

The Relationship between L2 Motivational Self-system and Willingness to Communicate: The Mediating Effect of L2 Anxiety in the Chinese EFL Context

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Abstract

The current study used Structural Equation Modeling (SEM) as a statistical technique to test a hypothesized mediating model to uncover the underlying relationship between the L2 motivational self-system, L2 anxiety, and L2 willingness to communicate (L2 WTC). This study is significant because it considers the unique experiences of English as a foreign language (EFL) learner in the era of globalization by incorporating the L2 motivational self-system. The mediating effect of L2 anxiety was also accounted for, providing a deeper understanding of how emotional factors influence L2 WTC. The data were collected through a questionnaire administered to 260 students at six public universities in China. The results showed that (a) two subcomponents of the L2 motivational self-system (ideal L2 self and L2 learning experience) were positive predictors to L2 WTC; (b) the higher the degree to which learners were motivated by their ought-to L2 self, the higher the anxiety of English learning; and (c) L2 anxiety had a suppressing effect between the L2 motivational self-system and L2 WTC. Specifically, L2 anxiety weakens the direct positive effect of the L2 motivational self-system on L2 WTC, leading to a decrease in L2 WTC. Pedagogical implications and future research directions were also addressed.

Keywords: [willingness to communicate](#), [L2 motivational self-system](#), [L2 anxiety](#), [individual factors](#), [structural equation modeling](#)

1. Introduction

Matsuda (2017) asserts that English has become a global language today. The dramatic surge in the amount and pace of international communication has primarily driven this phenomenon. Consequently, there is a growing concern regarding whether it is feasible to enhance effective communication in foreign or second language (L2) teaching and learning (Lee, 2020). MacIntyre and Charos (1996) proposed that communication and second language acquisition (SLA) are inextricably linked. Learners have to talk in order to learn (Skehan, 1989), which can be seen in the current trend toward communicative approaches to second and foreign language instruction. Willingness to communicate in a second language (L2 WTC) is defined as “a readiness to enter into the discourse at a particular time with a specific person or persons, using a L2” (MacIntyre, Dörnyei, Clément, & Noels, 1998, p.547). Developing the intercultural communication skills of Chinese university students has become a central focus of the English education reform. 2020 revised *National English Teaching Guidelines for College*, issued by the China Ministry of Education, emphasized the significance of enhancing students’ intercultural communication abilities and providing ample opportunities to pursue further English language education or employment prospects.

L2 WTC is an emerging component in L2-related ID studies. Over the last two decades, it has gained substantial attention as a crucial element in determining L2 communication. It is a hybrid individual difference variable that integrates learner variables well recognized as impacts on SLA and L2 use (Dörnyei, 2005). Since high WTC levels can motivate students to seek opportunities to engage in English actively, language teachers often make a significant effort to encourage WTC in the classroom. As the language classroom represents learners’ primary source of English communication, it is crucial to investigate the underlying determinants of L2 WTC in different English as a foreign language (EFL) settings. Therefore, further investigation into WTC in China and other EFL contexts is critical (Peng, 2012, 2019).

1.1 Statement of the Problem

In Western bilingual contexts, L2 WTC is closely associated with integrative motivation. However, this relationship may not hold in typical EFL settings, such as in China, where students have limited opportunities to interact with individuals from the target language community. Despite this, in the current era of globalization, the English language does not belong exclusively to a specific target language community. The L2 motivational self-system (Dörnyei, 2005, 2009) introduces the idea of an imaginary community, which offers a viable perspective for comprehending EFL learners’ language learning and interaction. As Darvin and Norton (2015) noted, one way to account for student engagement in specific language practices is through their investment in imagined communities and their ability to access them.

Lee and Hsieh’s (2019) study highlights the critical role emotions play in L2WTC and actual L2 communicative performance. Positive emotions, including enjoyment and self-confidence, have been shown to enhance L2WTC and facilitate successful L2 communication. Conversely, negative emotions such as anxiety have been found to impede L2WTC and hinder overall L2 communication. However, the mediating effect of anxiety between the L2 motivational self-system and L2WTC remains uncertain. While existing studies have examined the pairwise relationship between L2 anxiety, L2 WTC, and other individual difference variables, empirical evidence is lacking to confirm the linear association between the L2 motivational self-system and L2 WTC mediated by L2 anxiety.

1.2 Purpose of the Study

This study aims to examine the relationships between the L2 motivational self-system, L2 anxiety, and L2 WTC among Chinese university-level English learners to address the challenges faced by Chinese university-level English learners in an increasingly globalized world. The researchers take into account the unique experiences of EFL learners by incorporating the L2 motivational self-system. Additionally, this study accounts for the mediating effect of L2 anxiety to gain a deeper understanding of the factors that influence L2 WTC. The study takes a comprehensive approach to investigating L2 WTC in EFL contexts from psychological, affective, and contextual perspectives.

2. Literature Review

2.1 L2 WTC

The WTC concept is rooted in L1 communication and psychology and was developed in the 1980s. McCroskey and Baer (1985) were the first to conceptualize this construct and define it as the intention to initiate communication when given the opportunity. Specifically, WTC was “a personality-based and trait-like predisposition which is relatively consistent across various communication contexts and types of receivers” (p.6). The first model for L2 WTC was developed by MacIntyre and Charos (1996). Later, MacIntyre et al. (1998) expanded on this model by creating a

heuristic model (Figure 1) and defining L2 WTC as “readiness to enter into discourse at a particular time with a specific person using a L2” (p.547). According to this definition, L2 WTC is a stable, personality-based construct that situational factors can influence.

