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Exploring the Language Learning Beliefs of Thai Junior High School Students in Chinese Learning: A BALLI-Based Study

Li Pan
Assumption University, Bangkok, Thailand

Xianyue He
Friendship International Education, Bangkok, Thailand

***Abstract*—The development of the BALLI scale and the five-factor model by Horwtiz has led to a surge in research on language learning beliefs. The present research explored the language learning beliefs of 300 junior high school students from three schools located in the Bangna region of Bangkok as they learned Chinese, utilizing the BALLI scale. Using confirmatory factor analysis (CFA), the researchers attempted to fit Horwtiz's five-factor model to the data, but this model did not receive sufficient support. Therefore, exploratory factor analysis (EFA) was employed to analyze the factor structure, resulting in the identification of five dimensions. However, the items included in these dimensions were considerably different from those in Horwtiz's five-factor model. As a result, a new measurement model was proposed for this study. Following this, the researcher conducted a CFA to assess the appropriateness of the newly proposed measurement model, and the findings suggested that the data matched the model effectively.**

***Index Terms*—language learning beliefs, BALLI, Chinese learning, Thai students**

I. Introduction

Beliefs about language learning (BALL) have been a prominent subject in the field of second language acquisition for the last 30 years and are generally considered an important factor in the progress of language learners (Bernat & Gvozdenko, 2005; Dörnyei, 2005; Kormos et al., 2008; Wesely, 2012). The research's primary focus on language learning beliefs has recently shifted from the teacher's perspective to that of the learner (Bagherzadeh, 2012). Beliefs about language learning (BALL) have the potential to provide a thorough understanding of language learning beliefs that may therefore be used to influence language education and instructional strategies (Horwitz, 2017).

Horwitz developed the Beliefs About Language Learning Inventory (BALLI) scale, which comes in three distinct versions, to gauge language learning beliefs (Nikitina & Furuoka, 2006). The initial version, introduced by Horwitz in 1985, consists of 27 items and focuses on evaluating the language learning beliefs of language educators. The second version, developed by Horwitz in 1987, contains 34 items and measures the language learning beliefs of non-American EFL or ESL learners. The third version, proposed by Horwitz in 1988, is also composed of 34 items and is intended to measure the language learning beliefs of American language learners who are studying a second language.

Thus far, numerous scholars have extensively researched language learning beliefs employing Horwitz's BALLI measurement instruments, but primarily concerning non-native English speakers' beliefs about learning English in ESL and EFL contexts (Bernat, 2004; Nikitina & Furuoka, 2006; Park, 1995). Diab (2000) asserts that the language learning beliefs of learners in second language acquisition are intricate and can be influenced by several factors, such as cultural background and educational experiences. According to Fujiwara (2011), the empirical testing of Horwitz's five-factor model based on the BALLI scale has been inadequate.

Numerous studies have employed the BALLI questionnaire to investigate the Chinese learning beliefs of non-native Chinese speakers (Guo & Lee, 2015; Liu & Zhang, 2019; Rohmah et al., 2021; Shang & Zhang, 2019; Wang, 2014; Zhang, 2016). Nonetheless, insufficient research has been conducted to undertake an in-depth study on Thai students' beliefs about learning Chinese. Thai students begin studying Mandarin in the first year of elementary school and continue until the third grade of junior high. At the senior high school level, students are free to choose whether to continue learning Chinese. Therefore, Chinese is an important foreign language for them.

This research examined the language learning beliefs of 300 junior high school students in three private schools in Bangkok, Thailand, in relation to learning Chinese, using Horwitz's BALLI questionnaire. The researchers utilized exploratory factor analysis to establish the dimensions of the 35 items in the study and create a conceptual model. A confirmatory factor analysis was also conducted to compare the study data to Horwitz's five-factor theoretical model and the newly developed conceptual model to assess model fit.

II. Review of Literature

Beliefs refer to an individual's comprehension and premises regarding the world, which are influenced by their distinct experiences, cultural background, social interactions, and personal values (Richardson, 1996). The Beliefs about Language Learning Inventory (BALLI) was established by Horwitz (1985, 1987, 1988) as a tool for evaluating language learners' beliefs about the language learning or acquisition process.

