance of the Study

This research intends to examine the factors that contribute to behavioral intentions on WeChat application to strengthen English-speaking learning of first-year students in higher vocational colleges in Chongqing, China. Moreover, the study evaluates the relationship between each variable to explore these influencers affecting behavioral intentions.

#### Literature Review

##### 1. Service Quality

Carlson and O'Cass (2010) revealed that the service quality was a customers' general assessment and appraisal of the quality of the service provided by an organization. Furthermore, service quality was defined as clients' feelings and feedback on the service's experience provided by the organization that could be evaluated and assessed in certain forms (Dhisasmito & Kumar, 2020). Kitcharoen (2018) verified a relationship between system service quality and user satisfaction with the Learning Management System of Assumption University in Thailand. Therefore, this research claimed that:

H1: Service quality has a significant impact on satisfaction.

##### 2. Perceived Value

Perceived value is indicated as a

customer's recognition of benefit showing a situation in which customers accepted something terrible to have something good when they got accordingly after paying for something (Hoang, 2019). Chatterjee et al. (2018) pointed that perceived value positively correlated with satisfaction. The research done by Hoang (2019) confirmed a straight-through influence between perceived value and satisfaction. So, the researcher presents the following hypothesis:

H2: Perceived value has a significant impact on satisfaction.

##### 3. Satisfaction

Empirical research had defined satisfaction as the perception after the customer purchased a commodity or a service (Chatterjee et al., 2018). The previous study of Chatterjee et al. (2018) had signified that consumer satisfaction was significantly influenced by perceived service value, especially more considerable importance, for the sake of profits against compromise including money. Considering the empirical studies into the relationship between perceived value and behavioral intention in this research presents the following hypothesis:

H3: Perceived value has a significant impact on behavioral intention.

##### 4. Convenience

Thuy (2011) defined convenience, or service convenience as the customer's impression of the duration of time and attempted in purchasing and employing service. An empirical study done by Shahijan et al. (2018) pointed out that increasing satisfaction was deeply related to adding convenience, which also disclosed a significant bond connecting service convenience and overall satisfaction. And it has also been proved by Thuy (2011) that consumer satisfaction could be influenced significantly by service convenience. Thus, the researcher hypothesized:

H4: Convenience has a significant impact on satisfaction.

#### 5. Behavioral Intentions

Behavioral intentions attested to the purpose of establishing schemes to carry out or not carry out behavior hereafter (Calza et al., 2020). Behavioral intention signified the estimation of an individual's presumption to conduct a particular behavior, which revealed a person's longing to react to a specific act (Wang et al., 2018). Almost all the reviewed studies found that the behavioral intention had been significantly impacted by satisfaction (Mason & Moretti, 2015). Extant research showed that customer satisfaction was positively correlated with behavioral intentions (Carlson &

O'Cass, 2010). Thus, the following hypothesis was proposed:

H5: Satisfaction has a significant impact on behavioral intention.

#### 6. Attitude

Mpinganjira (2019) regarded attitude as a component of fascination in behavioral research that provided its advanced impact on behavior. Likewise, the attitude was universally evaluated to perceive the influence related to the faiths an individual possessed on the object (Sahi & Mahajan, 2014). Empirical studies conducted by Mpinganjira (2019) had confirmed that attitude concerning virtual health public had a significant impact on behavioral intention. Moreover, Miao (2015) indicated a medium positive association between attitudes and behavioral intention. Therefore, this research proposed to find this relationship:

H6: Attitude has a significant impact on behavioral intentions.

### Research Methodology

The researcher employed a quantitative technique with distributed the printed questionnaires and via WeChat application to the first-year students in selected top three higher vocational colleges in Chongqing, China. The completion of the

questionnaire was under supervision by the researcher to ensure the response and return rate. The data has been gathered and analyzed for factors that have essential influences on behavioral intentions among students. The questionnaire consists of three parts: screening questions, demographic characteristics and the constructs' measurements. The five-point Likert scale ranges from (1) is strongly disagree to (5) is strongly agree for the analysis of all six hypotheses. A pilot test for 30 respondents was tested after the expert rating of the index of item-objective congruence (IOC) granted by three experts. The IOC results came out that all items were reserved with an acceptable value at least 0.6 (Turner & Carlson, 2003).