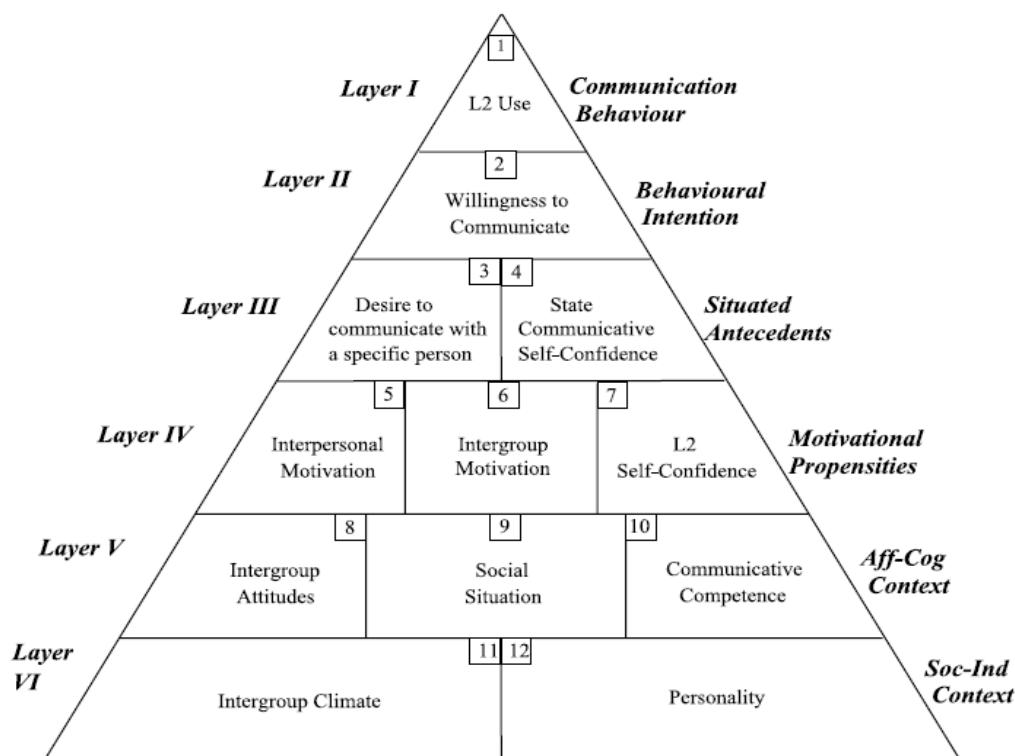


Figure 1. Heuristic Model of Variables Influencing WTC MacIntyre et al.'s (1998, p.547)

At the trait level, L2 WTC can be considered a typical communication tendency deeply rooted in one's personality. Previous research has primarily focused on the trait characteristics of L2 WTC, including motivation, self-confidence, self-perceived communication competence, and L2 anxiety (e.g., Baker & MacIntyre, 2003; Donovan & MacIntyre, 2004; MacIntyre, Baker, Clément, & Donovan, 2003). However, more recent studies have shifted towards examining L2 WTC from a situated and dynamic perspective. This perspective acknowledges L2 WTC as “an individual's volitional inclination towards actively engaging in communication in a specific situation” (Kang, 2005, p.291), with consideration given to key factors such as classroom atmosphere, tasks, and interlocutors (e.g., Altiner, 2022; Mystkowska-Wiertelak, 2016; Peng, 2012; Sabzalipour, Shafiee, & Ashtari, 2021; Song, Luo, & Zhan, 2022; Wang, Peng, & Patterson, 2021). L2 WTC is highly susceptible to various factors that interact and can fluctuate across different situations and over time. However, there is a need to explore further how the heuristic model of WTC relates to cultural communication (MacIntyre, 2020).

2.2 The L2 Motivational Self System

The socio-educational model of language learning, as proposed by Gardner in 1985, has been the dominant framework within L2 motivation research for several decades. This model places significant emphasis on integrativeness, defined as “a genuine interest in learning the second language in order to come closer to the other language community” (Gardner, 2001, p.5). However, the prevalence of English as a world lingua franca has sparked a contentious debate in motivation research. As a result of globalization, the target language group has become increasingly complex to define. Consequently, numerous scholars, including Lamb (2004), Ushioda (2006), and Yashima (2000), have challenged Gardner's notion of integrative motivation.

Contemporary approaches to motivation research aim to integrate the concepts of self and context, examining how motivation emerges and develops through the complex interplay between these factors (Dörnyei & Ushioda, 2013). This approach is encapsulated in the L2 motivational self-system, which explores the dynamic and holistic relationship

between the self and contextual factors. Markus and Nurius (1986) introduced possible selves, which act as a future self-guide, and “offer the most powerful, and at the same time the most versatile, motivational self-mechanism” (Dörnyei, 2005, p.98). The ideal self and ought-to self are two self-directions that guide the actual self. When an individual’s hopes and obligations are unfulfilled, self-discrepancy arises between the actual self and the ideal or ought-to self. Each type of discrepancy creates “a particular type of negative psychological situation associated with specific emotional/motivational problems” (Higgins, 1987, p.322). Norton (2001) also introduced the concept of an imagined community to SLA, providing a context for EFL learners with limited or no direct interaction with the target language community.

