THE CROSS-CULTURAL VALIDATION OF L2 MOTIVATIONAL SELF-SYSTEM INSTRUMENT IN CHINESE HIGHER VOCATIONAL COLLEGES

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Abstract: Although the L2 Motivational Self System (L2MSS) has been previously studied in the Chinese context, the inclusion of its extended structure incorporating the anti-ought-to self has yet to be fully explored. Additionally, the L2MSS has not been applied to assess higher vocational college students' motivation in business English learning. Therefore, this study aims to conduct a cross-cultural validation of the adjusted L2MSS questionnaire specifically for business English learners in Chinese higher vocational colleges. To examine the nature and structure of the motivation instrument, 288 respondents were conveniently selected to perform EFA, testing the underlying structure of the adjusted business English motivation questionnaire. Subsequently, CFA was conducted with another 288 participants to determine whether the data supported the hypothesized model in this context. Additionally, the study explores the predictive validity of the validated motivation factors concerning students' learning engagement using the same group of learners from the CFA phase. The results indicated a three-factor motivation model with 15 items, including ideal self (IS), ought-to self (OS) and anti-ought-to self (AS). Moreover, the Ideal Self (IS) and Anti-Ought-to Self (AS) significantly predict learning engagement, with IS being the strongest influence, while the Ought-to Self (OS) plays a minor role when all factors are considered together. This study fills the research gap of business English motivation in higher vocational colleges. Besides, it inspires educators to reform the curriculum, providing qualified talents to upgrade the Chinese industry.

Keywords: Business English, Higher Vocational Colleges in China, Ideal Self, Ought-To Self, Anti-Ought-To Self

INTRODUCTION

As English continues gaining prominence as a global language, it has become a critical focus in non-English speaking countries like China, where academic and career aspirations drive the motivation to learn English amid an increasingly competitive educational and employment landscape (Zheng, 2013). In today's globalized job market, employers prioritize candidates with strong English communication skills essential for international business, cross-border collaboration, and access to global resources (Liu & Pásztor, 2022). In Chinese higher vocational colleges, there is an increasing emphasis on developing multidisciplinary abilities that combine language and professional skills. As a result, business English, which integrates both language proficiency and business acumen, is gaining significant attention. Given their role in preparing students for direct entry into the workforce, these institutions have an even greater need to examine the motivations of business English learners. In this context, understanding business English learners' motivations is crucial for enhancing language education and improving alignment with student needs and employer expectations in Chinese higher vocational colleges.

There are large amounts of studies focusing on motivation instruments, which aim to measure motivation specifically (Pineda-Espejel et al., 2016). L2MSS is specifically designed to measure EFL motivation. Even though L2MSS has been used to study language learner motivation in various contexts, it has not been fully considered and applied in Chinese higher vocational contexts. Some studies within Chinese context focus on secondary school students (Thompson, 2017; You et al., 2016; Zhang & Liu, 2022), and university students (You & Dörnyei, 2016; Zheng, 2013). To the best of the author's knowledge, studies exploring business English learning motivation using L2MSS in higher vocational colleges were far from adequate. In other words, there is currently insufficient research on business English learning motivation using the instrument of L2MSS that can be systematically and comprehensively applied in higher vocational education. This study can provide additional knowledge into the adaptability and generalizability of L2MSS motivation theories. Furthermore, it can gain insight into the unique motivational characteristics of this multidisciplinary group. Additionally, the predictive validity of the instrument will examine the correlation between students' motivation and their class engagement, offering valuable insights for educators and institutions in optimizing educational management practices.

LITERATURE REVIEW

Previous Studies Regarding the Cross-Cultural Validation of L2MSS

Based on empirical research conducted in Hungary and theoretical development in applied linguistics and psychology, the L2 Motivational Self System emerged. Csizer and Dornyei (2005) proposed L2MSS grounded in the theories of Markus and Nurius (1986), namely possible selves and Higgins (1987) called ought selves. According to Dornyei's recent framework (Nguyen, 2016), there are three components: the Ideal self, the Ought-to self, and the Learning Experience. The ideal self, also known as "a straightforward and solid confirmation of predictive validity" (Dörnyei, 2009), is determined by what he or she desires to achieve in language skills. Motivation firstly results from the desire to reduce the gap between one's actual and ideal self (Dörnyei, 2009; Nguyen, 2016). An individual with an ought-to self feels obligated to become a particular way because of pressure from others, such as friends, authority figures, or general social anxiety. This ought-to self may come from the tradition of Chinese collectivism (Liu, 2020a). The learning experience is shaped by both the past and the present, the curriculum, the teachers, and the peers.