Following the development of the BALLI, numerous researchers have conducted diverse investigations into language learning beliefs. Abraham and Vann (1987) suggest that one's language beliefs have a significant influence on language learning behavior. In other words, the more positive a learner's language beliefs are, the more likely they are to exhibit positive behavior toward language learning. Also, if language learners hold negative language learning beliefs, it can impede their motivation to learn the language (Dörnyei & Otto, 1998). Tanaka (2004) conducted research to compare the language abilities and learning beliefs of two groups: one that studied in New Zealand and one that studied in Japan, and the finding shows that changes in learning beliefs did not significantly affect general language proficiency. Oz (2007) conducted research on the language learning beliefs of Turkish secondary school students in EFL using the BALLI scale. The results indicated that learners' attitudes or beliefs toward language learning varied depending on their age, stage of learning, social background, and educational setting. Bernat and Lloyd (2007) sought to determine whether variations existed in the language learning beliefs of male and female EFL learners. After evaluating the learning beliefs of 155 females and 107 males, they found that there were mostly no major distinctions in the language learning beliefs of language learners of different genders, except for one item that was statistically significant and another that was borderline significant. According to a study by Jafari and Shokrpour (2012) on the language learning beliefs of Iranian ESP learners, it was found that the participants held the conviction that learning a language demands hard work and dedication and that interacting with native speakers can help enhance their language proficiency.

Nikitina and Furuoka (2006) conducted a study on the factor structure of the BALLI scale in Malaysia by applying deterministic and confirmatory factor analysis, and their findings indicated that BALLI's model was not supported by the data. Hsiao and Chiang (2010) employed confirmatory factor analysis to investigate the factor structure of the BALLI scale, and their results were in line with Nikitina and Furuoka's research. This research highlights the significance of evaluating and adjusting the factor structure of instruments to guarantee their validity in diverse contexts. Fujiwara (2018) conducted a study using the 35-item BALLI scale to explore the learning beliefs of 537 Thai students who were studying Japanese. The results indicated that the Horwitz five-factor BALLI did not align well with the Thai students' data, but a revised factor structure was found to have a better fit and more fitting factor loadings.

III. Methodology

A. Participants

This study involved 300 junior high school students who were from three private schools located in the Bangna area of Bangkok, Thailand, and were on the verge of starting their senior high school education. Out of the 300 individuals involved in the study, every single one held Thai citizenship. Of these participants, 101 (33.7%) were male, and 199 (66.3%) were female. Additionally, 18 (6%) of the individuals had learned Chinese for one to three years, 32 (10.7%) had studied Chinese for three to five years, and 250 (83.3%) had studied Chinese for over five years.

B. Sampling Technique

Firstly, the researcher contacted three private schools in the Bangna area of Bangkok, Thailand, and obtained information about the number of junior high school students from Mandarin teachers. According to the information provided, there were 2,862 junior high school students in the three schools. The first school had 1128 students, accounting for 39.4% of the total. The second school had 1086 students, accounting for 38.0%. The third school had 648 students, accounting for 22.6%. Following the above-mentioned data, the researchers employed stratified sampling to establish the required number of participants for each school. As a result, the first school needed 118 participants, the second school needed 114 participants, and the third school needed 68 participants.

Next, the researcher employed convenience sampling by visiting three schools and inviting students from all three schools to participate in a survey. Each student who completed the questionnaire received a packet of snacks worth 20 baht as an incentive.

Lastly, the researcher utilized judgmental sampling to review all the questionnaires. Only those students who were junior high school students and had at least one year of experience learning the Chinese language were selected to be participants in the study. The researcher ceased the data collection process after obtaining three hundred valid questionnaires.

C. Instruments

The researcher adopted a survey as a data-gathering instrument for this study. This research used a modified version of Horwitz's (1987) Beliefs About Language Learning Inventory (BALLI) questionnaire, which consists of 35 items and is designed for use in English as a Second Language (ESL) and English as a Foreign Language (EFL). This

questionnaire was used by Fujiwara (2018) to investigate the beliefs of Thai students about studying the Japanese language.