L2 motivational self-system has “expanded the horizons of language learning motivation research from an Anglocentric perspective into the global realm of self and imagination” (Papi et al., 2019, p.2). It incorporates the following three dimensions:

- **Ideal L2 self** is “a powerful motivator to learn the L2 because of the desire to reduce the discrepancy between our actual and ideal selves” (Dörnyei, 2005, p.105).
- **Ought-to L2 self**, which concerns “one ought to possess (i.e., various duties, obligations, or responsibilities) in order to avoid possible negative outcomes” (Dörnyei, 2005, p.106).
- **L2 learning experience** refers to “situated ‘executive’ motives related to the immediate learning environment and experience” (Dörnyei, 2009, p.218).

It was not until recent years that the L2 motivational self-system, an essential theoretical framework, established the relationship with L2 WTC. In the Turkish university context, Öz and Bursal (2018) investigated the possible relationship between L2 motivational self-system and L2 WTC. The result showed a significant relationship between the ideal L2 self and L2 WTC. However, the relationship between L2 WTC and ought-to L2 self was not statistically significant.

A study conducted by Lee and Lee (2020) in South Korea aimed to investigate the influence of the L2 motivational self-system on L2 WTC using a mixed-method approach. The results indicated that university students had a stronger ideal L2 self than Korean high school students. The research posits that the development of an ideal L2 self-image can potentially enhance L2 WTC, particularly in foreign language teaching environments that prioritize exam-oriented instruction, such as those found in Korea.

In China, Zhou (2022) investigated 120 university students, and the results showed that the ideal L2 self and the L2 learning experience could positively predict L2 WTC. According to the study, teachers can encourage students to construct a positive ideal self and form a robust teacher-student relationship to inspire students’ L2 WTC. In Iran, Sadoughi and Hejazi (2023) researched the effect of all L2 Motivational Self System components, L2 anxiety, and learning enjoyment on predicting L2 WTC among Iranian EFL learners. Their study showed that the ideal L2 self, ought-to L2 self, and L2 learning experience directly and positively impacted L2 WTC.

In summary, consistent with the previous studies (e.g., Chen, 2022; Darling & Chanyoo, 2018; Lanvers, 2016; Lee & Lee, 2020; Papi, 2010; Sadoughi & Hejazi, 2023; Safdari, 2019; Zhou, 2022), two positive paths from ideal L2 self and L2 learning experience, one negative path from ought-to self to L2 WTC are expected.

H1: Ideal L2 self positively predicts WTC.

H2: Ought-to L2 self positively predicts WTC.

H3: L2 learning experience positively predicts WTC.

2.3 L2 Anxiety

Anxiety is a pervasive phenomenon that can obstruct learning, and it is generally viewed as a complex construct comprising various characteristics. In particular, foreign language anxiety is “a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process” (Horwitz, Horwitz, & Cope, 1986, p.128). This construct is specific to language learning and was conceptualized for the first time by these researchers, providing a separate construct to explore and understand the impact of anxiety on language learning. Several earlier studies have established a negative correlation between L2 anxiety and L2 achievement. Researchers (e.g., Kim & Choi, 2023; Li, Dewaele, & Jiang, 2020; Teimouri, Goetze, & Plonsky, 2019) have found that higher anxiety levels are linked to lower performance in L2 achievement. Culture may also play a role in the relationship between anxiety and achievement in L2 learning. For example, Teimouri et al.

(2019) found that the relationship between anxiety and achievement varied depending on the participants' cultural background, suggesting that cultural factors may moderate this relationship.

Based on a qualitative study of four Chinese university students, Peng (2012) found that these students did not exhibit high levels of L2 WTC in English classes and that their motivation and affective factors significantly impacted their L2 WTC. In particular, L2 anxiety was closely related to L2 WTC, with a consistently negative association between the two constructs (Alimorad & Adib, 2022; Chen, 2022; Denies, Yashima, & Janssen, 2015; Khajavy, Ghonsooly, Hosseini, & Choi, 2016). Therefore, H7 is hypothesized based on these findings.

As far as the L2 motivational self-system is concerned, little study has been done to investigate the effect of tripartite aspects of the L2 self on particular L2-associated emotional states such as L2 anxiety. Papi (2010) examined a model containing L2 motivational self-system, L2 anxiety, and motivated behavior. The results indicated that the ideal L2 self and the L2 learning experience decreased students' English anxiety. Conversely, the ought-to L2 self significantly made them more anxious.

Chen (2019) examined the relationship among the L2 motivational self-system, self-efficacy, L2 anxiety, and motivated behaviors in the Chinese context. The results indicated that all variables in the model had a direct and significant contribution to motivated oral participation, with ideal L2 self having the strongest positive impact and language anxiety having a negative impact. Ideal L2 self, self-efficacy, and learning experience contributed to the decrease in student L2 anxiety, while ought-to L2 self had the opposite effect, increasing anxiety levels.

Welesilassie and Nikolov's (2022) study aimed to explore the relationship between motivation and anxiety in Ethiopian EFL learners. The study found a moderate positive relationship between the ideal L2 self and debilitating anxiety. The ought-to L2 self had no significant relationship with anxiety. L2 learning experience had a significant positive relationship with debilitating anxiety. These findings highlight the complex relationship between motivational factors and anxiety in L2 learning. Based on the research literature (e.g., Chen, 2019; Higgins, 1987; Papi, 2010; Tahmouresi & Papi, 2021; Welesilassie & Nikolov, 2022), two negative paths from the ideal L2 self and L2 learning experience and one positive path from ought-to self to L2 anxiety are hypothesized.