The cross-cultural validation of the L2 Motivational Self System (L2MSS) with three constructs has been essential for adapting the instrument to various linguistic and cultural environments. Researchers have translated and adapted the instrument into several languages, including Hungarian (Molenaar, 2022), Chinese (Liu & Thompson, 2018), Japanese (Taguchi et al., 2009), Saudi Arabia (Moskovsky et al., 2016), and Iran (Rajab et al., 2012), highlighting its broad applicability. The L2MSS has been extensively referenced and utilized in studies conducted in different cultural contexts.

Research studies across different cultural contexts have explored the L2 Motivational Self System (L2MSS), focusing on the three core factors: ideal self, ought-to self, and learning experience. For example, (Shin et al., 2021) validated these components among Korean secondary school students using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), confirming the significance of all three factors. In Kuwait, a correlational study used surveys in an EFL context to examine the relationship between the L2MSS components and learners' willingness to communicate, finding strong correlations across the three factors (Alenezi et al., 2021). This supports the model's cross-cultural applicability. In Saudi Arabia, a mixed-methods study combined quantitative surveys and qualitative interviews to explore L2MSS among Saudi EFL learners. The research highlighted cultural nuances, particularly the prominence of family-driven expectations (ought-to self) while validating the L2MSS framework (Thompson et al., 2021). Across these studies, the cultural context consistently shapes how these motivational factors interact, demonstrating the L2MSS's adaptability while highlighting context-specific differences in the weight given to each component.

However, in some literature, the learning experience is neglected and excluded in the self-system. In the studies by Selwyn Cruz and Nasser Al Shabibi (2019) and Xuan et al. (2023), the exclusion of the learning experience component in their research contexts reflects specific motivational and contextual factors unique to the studied populations. Selwyn Cruz and Nasser Al Shabibi's (2019) investigation of Omani college students centred more on the interplay between the ideal self and the ought-to self, emphasizing how personal aspirations and social expectations shape motivation, with less focus on the direct influence of immediate classroom experiences. On the other hand, Xuan et al. (2023) explored English learning motivation among ethnic minority students in China, primarily focusing on constructs like the ideal L2 self and associated identity factors while sidelining the learning experience, possibly due to the challenging learning environments in these regions that may not consistently provide positive learning stimuli. In both studies, the learning experience was either minimized or excluded as a research variable, suggesting that other motivational dimensions are perceived as more critical to understanding L2 motivation.

Extended L2 Motivational Self-System (EL2MSS) in the Present Study

With the proposal of the Reactance Theory (Brehm & Brehm, 1981), some scholars included anti-ought-to self in the self-system. According to Brehm and Brehm (1981), the theory of psychological reaction, the anti-ought-to L2 self is a reaction to social pressures contrary to the ought-to L2 self (Bobkina et al., 2021; Thompson & Vásquez, 2015). Some learners may be motivated to act contrary to what others suggest or expect. These learners may, therefore, have an anti-ought-to self-concept in L2 (Liu & Thompson, 2018). The anti-ought-to self may be associated with the ideal self since learners believe that a successful language-learning process involves doing something that is unexpected to them. Both ought-to self and anti-ought-to self were influenced by external factors. The concept of anti-ought-to self is based on combining a positive internal vision of the ideal self with the

importance of the surrounding environment. In this way, the anti-ought-to-self can more fully integrate the internal and external components in L2MSS.