The validity and internal consistency reliability were evaluated using Cronbach's Alpha. The results of the CA pilot test of 30 participants showed that all variables were passed at the acceptable value at 0.70 or higher per the criteria of Tavakol and Dennick (2011). After the reliability test, the questionnaire was distributed to participants, and 550 of the returned completed responses were used to analyze. The researcher analyzed the gathered data through SPSS 26.0 Version. Later, Confirmatory Factor Analysis (CFA) was applied to assess the convergence accuracy

and validation. The model fits measurement was estimated with the overall evaluation with given data to ensure the validity and reliability of the model. Lastly, the researcher used the Structural Equation Model (SEM) to test the relationship among variables.

### 1. Population and Sample Size

The target population is first-year students studying at three higher vocational colleges in Chongqing, China, and using WeChat for English-speaking learning. Kline (2011) revealed that the appropriate sample size is between 200-500 or more required for factor analysis, regression analysis, conjoint analysis, and structural equation modeling. The researcher distributed 600 questionnaires to the respondents, and 550 valid data were employed in data analysis.

### 2. Sampling Technique

Multistage sampling was applied into three stages. The first stage was judgmental sampling to choosing first-year students from the top three higher vocational colleges. The second stage was stratified random sampling and used to determine the sample size from each stratum. The last stage was convenience sampling to distribute offline and online questionnaires to the target group.

**Table 1:** Population and Sample Size

College Name	No. of First-year Students	Proportional Sample Size
Chongqing College of Finance Economics	5304	331
Chongqing Creation Vocational College	2153	134
Chongqing Vocational College of Intelligent Engineering	1366	85
<b>Total</b>	<b>8823</b>	<b>550</b>

Source: Created by the author

## Results and Discussion

### 1. Demographic Information

The respondents' demographics (n=550) show that most of the respondents are male (77.45%), and the age is between 18-25 years old (99.64%).

### 2. Confirmatory Factor Analysis (CFA)

CFA was applied in this study. All items in each variable are significant and constitute factor loading to test discriminant validity. The significance of factor loading of each item and satisfactory values represent the goodness of fit (Hair et al., 2010). CMIN = 2.126, GFI=0.925, AGFI=0.899, NFI=0.951, CFI=0.973, TLI=0.966, and RMSEA=0.045 which confirmed model fit in CFA testing. The construct reliability of this study is over 0.7, and factor loading is over 0.50 at a p-value

lower than 0.05 is acceptable, follows the recommendation of Tavakol & Dennick (2011).

The average variance extracted was greater than the cut-off points of 0.5 (Fornell & Larcker, 1981) as generalized in table 2. All evaluations are significant. The discriminant validity was evaluated by computing the square root of each AVE. Based on this study, the value of discriminant validity is larger than all factor correlations. The convergent validity and discriminant validity were confirmed as the value of this research shown in table 3 are greater than acceptable values. Therefore, convergent validity and discriminant validity are guaranteed. Moreover, these model measurement outcomes supported discriminant validity and validation to evaluate the validity of subsequent structural model estimation.

**Table 2:** Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Service Quality (SQ)	Rezaei et al. (2016)	4	0.921	0.694 – 0.814	0.840	0.569
Perceived Value (PV)	Jeong and Kim (2020)	4	0.934	0.804 – 0.843	0.897	0.658
Convenience (C)	Adekunle and Ejechi (2018)	4	0.898	0.749 – 0.841	0.863	0.612
Satisfaction (S)	Chih-Hung Wang (2012); Carlson and O'Cass (2010)	5	0.938	0.780 – 0.829	0.902	0.648
Attitude (A)	Carlson and O'Cass (2010)	5	0.942	0.765 – 0.831	0.900	0.644
Behavioral Intentions (BI)	Ma and Kaplanidou (2019)	6	0.954	0.719 – 0.813	0.890	0.618