To make the questionnaire understandable to Thai junior high school students, the researcher had to translate it into Thai. The researcher enlisted the help of two Thai language graduates from Chulalongkorn University to translate the questionnaire from English to Thai. The translated Thai questionnaire was then given to two other Thai language graduates from the same university to re-translate it back into English for accuracy checking. Prior to distributing the questionnaire to the participants, the researcher asked ten junior high school students from private schools to test the Thai version of the questionnaire. After confirming that the questionnaire contained no linguistic errors or cultural bias, the researcher used the Thai questionnaire to collect data for the study.

D. Procedures

The study involved a three-step process. Initially, the researcher utilized AMOS modeling and confirmatory factor analysis (CFA) to assess whether Horwitz's (1987) five-factor model could be applied to the study data. Next, the researcher performed exploratory factor analysis (EFA) with SPSS software to validate the study's dimensions and distributions and to construct a measurement model for the study. Finally, the researcher applied AMOS modeling once again to fit the measurement model generated from the EFA with confirmatory factor analysis (CFA).

IV. Findings

A. Explore Whether Horwitz's Five-Factor Model Is Applicable

The researcher examined the data collected in this study to check whether it supported Horwitz's (1987) five-factor model. Therefore, a confirmatory factor analysis (CFA) was applied to test the fit. Using AMOS 24, the researcher created the measurement model as depicted in Figure 1. However, after analyzing the model fit, it was determined that each goodness-of-fit indicator failed to meet the minimum threshold as shown in Table 1, which indicated that the data from this study could not support Horwitz's model.

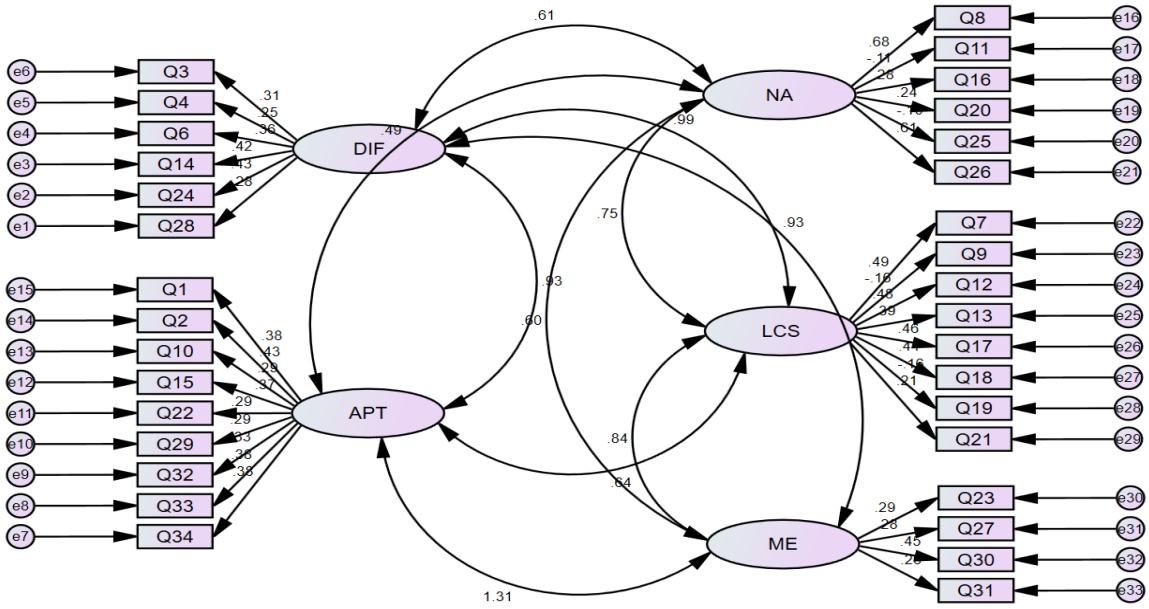

Figure 1. Testing of Horwitz's (1987) Five-Factor Model (Standardized Estimates)
Note: DIF refers to the difficulties of language learning. APT refers to the aptitude to learn a foreign language. NA refers to the nature of language learning. LCS refers to learning and communication strategies. ME refers to motivations and expectations.