Therefore, several recent studies have established that anti-ought-to self should be included in the L2MSS in the US (Thompson, 2017), Saudi (Moskovsky et al., 2016), and China (Thompson et al., 2021; Thompson & Liu, 2021). Despite China being known for its collectivism as opposed to individualism in Western countries, the anti-ought-to-self construct was still significant and applicable there (Thompson, 2017; Thompson et al., 2021). To the author's best knowledge, however, studies including anti-ought-to-self in L2MSS have scarcely been explored in Chinese higher vocational colleges. Even though extended L2MSS has been applied in the Chinese context, validation studies of extended L2MSS in higher vocational English learning are underproportioned. Additionally, cross-cultural studies on the L2 Motivational Self System (L2MSS) have explored the impact of motivation on variables such as academic achievement and performance. Similarly, several scholars have investigated engagement predictors using Self-Determination Theory, focusing on dimensions like intrinsic and extrinsic motivation, as well as psychological needs like autonomy, competence, and relatedness (Alonso-Tapia et al., 2023; Zajda, 2023). Building on existing research and population gaps, this study employs the extension of the L2MSS instrument to measure learners' motivation and explores its predicating effect on learning engagement—an area that has been scarcely examined within this research context.

METHOD

Research Design

This study is designed as a quantitative analysis, particularly factor analysis, including Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), to assess the validity and reliability of the instrument across different cultural groups. EFA is conducted to identify the underlying factor structure and ensure that the factors identified are consistent across cultures. CFA validates the factor structure identified in EFA and tests the consistency across different cultural groups (Hair et al., 2019). Additionally, the predictive validity of the validated instrument will be tested by examining the relationship between motivation and learning engagement. Predicative validity is conducted to assess whether the instrument can effectively forecast or anticipate specific variables related to the construct being measured (Hair et al., 2019).

Participants

The 576 business English learners in this study were conveniently selected from three higher vocational colleges in China. The sample size is determined according to the following guidelines. For cross-cultural validation of the instruments (EFA and CFA), a minimum of 200 participants for each is often recommended (Rex B. Kline, 2016). Besides, according to (Hair et al., 2019), the sample size needs to be large enough to provide stable factor solutions. A common rule of thumb is to have at least 5 to 10 participants per item in the instrument for each factor analysis. In this study, there are initial 23 items in total. According to the rule, there should be at least 230 participants for both EFA and CFA. Moreover, Mitchell and Jolley (2013) held that it's essential to account for potential missing data, especially in large-scale surveys. Adding 25% to the calculated sample size can mitigate the impact of incomplete responses. 576 participants were selected for CFA and EFA, each with 288 respondents. These higher vocational colleges were selected because the data collectors are the researcher's friends teaching business English in those institutions. All participants were native speakers of Mandarin and had learned business English for two years. Numerous students were in their second or third year of study at their respective institutions.

Instruments

In total, 23 items were initially chosen and included in the adjusted L2MSS. According to Table 1, the items of the adapted instrument were illustrated. The number of statements for each construct was as follows: six for the ideal L2 self (Oakes, 2013), seven for the ought-to self (Busse & Williams, 2010; Ryan, 2009), four for the learning experience (Taguchi et al., 2009), and six for anti-ought-to self (Liu & Thompson, 2018). For items, we referred to the item phrasings of the ideal self, ought-to self, learning experience, and anti-ought-to self but modified the keywords to reflect business English learning contexts. In the original ideal self, desired language skills were the most critical.

However, that in this case, some modifications were made to achieve the desired jobs, which is more instrumental. For example, "I can imagine myself living abroad and having a conversation in English" was rephrased as "I can imagine myself working abroad and having business communication in English", "I can imagine myself studying in a university where all my courses are taught in English (maybe abroad in the future)" as "I can imagine myself working in a foreign company where all my colleagues communicate in English." In anti-ought-to self, the phrases

were modified from "Without learning English, it will be difficult to travel to English-speaking countries" to "Without learning English, it will be difficult to work in a foreign company," "I have to study English because I don't want to get bad marks in it" as "I have to study English because I don't want to lose good working opportunities".