Note: CR = Composite Reliability, AVE = Average Variance Extracted

**Table 3:** Discriminant Validity

	BI	PEOU	PU	ATU	SE	SI	EE
BI	0.758						
PEOU	0.311	0.795					
PU	0.419	0.320	0.813				
ATU	0.277	0.322	0.386	0.841			
SE	0.329	0.272	0.367	0.296	0.838		
SI	0.372	0.275	0.390	0.361	0.311	0.828	
EE	0.309	0.229	0.352	0.249	0.243	0.281	0.805

Note: The diagonally listed value is the AVE square roots of the variables

Source: Created by the author



### 3. Structural Equation Model (SEM)

Based on Hair et al. (2010), Structural Equation Model (SEM) certifies the casual relationship among variables in a presented model and comprises evaluation imprecision in the structure coefficient. The goodness of fit indices for the Structural Equation Model (SEM) is evaluated as

illustrated in Table 4. The calculation in SEMs and adjusting the model by applying SPSS AMOS version 26, the results of fit index were proposed good fit which are CMIN/DF = 2.970, GFI = 0.887, AGFI = 0.858, NFI = 0.927, CFI = 0.950, TLI = 0.941 and RMSEA = 0.060, based on the satisfactory values.

**Table 4:** Goodness of Fit for Structural Equation Model

Index	Acceptable values	Values
CMIN/DF	< 3 (Hair et al., 2010)	2.970
GFI	$\geq 0.85$ (Sica & Ghisi, 2007)	0.887
AGFI	$\geq 0.85$ (Schermelleh-engel et al., 2003)	0.858
NFI	$\geq 0.90$ (Arbuckle, 1995)	0.927
CFI	$\geq 0.95$ (Hu & Betler, 1999)	0.950
TLI	$\geq 0.90$ (Hu & Betler, 1999)	0.941
RMSEA	< 0.08 (Hu & Betler, 1999)	0.060

Remark: CMIN/DF = the ratio of the chi-square value to the degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

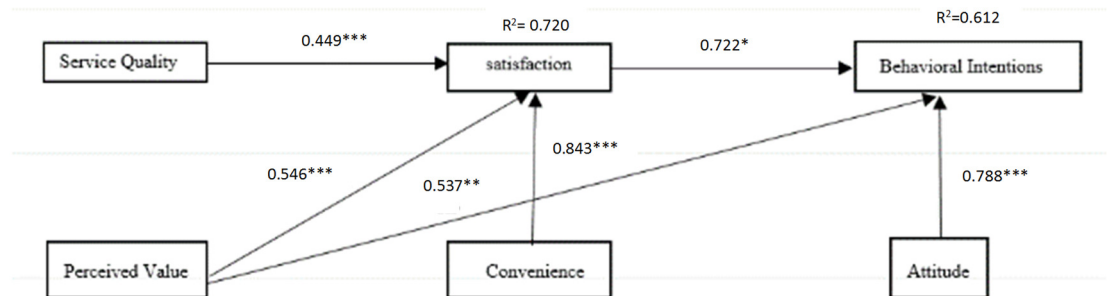
### 4. Hypothesis Testing Result

The research model is estimated as the significance of each variable from its regression weights and R<sup>2</sup> variances. The result from Table 5 proposed that all

hypotheses were supported with a significance at  $p < 0.5$ . Convenience has the most significant impact on satisfaction which resulted in 0.843, whereas perceived value ( $\beta = 0.546$ ) and service quality ( $\beta = 0.449$ ).

Moreover, the attitude has the strongest impact on behavioral intentions which resulted in 0.788, whereas satisfaction ( $\beta = 0.722$ ),

and perceived value ( $\beta = 0.537$ ). The model displayed the variance of satisfaction and the variance of behavioral intentions.