H4: Ideal L2 self negatively predicts L2 Anxiety.

H5: Ought-to L2 self positively predicts L2 Anxiety.

H6: L2 learning experience negatively predicts L2 Anxiety.

H7: Anxiety negatively predicts L2WTC.

Research has shown that L2-related emotions, such as enjoyment and anxiety, can indirectly predict L2 WTC. Studies conducted by Wang et al. (2021) and Li and Han (2022) have demonstrated that emotions mediate the relationship between language mindset, external classroom environment, and L2 WTC, with enjoyment having a more significant effect than anxiety. However, the mediating role of L2 anxiety in the relationship between the L2 motivational self-system and L2 WTC remains unclear. As a result, this study proposes H8 and attempts to construct a mediating model (Figure 2) to determine the underlying connection between the L2 motivational self-system, L2 anxiety, and L2 WTC.

H8: L2 anxiety mediates the relationship between L2 motivational self-system and L2 WTC.

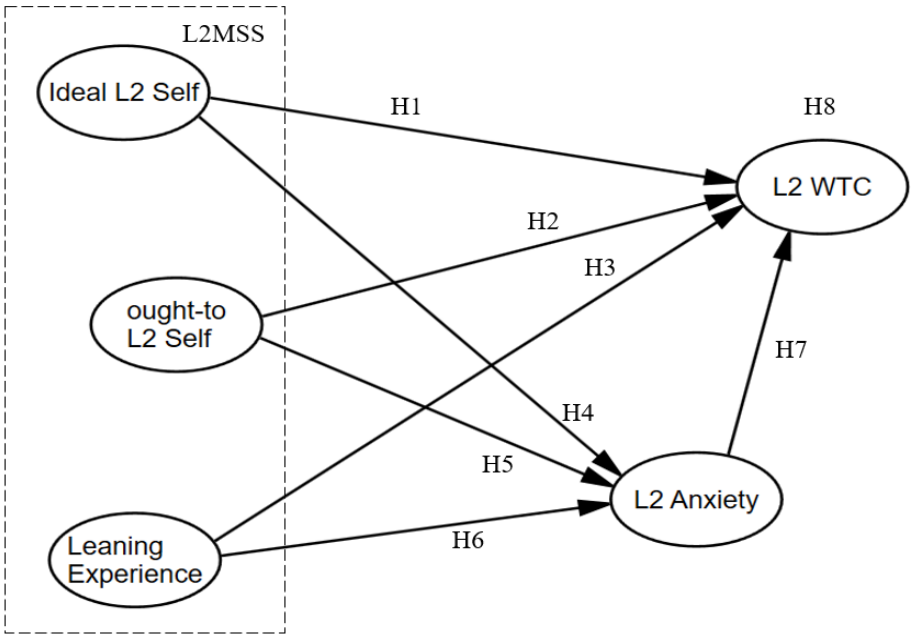


Figure 2. The hypothesized model of the L2 motivational self-system, L2 anxiety, and L2WTC.

Note: L2MSS= L2 motivational self-system.

3. Methodology

3.1 Design of the Study

The current study’s design involved using SEM to examine the hypothesized model. SEM is a comprehensive and flexible methodology that allows for exploring multiple relationships and does not impose default models or significant restrictions. The proposed model for the L2 motivational self-system, L2 anxiety, and L2 WTC was developed based on the literature review, prior empirical studies, and the abovementioned analysis. This model incorporated five essential variables: the ideal L2 self, ought-to L2 self, L2 learning experience, L2 anxiety, and L2 WTC in the Chinese EFL context. L2 anxiety was included as a mediator variable in the model to illustrate how emotions mediate the connection between the L2 motivational self-system and L2 WTC.

3.2 Participants

This research utilized a convenience sampling method to obtain data. Two hundred eighty university students from six universities in China participated in the survey using questionnaires (cf. Table 1). Excluded from the dataset were questionnaires which displayed repetition, and missing proportions over 80%, ultimately resulting in 260 valid samples with an effective rate of 92.9%. Among these valid samples, a gender distribution of 24.62% male and 75.38% female was noted. Regarding grade distribution, most participants were first-year students, comprising 40.77% of the sample, followed by sophomores at 33.46%, juniors at 15.38%, and seniors at 10.38%. Regarding majors, 76.90% of students were studying liberal arts, while 23.1% were enrolled in science and engineering programs.

Table 1. Demographic background of the participants

Name	Option	Number□	Frequency (%)□	Accumulation (%)
1. Gender	Boy	64	24.62	24.62
	Girl	196	75.38	100.00
2. Grade	Freshman	106	40.77	40.77

Name	Option	Number□	Frequency (%)□	Accumulation (%)
3.Major	Sophomore	87	33.46	74.23
	Junior	40	15.38	89.62
	Senior	27	10.38	100.00
	Liberal Arts	200	76.90	76.90
	Science and Engineering	60	23.10	100.00
Total		260	100.0	100.0

3.3 Instrument

The questionnaire was used for the study. In addition to the participants' demographic data, the questionnaire consisted of five parts-(1) ideal L2 Self, (2) ought-to L2 self, (3) L2 learning experience, (4) L2 anxiety, and (5) L2 WTC (Table 2). Parts one to four were rated on a six-point Likert scale ranging from 'strongly disagree' (coded 1) to 'strongly agree' (coded 6). Part five was also rated on a six-point Likert scale but ranged from 'definitely not willing' (coded 1) to 'definitely willing' (coded 6).