Table 1.
Integrated L2MSS Instrument

Dimension	Re-written Wording	Reference
Ideal self	*I can imagine myself working abroad and have business communication in English.* *I can imagine myself as someone who is able to speak English as if I were a native speaker.* *I can imagine myself working in a foreign company where all my colleagues communicate in English.* *I can imagine myself writing English e-mails fluently.* *The work I want to do in the future require me to use English.* *I can imagine myself using English fluently like my favorite (teacher or scholar/sport player/actor/singer, etc).*	Oakes, 2013
Ought-to self	*Learning English is necessary because people around me expect me to do so.* *Without learning English, it will be difficult to work in a foreign company.* *Studying English is important to me because other people will respect me more if I have knowledge of English.* *I have to study English because I don't want to lose good working opportunities.* *Being able to speak English will add to my social status.* *If I fail to learn English, I will be letting other people down.* *Some important people in my life feel that it is very important for me to learn English.*	Busse & Williams, 2010; Ryan, 2009
Learning Experience	*I think my English class is boring.* *To be honest, I really have little interest in my English class.* *I am sometimes worried that the other students in class will laugh at me when I speak English.* *My English teacher doesn't teach in an interesting way.*	Taguchi et al., 2009
Anti-ought-to self	*I am studying English because it is a challenge.* *I chose to learn English despite others encouraging me to study something different (another language or a different subject entirely).* *I would like to reach a high proficiency in English, despite others telling me that it will be difficult or impossible.* *I am studying English even though most of my friends and family members don't value foreign language learning.*	Y. Liu & Thompson, 2018

I am studying English because I want to stand out amongst my peers and/or colleagues.

In my English classes, I prefer material that is difficult, even though it will require more effort on my part, as opposed to easier material.

The motivating items were evaluated using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). These items were initially written in English, which were then translated into Chinese by four English translation teachers. Afterwards, it was re-translated into English. In the end, our English translation was confirmed as accurate and consistent by the experts. To minimize ambiguity and avoid language-related misinterpretations, 30 business English learners volunteered to pilot the questionnaire for clarity. Additionally, five experts validated the instruments, assessing the I-CVI, S-CVI, and CVR indices for relevance, clarity, and essentiality. The indices met the recommended thresholds, ensuring robust content validity from the outset. Regarding the instrument reliability, Cronbach's alpha was calculated for each factor to determine its reliability. As a result, all of the values were very high, suggesting a high level of internal reliability for each factor: ideal L2 self = .925 (4 items), ought-to L2 self = .818 (7 items), learning experience = 0.893 (6 items) and anti-ought-to self = .846 (6 items).

Data Collection and Analysis

After obtaining ethical approval from the University of Malaya (UM), the researcher distributed the questionnaire through Wenjuanxing, a widely used online data collection platform in China. The questionnaire link was first shared with the researcher's teacher friends, who subsequently forwarded it to their students. The questionnaire included a detailed introductory section outlining the study's purpose, emphasizing its voluntary nature, and ensuring participant confidentiality. Data collection continued for two months, during which responses were gathered, providing a substantial dataset for the study. After the initial content validation and pilot study, formal factor analysis was conducted with EFA and CFA.

Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were utilized to assess the validity of the translated instrument. EFA was conducted using SPSS 29.0.1, while CFA, AMOS 24.0. The following fit indices were reported to evaluate the model fit: chi-square divided by degrees of freedom (CMIN/DF, a value $\leqslant$ 5 could be considered as an indication of reasonable model fit); the CFI (a value >.90 indicates good fit), the GFI (a value >.90 indicates good fit), the root mean square error of the approximation (RMSEA; a value <.05 indicates good fit), and the standardized root mean square residual (RMR; a value <.08 indicates good fit) (Hair et al., 2019). The model reliability was tested with CR (composite reliability) and Cronbach alpha. Construct validity was evaluated using convergent and divergent validity. Based on the output of CFA, the Stats Tools package was used to calculate the validity of the questionnaire. According to the correlation table and standardized regression weights, which were copied from the output of CFA and pasted into the Excel Stats Tools package, the validity outcome was calculated accordingly. As for the predicative validity, correlation and regression analysis using SPSS 29.0.1 will be used to find the predicating effects of motivation on learning engagement.