**Figure 2** Structural Equation Model (SEM)

**Table 5:** Hypothesis Result of the Structural Equation Model

Hypotheses	Paths	Standardized Path Coefficients ( $\beta$ )	S.E.	T-value	Tests Result
H1	SQ → S	0.449	0.194	2.437***	Supported
H2	PV → S	0.546	0.241	2.218***	Supported
H3	PV → BI	0.537	0.139	1.004**	Supported
H4	C → S	0.843	0.382	6.527***	Supported
H5	S → BI	0.722	0.624	1.163*	Supported
H6	A → BI	0.788	0.594	2.861***	Supported

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

Source: Created by the author

The result from the Table above can be summarized: H1: The standardized path coefficient between service quality and

satisfaction was 0.449 (t-value = 2.437\*\*\*). Therefore, service quality has a significant impact on satisfaction. Consequently, H1

was supported. H2: The standardized path coefficient between perceived value and satisfaction was 0.546 (t-value = 2.218\*\*\*). Therefore, perceived value has a significant impact on satisfaction. Consequently, H2 was supported. H3: The standardized path coefficient between perceived value and behavioral intentions was 0.537 (t-value = 1.004\*\*). Therefore, perceived value has a significant impact on behavioral intentions. As a result, H3 was supported. H4: The standardized path coefficient between convenience and satisfaction was 0.843 (t-value = 6.527\*\*\*). Therefore, convenience has a significant impact on satisfaction. As a result, H4 was supported. H5: The standardized path coefficient between satisfaction and behavioral intentions was 0.722 (t-value = 1.163\*). Therefore, satisfaction has a significant impact on behavioral intentions. Consequently, H5 was supported. H6: The standardized path coefficient between attitude and behavioral intentions was 0.788 (t-value = 2.861\*\*\*). Consequently, H6 was also supported.

## Conclusions and Recommendations

### 1. Conclusions

This research paper concentrates on evaluating of behavioral intentions

toward WeChat usage to enhance English-speaking learning of higher vocational college students in Chongqing, China. The hypotheses were presented as the conceptual framework to examine the relationship among variables. The questionnaires were distributed to the target sample of first-year students, who have been using WeChat to learn English-speaking in selected higher vocational colleges in Chongqing, China. The data analysis was done to investigate the factors that affect behavioral intentions in a geographical region's specific English-speaking learning field. Confirmatory Factor Analysis (CFA) was implemented to evaluate and test for validity and reliability of the conceptual model. Hence, the influential factors impact behavioral intentions were analyzed by the applying of the Structural Equation Model (SEM).

The research findings can be described as follows. Firstly, convenience has the most significant impact on the satisfaction among first-year students who have been using WeChat to learn English-speaking because the convenience is seen as a benefit of using WeChat to achieve student's goals to have fun learning, getting a high mark in examination and communicate more efficiently with foreigners. This

assumption aligned with an early literature of Benoit et al. (2017). Secondly, the attitude has been confirmed that has the strongest impact on behavioral intentions. The previous literature of Wang et al. (2018) proved the outcome of analysis that convenience has the most positive effect on behavioral intentions as WeChat embedded with the mobile device that students can use to attend the class or practice their speaking anytime and anywhere, they intend to use it to improve their English-speaking proficiency. In conclusion, the research objectives of this study are achieved that service quality, perceived value, and convenience have a significant effect on satisfaction; hence, attitude, satisfaction, and perceived value have a significant impact on behavioral intentions toward WeChat usage to enhance first-year students' English-speaking learning in Chongqing, China.

## 2. Recommendations

The recommendation is to implement the most effective and practical mobile application to establish an interactive learning process to improve the English-speaking ability of first-year students in higher vocational colleges in China. Moreover, the higher vocational college authority could promote the effective and useful

WeChat application to all instructors to better college students' English performances regardless of the years, majors, and courses. The promotion and usage of WeChat can offer an option to the college English instructors to improve students' English-speaking ability and benefit the students to learn English. It also provides a theoretical reference for and suggestions on the application of WeChat for English learning in higher vocational colleges in China.

## 3. Limitations and Further Research

This study has some limitations that give room for further empirical inquiry. The limitation of the research is that the population and sample employed particularly first-year students in higher vocational colleges in Chongqing, China. Methodologically, the data were gathered in Chongqing, a setting that might not demonstrate students' behavior in different geographic areas in China. The various analysis outcomes are feasible when exploring different numbers and levels of students, majors, or colleges and universities. Further research studying of other variables that possibly impact behavioral intentions such as, quality of operation system, information technology, price, trust, commitment, etc. Additionally, future research can be expanded behavioral

intentions that can influence students' English knowledge, courses, and majors performance in learning other aspects of that are affected by such behavior.

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