The L2 motivational self-system scale is adopted from famous and widely used questionnaires: (a) ideal L2 self-subscale ($\alpha=0.76$) (Ryan, 2009); (b) ought-to L2 self-subscale ($\alpha=0.75$) (Dörnyei, 2005; Papi, 2010); (c) L2 leaning experience subscale ($\alpha=0.83$) (Papi, 2010). The L2 anxiety scale ($\alpha=0.78$) is adopted from Ryan (2009) to elicit how much one goes through anxiety when chatting with native or fluent English speakers. The measure of the L2 WTC scale is adapted from Peng and Woodrow (2010). The scale of L2 WTC is comprised of ten items ($\alpha=0.82$), aiming to assess students' willingness to get themselves involved in communication tasks in the language classroom.

Table 2. Selected scales

Scale	Items
Ideal L2 self	I1, I2, I3, I4, I5, I6
Ought-to L2 self	O1, O2, O3, O4, O5, O6
L2 learning experience	L1, L2, L3, L4, L5, L6
L2 anxiety	A1, A2, A3, A4, A5, A6
L2 WTC	W1, W2, W3, W4, W5, W6, W7, W8, W9, W10

3.4 Data Collection Procedure

The data for this study were collected in December 2022 through an online questionnaire. Prior to filling out the questionnaire, participants were provided with a clear explanation of the survey's purpose. To collect the data, the survey was hosted on the "Questionnaire Star" website (<https://www.wjx.cn/>), which is a well-established survey website in China that specializes in self-designed questionnaires and related services.

3.5 Data Analysis Procedure

Once the data were collected, the SPSSAU data scientific analysis platform was utilized to perform reliability and validity tests to ensure the accuracy of the data. In order to meet the requirements of the model, three observable variables were removed in this step. Following that, a structural equation model was run to test the hypotheses, and mediation effects were subsequently examined. The bootstrapping method was employed to test for mediating effects.

4. Results

4.1 Reliability and Validity Analysis

The first is the reliability analysis. The overall Cronbach α for the questionnaire was 0.95. For specific latent variables, the Cronbach α for ideal L2 self (0.87), ought-to L2 self (0.86), L2 learning experience (0.93), L2 anxiety (0.86), and L2 WTC (0.95) were all greater than 0.7, indicating that the scale reliability is good. The second is the validity analysis. Validity tests were conducted using confirmatory factor analysis (CFA). The results demonstrate that all items demonstrated significance at the 0.001 level, and standardized factor loading was greater than 0.6 (Table 3). Furthermore, the AVE values associated with the five factors exceeded 0.5, and the CR values were greater than 0.7, indicating good convergent validity.

Table 3. Data quality analysis

Factor	Item	Loading	AVE	CR	Cronbach α
Ideal L2 self	I1	0.65	0.54	0.88	0.87
	I2	0.74			
	I3	0.78			
	I4	0.80			
	I5	0.81			
	I6	0.61			
Ought-to L2 self	O1	0.73	0.56	0.86	0.86
	O2	0.79			
	O4	0.76			
	O5	0.75			
	O6	0.70			
L2 learning experience	L1	0.77	0.70	0.93	0.93
	L2	0.85			
	L3	0.86			
	L4	0.90			
	L5	0.76			
	L6:	0.89			
L2 anxiety	A2	0.65	0.56	0.86	0.86
	A3	0.79			
	A4	0.65			
	A5	0.86			
	A6	0.78			
L2 WTC	W2:	0.76	0.69	0.95	0.95
	W3:	0.82			
	W4:	0.79			
	W5:	0.84			
	W6:	0.90			
	W7:	0.88			
	W8:	0.80			
	W9:	0.84			
	W10:	0.86			

4.2 Linear Regression, Multicollinearity, and Autocorrelation Tests

A linear regression analysis was conducted to examine the relationship between the independent variables (ideal L2 self, ought-to L2 self, L2 learning experience, and L2 anxiety) and the dependent variable (L2 WTC). The analysis results are presented in Table 4, which reveals that the R-squared value of the model was 0.545, indicating that the independent variables could explain 54.5% of the variance in L2 WTC. The F-test was also performed on the model, and the results showed that the model was significant ($F=76.35$, $p=0.000<0.05$). Moreover, the VIF values for all independent variables were below 5, indicating no multicollinearity issue. Additionally, the Durbin-Watson (D-W) values were around 2, suggesting no autocorrelation in the model.

Table 4. Linear regression analysis results

	Non-standardized coefficient		Standardized coefficient	t	p	VIF
	B	Std.Error	$Beta$			
Const	0.60	0.28	-	2.12	0.03*	-
Ideal L2 self	0.28	0.07	0.24	4.08	0.00***	2.01
Ought-to L2 self	-0.01	0.07	-0.01	-0.21	0.84	2.01
L2learning experience	0.59	0.06	0.58	10.58	0.00***	1.67
L2 Anxiety	-0.05	0.05	-0.04	-0.95	0.34	1.06
R^2			0.54			
Adjusted R^2			0.54			
F			$F(4,255)=76.35, p=0.00$			
D-W value			1.98			

Dependent variable: L2WTC

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

4.3 Full Structural Model Test

The SEM has numerous statistical indicators such as chi-square statistics, factor loadings, and chi-square to degrees of freedom ratio (χ^2/df). To test the overall model fit, the following indices were selected by referring to Byrne (1994): comparative fit index (CFI), the (non) normed fit index (NNFI), the Incremental Fit Index (IFI), the Tucker Lewis index (TLI), and standardized root mean square residual (SRMR). Typically, χ^2/df should be less than 5, preferably below 3 or 2; CFI, NNFI, IFI, and TLI should be greater than 0.90, with the best values closer to 1 SRMR should be less than 0.1.