RESULTS

Exploratory Factor Analysis

A maximum likelihood extraction method and an oblique rotation method were used to analyze the underlying construct of the business English motivation questionnaire. Results confirmed the existence of four factors for this underlying structure: the ideal self, the ought-to self, the learning experience, and the anti-ought-to self. It is evident from Table 2 that the Kaiser-Meyer-Olkin (KMO) value (0.951, p = .0001 < 0.05) that the sample size is adequate (Cerny & Kaiser, 1977). There is a significant Bartlett's test of sphericity (p = 0.00 < 0.05), which indicates that the variables are correlated (Bartlett, 1951). Furthermore, per the commonalities, the values of all variables are between 0.4 and 0.8, showing a high correlation between one variable and other variables (Fabrigar et al., 1999). It is apparent from the eigenvalues (Hair et al., 2019) greater than 1.0 that this structure contains four dimensions. It can be seen from Table 2 that a total of 70.86% of the variance in the results can be attributed to these four latent variables. First, six items were included in the first factor, which accounted for 50% of the total variance and was identified as the ideal L2 self. Approximately 11% of the variance was accounted for by seven items intended for the ought-to self. Four items remain in the learning experience after two items were excluded. Table 3 indicated that although the factor loadings of items 14 and 15 exceeded 0.4, they were removed because they were neither theoretically nor structurally aligned with the 'Ought-to Self' factor, which was intended to reflect theoretical learning experiences (Bobkina et al., 2021). Items 14 and 15 were predetermined to be loaded on the learning

experience. They made no sense in the factor of ought-to-self since they were theoretically predetermined to be loaded on the learning experience. Therefore, the learning experience contained four items and explained 4.7% of the variance. Regarding the anti-ought-to L2 self, six items accounted for 4.6% of the variance.

Table 2.
Exploratory Factor Analysis Descriptions

KMO	.95			
Bartlett's Test of Sphericity	.00			
Eigenvalues	12.53	2.82	1.19	1.17
% of Variance	50.15	11.27	4.75	4.68
Cumulative %	50.15	61.42	66.18	70.86

Table 3.
Varimax Rotated Component Matrix

	Wording	**Component**			
Item		1	2	3	4
Item 1	I can imagine myself working abroad and have business communication in English.		.713		
Item 2	I can imagine myself as someone who is able to speak English as if I were a native speaker.		.749		
Item 3	I can imagine myself working in a foreign company where all my colleagues communicate in English.		.694		
Item 4	I can imagine myself writing English e-mails fluently.		.779		
Item 5	The work I want to do in the future require me to use English.		.690		
Item 6	I can imagine myself using English fluently like my favorite (teacher or scholar/sport player/actor/singer, etc).		.737		
Item 7	Learning English is necessary because people around me expect me to do so.	.647			
Item 8	Without learning English, it will be difficult to work in a foreign company.	.656			
Item 9	Studying English is important to me because other people will respect me more if I have knowledge of English.	.702			
Item 10	I have to study English because I don't want to lose good working opportunities.	.700			
Item 11	Being able to speak English will add to my social status.	.691			
Item 12	If I fail to learn English, I will be letting other people down.	.686			
Item 13	Some important people in my life feel that it is very important for me to learn English.	.660			
Item 14	I like the overall atmosphere of my English classes.	.656			
Item 15	My English teachers are better than my other subjects' teachers.	.663			
Item 16	I think my English class is boring.				.882
Item 17	To be honest, I really have little interest in my English class.				.861
Item 18	I am sometimes worried that the other students in class will laugh at me when I speak English.				.651
Item 19	My English teacher doesn't teach in an interesting way.				.849
Item 20	I am studying English because it is a challenge.			.754	
Item 21	I chose to learn English despite others encouraging me to study something different (another language or a different subject entirely).			.804	
Item 22	I would like to reach a high proficiency in English, despite others telling me that it will be difficult or impossible.			.661	
Item 23	I am studying English even though most of my friends and family members don't value foreign language learning.			.776	
Item 24	I am studying English because I want to stand out amongst my peers and/or colleagues.			.643	
Item 25	In my English classes, I prefer material that is difficult, even though it will require more effort on my part, as opposed to easier material.			.705	

