

Attitudes and Needs of Thai Merchants Towards the Importance of Learning English and Chinese

Sarayut Chabantom¹ , Arunthip Dieng² , Sattra Sahatsathatsana^{3*} 
^{1,2,3} Kalasin University, Kalasin, Thailand

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Abstract

The purposes of this study were: 1) to investigate the attitudes towards the importance of the English and Chinese, and 2) to investigate the needs of learning of Thai merchants towards English and Chinese. The samples were 100 merchants, selling different goods in Pattaya received from convenience and availability sampling method. The questionnaire was used as research instrument to collect the perceived importance of English and Chinese for their work and needs of learning English and Chinese. The statistics employed for analyzing data were: percentages, means, and standard deviations through the statistical package.

* Corresponding author.

E-mail address: sattra.sa@ksu.ac.th

The results revealed that the needs for learning English and Chinese were especially high in industries such as Accessories, where the complexity of communication is particularly high. English is obviously more frequently used and perceived as more important by the merchants. However, the desires of the merchants to learn Chinese were greater, indicating a high motivation to learn Chinese, presumably due to the current lack of Chinese skills. Overall, the results highlighted the increased needs regarding Chinese skills for Thai merchants, supposedly due to the fast-growing importance of the Chinese language. Because the required English and Chinese skills are very different depending on the industry (or types of goods sold), specific measures are recommended which take these industry-specific differences into account.

Keywords: Attitudes and needs, English and Chinese, Thai merchants,

Introduction

Thailand is a diverse country where over 80 languages are spoken (Smalley, 1994). Although one language, Thai, has predominantly been used in official and media communication (Smalley, 1994), two foreign languages have recently also become a central part of many peoples' lives: English and Chinese. The importance of these two languages is underlined by the Thai education system: from all the 19 foreign languages taught, only English and Chinese have been included at every education level (Tangyuenyong & Choonharuangdej, 2010). Whereas English has for decades played a central part in the successful Thai tourist and export industry (Thitthongkam et al., 2010), the Chinese language has recently also become very important in that regard. As a nearby country with the world's largest population and a fast-growing economy, the People's Republic of China has recently become a very important player in global trade and tourism (Lin, 2011), which has consequently also made the Chinese language very important in Thailand. Chinese language has long been offered as a foreign or second language, in both public and private schools (Luo & Limpapath, 2016). At present, Chinese may be considered as equally important as the English language. This reflects the importance of Chinese as a global language with hundreds of millions of Chinese-speaking people. The Chinese language has also

benefited from the recent openness of Thailand towards China: Since the re-establishment of diplomatic relations in 1975, relations between Thailand and China have recently become very friendly and Thai officials have generally viewed the Chinese influence in the region positively (Chinwanno, 2009; Kanoksilapatham, 2011). From 2007 onwards, the Chinese language has enjoyed the status of a language that is supposed to contribute to enhancing the country's potential competitiveness in the era of globalization (Kanoksilapatham, 2011). Still, Chinese language study in Thailand has faced many obstacles or difficulties, such as high demand, a lack of possibilities of Chinese language learners to apply the knowledge to the real environment, a lack of appropriate textbooks and a lack of teachers with enough competency or enthusiasm for the subject (Masuntisuk, n. d. ; Kanoksilapatham, 2011).

In 1996, English became a mandatory subject for all primary students from grade one onwards. This enabled Thai student to learn English without interruption from primary to secondary school. According to the National Education Curriculum (based on the Constitution of Thailand), all Thai citizens have an equal right of twelve years of basic education (Wongsothorn, 2002). Despite this, Thai people have often encountered difficulties in learning the English language, because of cultural factors, rigid teaching methods and a lack of focus on verbal communication. More recently, however, in 2008, English was set to be taught using a more communicative approach, and be taught through other subjects as well (Sermsongswad & Tantipongsanuruk, 2015). It has been recognized that good knowledge of English is now a necessity in Thai society, so that English learning was given more importance in the education system and productive skills were given more importance than before (Wongsothorn, 2002).

Recently, a lot of attention has been given to the increased importance of English and Chinese language in Thai economy in general. However, very little is still known about the specific implications and trends. In order to give more specific recommendations, more knowledge is required about: 1. the areas of the Thai economy in which English / Chinese is particularly

important, and 2. the motivations that drive people in different areas of business to learn these languages.

To gain further insights about this, this study systematically examined the attitudes and needs of Thai merchants of learning the English and Chinese language, to learn more about key factors (extrinsic or intrinsic) , contributing to the importance of English and Chinese for specific professions.

Research Objectives

1. To investigate the attitudes towards the importance of English and Chinese
2. To investigate the needs of learning of Thai merchants towards English and Chinese.

Methodology

1. Research Design

The quantitative research design was employed and the gathered data were analyzed through the use of descriptive statistics. However, there was also the qualitative data from the observation reported in the end of the results.