TABLE 1
GOODNESS-OF-FIT INDICES OF HORWITZ'S (1987) FIVE-FACTOR MODEL

Index	Acceptable Value	Model Measurement Values
CMIN/DF	< 3.00 (Awang, 2012)	3.0393
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.7230
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.6796
CFI	≥ 0.80 (Bentler, 1990)	0.4194
TLI	≥ 0.90 (Sharma et al., 2005)	0.3679
RMSEA	< 0.08 (Pedroso et al., 2016)	0.0826
Conclusion	The model does not fitted	

B. Establishing the Measurement Model

In light of the current study's inability to support Horwitz's model, the researcher chose to utilize exploratory factor analysis (EFA) to construct a measurement model instead. This was carried out using SPSS 27. As per Shrestha (2019), the value of Kaiser-Meyer-Olkin (KMO) should be greater than 0.6, which is considered barely adequate. The KMO value for the present study was 0.764, indicating that the data was appropriate for the subsequent step of EFA. Also, Bartlett's test for sphericity yielded a statistically significant result with a p-value of less than 0.001.

Using the EFA varimax rotation method, the researchers extracted five dimensions from the 35 items. Steven (1992) proposed that the minimum threshold for the absolute value of factor loadings in EFA should be 0.4, regardless of sample size, and that each item should only load onto one dimension. As a result, the researcher removed items 8, 9, 11, 19, 21, and 34 from the analysis because their factor loadings were below 0.4. After eliminating the six items listed above, the five dimensions were able to explain 57.0% of the total variation, or 17.93%, 11.80%, 10.45%, 9.20%, and 7.623%, respectively.

The researcher conducted a reliability test using Cronbach's α to ensure the consistency and reliability of the study data. The results showed that Cronbach's α for each dimension was 0.775, 0.756, 0.752, 0.690, and 0.662, which all fall within the acceptable range according to Griethuijsen et al. (2015) of greater than 0.6. Thus, the data of this study were deemed reliable and internally consistent across all dimensions.

TABLE 2
DIMENSIONAL STRUCTURE OF BELIEFS ABOUT LANGUAGE LEARNING INVENTORY (BALLI)

	Items	Loading
Factor 1 - Self-efficacy and Expectations (8 items, Cronbach's α = 0.775)		
29	If I learn Chinese very well, I will have better opportunities for a good job.	0.718
6	People from my country are good at learning foreign languages.	0.560
20	People in my country feel that it is important to speak Chinese.	0.554
5	I believe that I will learn to speak Chinese very well.	0.542
13	I enjoy practicing Chinese with Chinese people I meet.	0.509
4	Chinese is a very easy language.	0.503
24	I would like to learn Chinese so that I can get to know Chinese people better.	0.495
16	I have a special ability for learning foreign languages.	0.421
Factor 2 – Focus (6 items, Cronbach's α = 0.756)		
23	The most important part of learning a foreign language is learning grammar.	0.635
26	It is important to practice with audio-visual materials (such as CDs and DVDs).	0.610
28	The most important part of learning Chinese is learning how to translate from my native language.	0.602
17	The most important part of learning a foreign language is learning vocabulary words.	0.571
7	It is important to speak Chinese with excellent pronunciation.	0.522
18	It is important to repeat and practice a lot.	0.517
Factor 3 - Strategies and Methods (5 items, Cronbach's α = 0.752)		
35	Language learning involves a lot of memorization.	0.702
14	It is OK to guess if you don't know a word in Chinese.	0.562
31	I want to learn to speak Chinese well.	0.561
12	It is best to learn Chinese in Chinese-speaking countries.	0.559
32	I would like to have Chinese friends.	0.555
Factor 4 - Attitude (5 items, Cronbach's α = 0.690)		
10	It is easier for someone who already speaks a foreign language to learn another one.	0.652
3	Some languages are easier to learn than others.	0.602
22	If beginning students are permitted to make errors in Chinese, it will be difficult for them to speak correctly later on.	0.544
27	Learning a foreign language is different than learning other academic subjects.	0.514
25	It is easier to speak than understand a foreign language.	0.496
Factor 5 - Perceptions (5 items, Cronbach's α = 0.662)		
30	People who speak more than one language are very intelligent.	0.641
15	If someone spent one hour a day learning Chinese, it would take him/her a long time to speak Chinese very well.	0.538
2	Some people have a special ability for learning foreign languages.	0.485
33	Everyone can learn to speak a foreign language.	0.453
1	It is easier for children than adults to learn a foreign language.	0.445