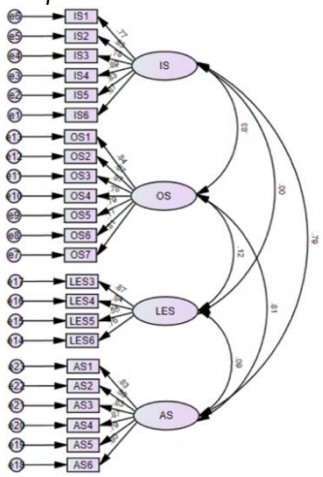
Confirmatory Factor Analysis

After developing the business English learning motivation model with four factors and 23 items, CFA was conducted on the data from another 288 additional respondents. Using AMOS to conduct CFA, the fit indices for model 1 were referred to Table 4, which showed that the model fit of these 23 items from EFA is unsatisfactory (original model) as GFI is smaller than 0.9, RMSEA is greater than 0.05, and RMR is greater than 0.08 (Hair et al., 2019). Therefore, modification was needed to improve the model fit. At first glance, it can be seen from Figure 1 that LES 5 should be deleted because its factor loading of 0.55 is lower than 0.7 (Hair et al., 2019). The factor loading of item 8 (OS2) is 0.67<0.70, which was deleted for the same reason.

Table 4.
Model Fit of Business English Questionnaire

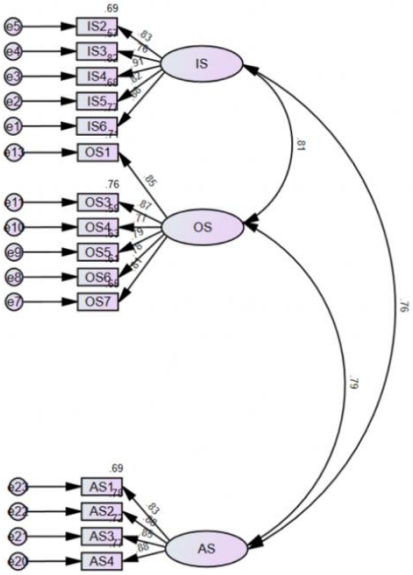
FIT INDICE	CMIN/DF	GFI	CFI	RMSEA	RMR
Model 1	3.27	0.82	0.92	0.82	0.11
Indices standard	≤ 5	>0.90	>0.90	<0.05	<0.08

Figure. 1
CFA for Four Construct Model



Then, going back to the Estimates-Standardized Residual Covariance, the values of items 16, 17 and 18 were higher than 2, indicating a potential problem of the model and suggesting deletion consequently (Sörbom, 1989). Then, there is only one item for the factor learning experience, which should also be deleted because there should be more than two items for each factor (Sörbom, 1989). In addition, the modification indices were checked and correlations among items were drawn according to the covariance to improve the model fit. Besides, it's noticed that the medication indices of item 1 in the ideal self are larger than 10, which poses the problem of cross-loadings and is deleted as a consequence (Sörbom, 1989). When the model was rerun, the standardized residual covariance for item 24 (AS 5) and item 25 (AS 6) were larger than 2, indicating that the model is not accurately capturing the relationships between these items and other variables. As a result, these items were considered for deletion to improve model fit. Therefore, for this questionnaire, 15 items with 3 factors are illustrated in Figure 2.

Figure 2.
Model for Three Construct Model



As for the fit indices of Model 2, all the indices are in either excellent or acceptable range. As can be seen in Table 5: CMIN/DF=2.69<3, indicating an acceptable fit (Hair et al., 2019). GFI=0.91>0.90, which is a reasonable fit; CFI=0.96>0.90, which is an excellent fit; RMSEA=0.04<0.05; RMR=0.06<0.08, which is acceptable. Consequently, this construct is fitted well. Totally, there are 15 items with 3 factors (ideal L2 self, ought-to self and anti-ought-to self) to be included in the business English questionnaire. Figure 2 shows the modified model of this questionnaire-model 2.