Considering all the evaluation metrics together is essential when assessing the model fit. Most indicators should meet the conventional criteria for the model to be considered a good fit for the data. As presented in Figure 3, the final structural equation model yielded acceptable factor criteria loading values. Furthermore, as indicated in Table 5, the evaluation metrics of the model were satisfactory, with $\chi^2/df=2.10$, CFI=0.92, NNFI=0.92, IFI=0.93, TLI=0.92, and SRMR=0.06. The model fit met the conventional evaluation criteria, although the P-values were significant due to intra-sample multiplicity. Nevertheless, the structural model can be deemed acceptable.

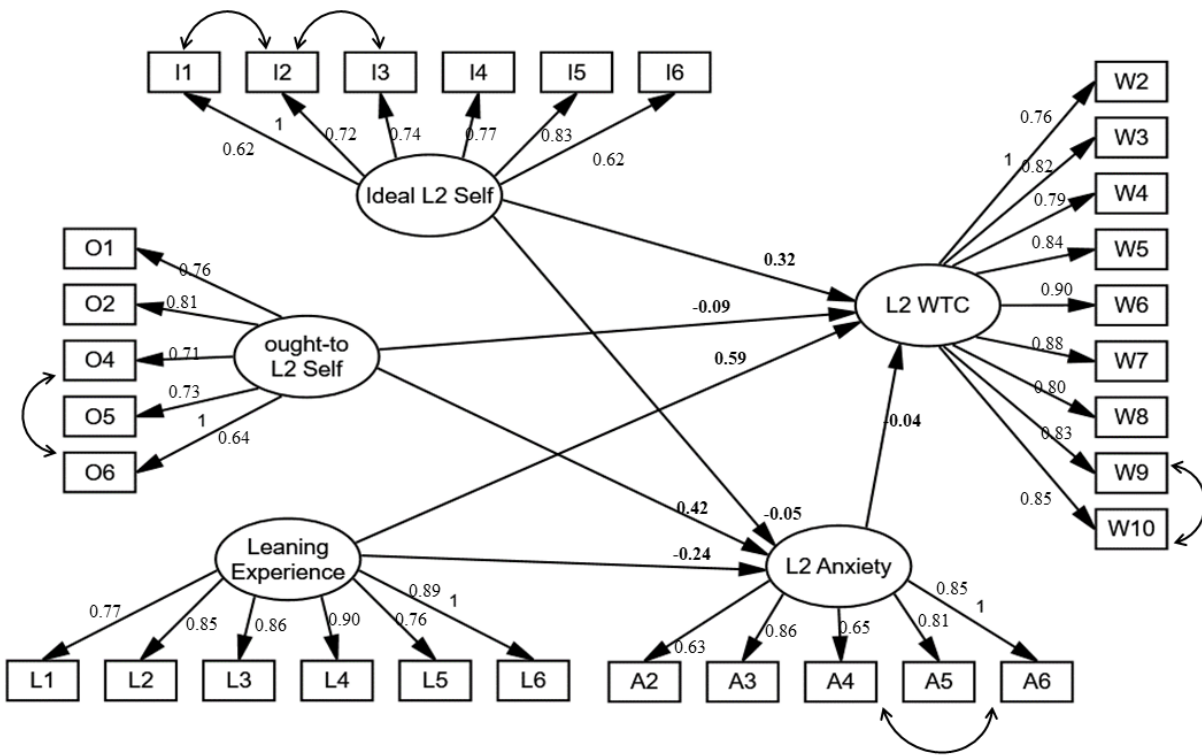


Figure 3. The final model of the L2 motivational self-system, L2 anxiety, and L2WTC.

Table 5. Selected fit measures for the final mode

χ^2	df	χ^2/df	CFI	NNFI	TLI	IFI	SRMR
879.85	419	2.10	0.92	0.92	0.92	0.93	0.06

5. Discussion

In line with the previous studies (Csizér & Kormos, 2009; Papi, 2010; Zhou, 2022), the standardized path coefficient in Figure 3 showed that the L2 learning experience is the most significant predictor of L2 WTC (0.64). H3 holds. It indicates that pleasant learning experiences activate learners' potential subjective initiative in L2 WTC and enhance their communicative intentions. L2 learning experience refers to the motivation and attitude associated with a specific learning situation. Dörnyei (2009) notes that some students' initial learning motivation does not always arise from their self-image but from successful experiences in specific learning contexts such as teachers, syllabi, and peer groups. It suggests that learning contexts significantly influence students' learning behavior. A successful English learning experience can activate learners' L2 WTC in the classroom. Positive interactions between teachers and students, innovative teaching strategies, and engaging classroom activities positively impact university foreign language learners. The result of the study highlighted the beneficiary impact of the L2 learning experience on learners' WTC. Positive learning experiences and upbeat attitudes are part of self-evaluation. This affective dimension of self-efficacy generates vital motivational energy (Bong & Skaalvik, 2003) that promotes learners' active adoption of motivational strategies to maintain their original level of motivation. In particular, successful learning experiences and self-satisfaction are learning motivators that cannot be overlooked.