C. Testing the EFA Model

Following the EFA, the researcher reconstructed the model using AMOS 24 and conducted another analysis of the model fit using confirmatory factor analysis, based on the five dimensions and their corresponding items. The measurement model obtained from this study is presented in Figure 2. After the analysis, as indicated in Table 2, all goodness-of-fit indices were within acceptable ranges, indicating the measurement model has a good fit.

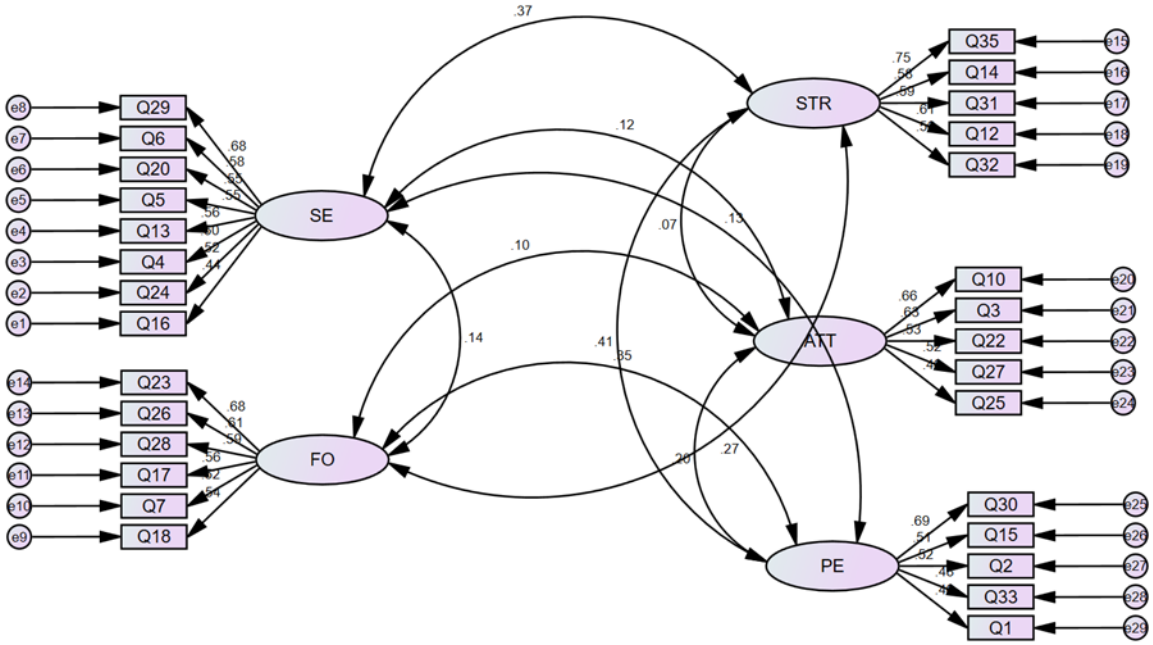

Figure 2. Testing of Measurement Model Based on EFA (Standardized Estimates)
Note: SE refers to self-efficacy and expectation in language learning. FO refers to focus in language learning. STR refers to strategies and methods for language learning. ATT refers to attitude toward language learning. PE refers to perceptions of language learning.