Table 5.
Model Fit for Model 2

FIT INDICE	CMIN/DF	GFI	CFI	RMSEA	RMR
Model 2	2.69	0.91	0.96	0.04	0.06
Indices standard	≤ 5	>0.90	>0.90	<0.05	<0.08

Based on the modified structure, the construct validity is measured using convergent validity and divergent validity, while reliability is tested using Cronbach's alpha and CR (composite reliability). As for the reliability of the L2MSS questionnaire, this study uses Cronbach's alpha and composite reliability. According to Table 6, In each of the constructs in the study, Cronbach's alpha was found to be greater than .70, which is considered to be a satisfactory value (Heale & Twycross, 2015), the Cronbach's alpha value of the ideal self is 0.921>0.70; the ought-to self is 0.903>0.70; and anti ought-to self is 0.932>0.70. Composite reliabilities range from 0.905 to 0.932, and all the CRs (composite reliabilities) of latent variables are above the 0.70 benchmark. The construct reliability of each construct in the study was thus established.

Convergent validity of scale items was estimated using AVE. From Table 6, the AVE of the ideal self is 0.762; the value of the ought-to self is 0.721 and the value of the anti ought-to self is 0.747. All these values are above the threshold value of 0.50 (Heale & Twycross, 2015). In addition, the factor loadings for all items were above 0.7. Therefore, all the indices meet the necessary criteria for convergent validity.

Table 6.
Reliability and Construct Validity

Factors	Items	Factor Loading	Cronbach's alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	MSV
IS	IS2 IS3 IS4 IS5	0.84 0.75 0.91 0.82	0.921	0.922	0.762	0.632

OS	IS6	0.89	0.903	0.905	0.721	0.653
	OS3	0.87				
	OS4	0.77				
	OS5	0.81				
	OS6	0.78				
	OS7	0.81				
AS	AS1	0.83	0.932	0.932	0.747	0.653
	AS2	0.88				
	AS3	0.83				
	AS4	0.87				
	AS5	0.79				
	AS6	0.80				

Per the divergent validity, we can see from Table 6 that with each latent variable, AVE>MSV. In addition, the square root of AVE is expected to be greater than the correlation between constructs (Heale & Twycross, 2015). In this study, according to Table 7, considering the OS's square root of AVE is larger than its correlation with IS and AS respectively, 0.869 > 0.793/ 0.801; the square root of AVE for IS is 0.839 > 0.776 (correlation with AS), resulting in no validity concern. Consequently, there is no violation of divergent validity as well.

Table 7.
Divergent Validity

	OS	**IS**	**AS**
OS	0.869		
IS	0.793	0.839	
AS	0.801	0.776	0.836

Predicative Validity

With the validated L2MSS instrument in this research context, its predictive effects on engagement will be tested. The results from Table 8 indicate that the Ideal Self (IS) and Anti-Ought-to Self (AS) factors are significant predictors of learning engagement, collectively explaining 38% of the variance in engagement ($R^2 = 0.380$). Correlation analysis showed that IS had a moderate positive correlation with engagement ($r = 0.452$, $p < 0.01$), while AS had a weak positive correlation ($r = 0.206$, $p = 0.030$), both statistically significant. The Ought-to Self (OS) factor also demonstrated a significant but weaker correlation ($r = 0.323$, $p < 0.01$). However, in the multiple regression analysis, only IS ($\beta = 0.632$, $t = 5.736$, $p < 0.001$) and AS ($\beta = 0.455$, $t = 5.481$, $p < 0.001$) remained significant predictors of engagement, with IS showing the strongest influence. OS did not significantly predict engagement ($\beta = 0.013$, $t = 0.125$, $p = 0.901$), suggesting its limited role when controlling for the other factors. These findings highlight that while all three motivational factors correlated with the engagement, IS and AS are the key drivers when examined together, with IS having the most substantial impact on learning engagement.

Table 8.
Predicative Validity

	Correlation with Engagement		**Multiple Regression**		
	Pearson correlation	p-value	β	t-value	p-value
IS	0.452	< 0.01	0.632	5.736	< 0.001
OS	0.323	< 0.01	0.013	0.125	0.901
AS	0.206	0.030	0.455	5.481	< 0.001

Note: R2 = 0.380.