Ideal L2 self had a direct positive effect on L2 WTC and H1 holds. The ideal L2 self promotes students to communicate in the English classroom. Learners' visions of their future selves can motivate them to communicate with others in English. According to the L2 motivational self-system theory, when students envision their ideal selves as successful English learners, they become more determined to close the gap between their real and ideal selves (Dörnyei, 2009). The ideal L2 self is believed to exist in the subconscious and can be a potent source of motivation when it enters

students' imagination and is recognized as such. As a result, the ideal L2 self is a crucial factor in increasing learners' WTC as it inspires them to strive towards achieving their ideal selves by communicating in English effectively.

An important result of this study is that the ought-to L2 self had an insignificant negative predictive power (-0.09 , $P=0.38$) on L2 WTC, implying that H2 is not supported. The ought-to L2 self was found to be the weakest component of the L2 motivational self-system regarding its impact on L2 WTC in this study, in contrast to previous research (Darling & Chanyoo, 2018; Lanvers, 2016; Taguchi, Magid, & Papi, 2009). For learners driven by the ought-to L2 self, despite their good intentions to learn English successfully, their motivation is mostly externalized instrumental rather than internalized future self-guide (Dörnyei, 2009; Wei, 2013). In particular, they tend to adopt an avoidance strategy to avoid negative evaluations because they are more concerned about others' evaluations, treating "L2 learning as a task and duty they should fulfill (Papi & Abdollahzadeh, 2012, p.575)". As a result, their L2 WTC is low. Interestingly, the path was insignificant, and the result was not unexpected. The ought-to L2 self relates to "the attributes one believes one ought to possess to meet expectations and avoid possible negative outcomes" (Dörnyei, 2009, p.29). For example, students are motivated to learn English in order to meet the expectations of their parents and teachers. However, an overly strong ought-to L2 self can lead to high anxiety and failure to reduce the gap between the possible self and the real self. Students with high L2 anxiety could experience communicative withdrawal behaviors, i.e., a reluctance to communicate in a foreign language. Excessive anxiety also hinders students' foreign language learning and increases their negative emotions, such as fear and sadness (MacIntyre & Gardner, 1991). L2 anxiety was negatively related to L2 WTC (-0.04 , $P=0.037$), with surprisingly no significant predictive power. H7 is not supported. Given the teacher-centred approach to English education in China, students are all forced to communicate in English in the classroom, no matter how anxious they are. It could be another possible reason to account for the insignificant influence of L2 anxiety on learners' L2 WTC.

With regard to how the L2 motivational self-system account for L2 anxiety, ought-to L2 self and L2 learning experience, respectively, had positive (0.42 , $P<.001$) and negative (-0.24 , $P=.001$) influences on L2 anxiety, which corresponds to Papi's (2010) finding. H5-H6 thus holds. The impact of the ought-to L2 self on L2 anxiety was much more substantial than the L2 learning experience on L2 anxiety. Thus, the result is consistent with Gregersen and Horwitz's (2002) study that L2 anxiety results from a significant concern for others' opinions. Traditional Chinese culture values obedience, filial piety, and other-directed evaluations. Societal and parental expectations have overshadowed individuality in Chinese students. Those young Chinese students see their parent's hopes and expectations as responsibilities and obligations. They cannot afford to turn them down. When they cannot meet their obligations, they may become highly anxious. So L2 anxiety is external and other-directed. When there is a large gap between their actual and expected selves, their L2 anxiety will be higher. When a university student begins to feel anxious, eradicating his or her anxiety will be more difficult if positive and practical psychological coping skills are not used to tackle his or her problems. The more vital role of the ought-to L2 self in driving motivated behavior, the more likely Chinese university students will feel anxious.

The non-significant negative effect (-0.05 , $P=0.074$) of ideal L2 self on L2 anxiety contrasts with the previous finding (Csizér & Kormos, 2009; Papi & Teimouri, 2012). H4 is not supported. A possible explanation is that the ideal L2 self represents a desired future characteristic that L2 learners would like to have, which may be associated with positive affective factors, and may have less influence on negative emotions, such as L2 anxiety. In order to explore the mediating role of anxiety, this study established a structural equation model with L2 anxiety as the mediating variable. The Bootstrap sampling method tests the mediating effect, with a sampling frequency of 5,000. The results are shown in Table 6. In the path $L2MSS \rightarrow L2 \text{ anxiety} \rightarrow L2 \text{ WTC}$, a ($L2MSS \rightarrow L2 \text{ anxiety}$) and b ($L2 \text{ anxiety} \rightarrow L2 \text{ WTC}$) are significant, and the direct effect is significant. The result showed that L2 anxiety mediates between the L2 motivational self-system and L2 WTC, and the path is partial mediation. H8 holds. $a*b$ effect value is -0.02 , and the direct effect is 0.91 , indicating that L2 anxiety has a suppressing effect between the L2 motivational self-system and L2 WTC. specifically, L2 anxiety weakens the direct positive effect of the L2 motivational self-system on L2 WTC, leading to a decrease in L2 WTC. That is, the effect of the independent variable on the dependent variable becomes greater after controlling for the suppressing variable-L2 anxiety.