TABLE 3
GOODNESS-OF-FIT INDICES BASED ON THE MEASUREMENT MODEL

Index	Acceptable Value	Model Measurement Values
CMIN/DF	< 3.00 (Awang, 2012)	1.3454
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.8994
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.8808
CFI	≥ 0.80 (Bentler, 1990)	0.9245
TLI	≥ 0.90 (Sharma et al., 2005)	0.9145
RMSEA	< 0.08 (Pedroso et al., 2016)	0.0340
Conclusion	The measurement model fitted	

V. DISCUSSION AND CONCLUSIONS

This research investigated the attitudes towards learning Chinese among 300 junior high school students from three private schools in Bangkok, Thailand, using Horwitz's BALLI questionnaire, which assesses language learning beliefs. After collecting the data, the researcher conducted a confirmatory factor analysis (CFA) to compare it with Horwitz's (1987) five-factor model. The researcher applied the Tucker-Lewis Index (TLI) as one of the fit coefficients to determine whether the model fits because TLI is less sensitive to sample size than some other fit indices, which can make it a useful choice when working with small sample sizes. However, the results indicated that Horwitz's model was not a good fit for the data. A study by Fujiwara in 2018, which investigated Thai students' beliefs about learning the Japanese language, produced results similar to the current study, indicating that Horwitz's five-factor model could not be supported. Hsiao and Chiang (2010) conducted a study on the language beliefs of Taiwanese college students. The researchers tested the data collected from 750 college students using Horwtiz's (1987) five-factor model. However, the results showed a persistent lack of fit between the data and the model.

Horowitz's (1987) five-factor model, often known as BALLI, was initially employed to investigate the beliefs of non-U.S. students studying English as a second or foreign language. However, in the current study, the focus was on Thai students' beliefs about learning Chinese, and hence it was reasonable that the original five-factor model could not be fitted. Furthermore, the significant difference in the items for each dimension between this study and the original model can be attributed to the likelihood that the items on the BALLI scale might differ in various cultural and social contexts.

Therefore, the researcher continued to use exploratory factor analysis (EFA) to categorize the 35 question items into five distinct dimensions. Six questions were removed from the analysis because they had an absolute factor loading value of less than 0.4 or didn't fit with any of the identified dimensions. The researcher then assigned a name to each of the five dimensions to create a new five-dimensional model. The researchers subsequently validated the newly created five-dimensional model by conducting confirmatory factor analysis (CFA) on the data and confirming that the experimental data fit the model well.

In conclusion, our study found that the data did not support Horwitz's (1987) five-factor model of language learning beliefs as measured by the BALLI questionnaire. Despite this, the BALLI scale is still seen as a suitable instrument for conducting research on language beliefs in diverse social, cultural, and linguistic contexts.

VI. Limitations and Recommendations

The researcher has recommended several directions for future research in response to the limitations of the current study. First, this survey was conducted on Thai middle school students' beliefs about learning Chinese, while Horwtiz's (1987) study on language learning beliefs was conducted in English for non-U.S. students learning ESL or EFL. As there are considerable variations in beliefs about language learning among learners from different cultures and social contexts, it is necessary to determine whether Horwitz's BALLI scale can be applied to examining beliefs about learning Chinese in future research. Another limitation identified by the researcher is that even though Chinese language classes are offered in almost all primary and secondary schools in Thailand, most junior high school students still struggle with recognizing Chinese characters and communicating fluently in the language. Additionally, the study found that most students view Chinese as a highly challenging language to learn. As a result, Thai junior high school students may not have developed the necessary language proficiency to yield accurate results in comparison to their English language learning counterparts. To address this issue, future studies could focus on Thai university students who are majoring in Chinese, which would allow for a more in-depth examination of their beliefs about language learning.

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Li Pan was born in Zhejiang Province, China in 1995. Currently, he is pursuing a doctoral degree in Technology, Education, and Management at the Assumption University of Thailand. Also, he holds a master's degree in English Language Teaching (ELT) from the Assumption University of Thailand.

He has over seven years of experience teaching in international schools and specializes in teaching English as well as Chinese.

His current research interests include second language teaching, computer-assisted language learning (CALL), and computational linguistics.

Xianyue He was born in Hubei, China in 1998. She completed her Master's degree in Culture Management at Chulalongkorn University in Thailand.

She currently works as a professional Mandarin staff for Friendship International Education in Bangkok, Thailand, while also serving as a Mandarin teacher for two private schools in Thailand. She has accumulated more than three years of teaching experience in both private and international schools.

Her current research interests include Teaching Chinese as second language, cross-cultural communication, Second Language Acquisition.