DISCUSSION

The factor analysis results revealed that the constructs of the extended L2MSS in this context align with a three-structure model—the Ideal Self, the Ought-to Self, and the Anti-Ought-to Self—consistent with the findings of Liu and Thompson (2018). The exclusion of learning experience for the L2MSS framework was in line with the previous studies in other contexts (Selwyn Cruz & Nasser Al Shabibi, 2019; Xuan et al., 2023). It can be easily inferred from the EFA that IS (ideal self) played an important role in business English learning motivation, which can also be interpreted that students are more inner motivated than external factors. This is particularly true for

students from higher vocational colleges who are looking forward to obtaining a good job after graduating. With much financial burden and little support from their families (Guo & Wang, 2020), these learners are more independent and ambitious to get idealized jobs for themselves, changing their destinies by themselves. The second factor is the ought-to self, which originated from Chinese traditional culture: collectivism (Liu, 2020b). The differences between a collectivist society and an individualist society lie in the fact that people in a collectivist society are more likely to be influenced by external factors, such as the expectations of their families or society. The respondents in this study also share the characteristics of collectivism, which results in the large account of the ought-to self in the motivation factor.

Regarding learning experience, it is indicated to a little impact on the student's learning motivation. In other words, this group of respondents have less influence from peers, curriculum, teachers, or textbooks. The possible reason for the small or no effect on the learning experience may be that in traditional classrooms, learning textbooks, teaching methods and teachers' qualifications are not idealized and scarcely changed because of the ignorance from government or institutions (Wang & Guo, 2019). To make it worse, these unfavourable resources make students demotivated and dismiss the influence of external factors to improve their learning motivation. The inclusion of anti-ought-to self may be that due to the spirit of refusing to accept defeat and refusing to be ruled by fate, higher vocational college students learning business English are capable of resisting on their own. In another way, it is the manifestation of anti-ought-to-self, which is the ability to defend oneself against others and their surroundings (Bobkina et al., 2021). This is why anti-ought-to self (rebellious self) is incorporated into the L2MSS structure.

Besides, the results of the predicative effect of motivation on engagement using the validated instruments allign with (Alonso-Tapia et al., 2023; Zajda, 2023). Among their studies, the common thing is they apply the instruments supported by self-determination theory, including intrinsic motivation, extrinsic motivation, and psychological needs as the dimensions. However, this study details the predicating effects of both IS and AS, but no effect of OS. Though correlated with engagement, OS was not a significant predictor when IS and AS were combined, contrasting with studies suggesting OS's stronger role in contexts driven by external expectations. This could be due to contextual differences where intrinsic motivation (IS) and resistance to external pressures (AS) are more prominent. Future research should explore OS's role across diverse contexts and examine qualitative insights into learners' motivational priorities while expanding on AS's interaction with other factors like self-efficacy.

CONCLUSION

This study makes a valuable contribution to the field by extending the L2 Motivational Self System (L2MSS) to include the Anti-Ought-to Self while applying it to Chinese higher vocational college students learning business English. Specifically, the results confirm a three-factor model—Ideal Self, Ought-to Self, and Anti-Ought-to Self—with the Ideal Self emerging as the most influential predictor of learning engagement. Moreover, this research is one of the first to validate the extended L2MSS structure within this specific educational context, offering fresh insights into the motivation of vocational business English learners.

The findings have important implications for educators and curriculum designers in higher vocational institutions. By highlighting the dominant role of the Ideal Self in driving motivation and engagement, the study suggests that programs should focus more on fostering students' personal aspirations and intrinsic goals. Additionally, recognizing the relevance of the Anti-Ought-to Self opens avenues for incorporating strategies that address students' resistance to unwanted pressures. These insights can guide targeted interventions and curriculum reforms to align educational offerings with industry demands in China.

However, the study has some limitations that should be considered. The sample was limited to business English learners in Chinese higher vocational colleges, which may limit the generalizability of the findings to other contexts. Additionally, the study relied on self-reported data, which can be subject to biases. Future research should explore the applicability of the extended L2MSS in other vocational or cultural settings and consider incorporating longitudinal designs or mixed-method approaches to gain a more comprehensive understanding of motivational dynamics over time.

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