Table 6. Test result of mediation

Item	c Total effect	a	b	a*b Mediation effect	a*b (Boot SE)	a*b (95% BootCI)	c' Direct effect	Conclusion
L2MSS=> L2 anxiety =>L2WTC	0.89***	0.15*	0.11*	-0.02	0.01	-0.04 ~ 0.00	0.91***	suppressing effect

Note: L2MSS= L2 motivational self-system; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

In summary, five of the eight tested hypotheses (H1, H3, H5, H6, and H8) were supported within the Chinese EFL context. The results suggest that various factors, such as the sample size and cultural differences, may have influenced the findings, which differ from previous studies. Considering these factors when interpreting this study's results and comparing them to other studies conducted in different contexts or cultures is essential. Moreover, it is crucial to acknowledge that the findings of this study may only be specific to the Chinese context. Therefore, caution should be exercised when applying these results to other settings or cultures.

6. Conclusion

This study explored the interrelationships between the L2 motivational self-system, L2 anxiety, and L2 WTC in the Chinese EFL context. The findings revealed that the L2 motivational self-system is applicable in the Chinese context, and there were two direct and indirect paths for the effect of the L2 motivational self-system on L2 WTC. Specifically, the L2 motivational self-system directly influenced L2 WTC and also indirectly influenced it through L2 anxiety. These results indicate that the L2 motivational self-system and L2-related emotions are closely related and can significantly impact university students' L2 WTC. Regarding the L2 motivational self-system, the study found that the L2 learning experience significantly influenced L2 WTC, followed by the ideal L2 self. However, the ought-to L2 self did not significantly predict L2 WTC. In contrast, the ought-to L2 self was found to have the greatest impact on L2 anxiety. This finding is inconsistent with Papi and Khajavy's (2021) study in the Iranian EFL context, where the ought-to L2 self did not significantly predict learners' L2 anxiety. The authors suggest that this discrepancy may be attributed to the cultural and contextual differences between the two contexts.

According to Papi and Khajavy (2021), in Iran, the negative consequences of failing to learn English may not be too serious, aside from possible disapproval from family or important others. However, in China, many young students are compelled and financially supported by their families to continue their education to secure a high-status, high-paying career (Taguchi et al., 2009). In particular, Chinese students motivated by ought-to L2 self are driven not by personal satisfaction but by a sense of obligation to fulfill their family's expectations and avoid letting them down. As a result, they often experience anxiety and frustration, fearing the possibility of failure. Additionally, English and Chinese language and cultural differences can create significant barriers for L2 learners, further compounding their anxiety. The language classroom can be an anxiety-provoking environment. It is particularly true for Chinese learners, as they may struggle with the uncertainty and ambiguity of the two divergent language systems, resulting in high levels of L2 anxiety and low L2 WTC.

6.1 Education Implications and Directions for Future Research

Although the study did not find a significant relationship between the ought-to L2 self and L2 WTC, a strong association was found between the students' ought-to L2 self and L2 anxiety. The motivation for Chinese students to learn English was driven by the expectations of their parents and teachers rather than their ideal selves. The study suggests that most Chinese students do not have an intrinsic motivation to learn English, which could lead to a robust and prevention-focused ought-to L2 self that can conflict with their ideal L2 self and L2 learning experience in the beginning. This conflict can result in high levels of L2 anxiety among Chinese university students, leading to a decrease in L2 WTC. To address this issue, teachers should minimize the role of external rather than others' evaluation. It can help students establish a correct sense of value and reduce their anxiety levels. Furthermore, the study recommends that university students understand the concept of "ought-to" correctly and modify any unrealistic beliefs to make them more reasonable, thus eliminating anxiety.

Research suggests that the traditional teacher-centred classroom environment can have a negative impact on L2 WTC (Zarei, Saeidi, & Ahangari, 2019). To promote L2 WTC among students, English teachers must play an essential role in designing practical English language courses, fostering a relaxed learning environment, cultivating positive L2 self-

images, and reducing L2 anxiety. Oyserman and Fryberg (2006) found that individuals tend to have a more favorable self-image when they perceive a high possibility of achieving their future goals. Therefore, teachers must help students develop a positive self-image of their L2 learning to boost their self-esteem and decrease anxiety levels. Moreover, teachers must motivate students to apply different language learning strategies that cater to their abilities, enhancing their L2 WTC and encouraging them to continue learning the language.

It is important to note that learners' emotional state can significantly impact their L2 WTC, particularly in Chinese EFL learners, where L2 anxiety can mediate between the L2 motivational self-system and L2 WTC (Li & Han, 2022). Therefore, teachers must be attuned to their students' emotional needs and dynamics. It involves cultivating a culture of emotional awareness, in which learners are encouraged to express their emotions and teachers validate and respond to those emotions. In doing so, learners are more likely to feel safe to take risks, make mistakes, and engage with the target language, ultimately leading to improved L2 WTC. The study employed a cross-sectional design, which limits its ability to track dynamic changes in the L2 motivational self-system, L2 anxiety, and L2 WTC over time. The study primarily utilized quantitative data collection methods through the administration of questionnaires. However, future studies could benefit from incorporating qualitative research methods such as interviews and observations to capture a more nuanced understanding of the L2 motivational self-system, L2 anxiety, and L2 WTC. Additionally, this study only focused on L2 anxiety as a mediating variable, neglecting other emotions, such as pleasure and boredom, which could play a significant role in foreign language learning. Therefore, further research should explore the role of these emotions in language learning to provide a more comprehensive understanding of the factors influencing second language acquisition.

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