2. Population and Samples

2.1 Population

The population were Thai merchants in Pattaya, potentially using English and/or Chinese in daily communication.

2.2 Samples

The samples were 100 Thai merchants selling various types of goods received from convenience and availability sampling method.

3. Instrument(s)

The questionnaire was adapted from Luo & Limpapath (2016), which was in turn based on attitude questionnaires developed by Abidin, et al. (2012),

Al Asmari (2013) and on Yu (2010). In addition, some questions have been added for this specific research topic.

It consisted of three parts including: Part I focused on the demographic information of the participants (age, gender etc.), their personal backgrounds as well as the industry they work in, Part II focused on the importance of English and Chinese for their lives and professions, and Part III focused specifically on their attitudes towards English and Chinese language.

4. Data Collection

Using this questionnaire, the data was personally collected from all 100 respondents during the second semester of the 2019 academic year. For this purpose, the researchers travelled to Pattaya and personally carried out the data collection (February 15-16, 2019). The respondents in the sample were asked to complete the questionnaire immediately after distribution of the Q&A sheet. When the meaning of a question was unclear, the respondents were assisted, and the meaning of the questions was separately explained to them. Questions were also asked at different times of day, to make sure that different types of merchants were included in the survey.

Responds were collected anonymously (without name of the sample on the sheet) and the respondents' personal data and responses were kept in strict confidentiality. After personally collecting the data from all 100 different merchants on the original survey sheets, all data was manually manipulated and kept electronically through the use of computers, for validating and analyzing the data.

5. Data Analysis

The data analysis was undertaken by importing the resulting Excel file into the statistics software package. In the software, the data were analyzed efficiently and with standardized methods, for the statistics mentioned below. The results of the analysis were exported from the statistical package into numerous statistics tables, which were then further examined for important trends and differences. For interpretation of the scores from the questionnaire, please find the following definitions:

1= Strongly Disagree
4 = Mostly agree

2= Disagree
5= Strongly Agree

3 = Don't know

Results

Table 1
Distribution of Merchants by Gender

Distribution by Gender, Age and Education			
	Frequency	Percentage	Cumulative Percent
Gender			
Female	58	58.0	58.0
Male	42	42.0	100.0
Total	100	100.0	
Age			
20-29	21	21.0	21.0
30-39	36	36.0	57.0
40-49	15	15.0	72.0
N/A	28	28.0	100.0
Total	100	100.0	
Education			
Bachelor's	18	18.0	18.0
High School	13	13.0	31.0
< High School	47	47.0	78.0
N/A / Other	22	22.0	82.0
Total	100	100.0	

As shown in Table 1, the descriptive statistics show that the samples seemed well-balanced, with a similar number of males and females, as well as people from different age groups, and education levels respectively. However, it should be noted that most participants did not have a high school education. In addition, there were many participants who had a different

kind of education, or who did not want to disclose their age or their education level (“N/A”).

Table 2

Distribution of Merchants by Types of Goods Sold

Distribution of Types of Goods sold			
	Frequency	Percent	Cumulative Percent
Accessories	15	15.0	15.0
Clothes	9	9.0	24.0
Food & Beverages	34	34.0	58.0
Handbags & Shoes	11	11.0	69.0
Other	31	31.0	100.0
Total	100	100.0	

Regarding goods sold, Table 2 shows that a large part (about one third) of the samples of merchants sold foods and beverages. There was also a large group of merchants selling miscellaneous things (“Other”), which included items specifically for tourists, but also specific things such as umbrellas or health products and cosmetics. Apart from that, there were sizeable groups of merchants selling accessories and clothes, as well as handbags and shoes. Overall, this well-balanced sample should allow to make inferences about the population of Thai merchants in Pattaya. The following sections, therefore, will look more closely at the results regarding the specific needs and attitudes of merchants regarding the English and Chinese language.

Table 3

Distribution of Merchants by English Ability

Ability to speak and understand English and Chinese			
	Frequency	Percentage	Cumulative Percent
English Ability			
1	1	1.0	1.0
2	3	3.0	4.0
3	13	13.0	17.0

4	26	26.0	43.0
5	57	57.0	100.0

Table 3 (continued)

Ability to speak and understand English and Chinese			
	Frequency	Percentage	Cumulative Percent
Chinese Ability			
1	24	24.0	24.0
2	21	21.0	45.0
3	17	17.0	62.0
4	14	14.0	76.0
5	24	24.0	100.0
Total	100	100.0	

For English, Table 3 shows that on a scale from 1 = “Very Poor” to 5 = “Very good”, most merchants ranked their English skills as “Good” (26%) or “Very Good” (57%). On the other hand, only a small share of the merchants ranked their Chinese skills as “Good” (14%) or “Very Good” (24%) was shown in Table 3.

Table 4

Learning Experience of Merchants in English and Chinese

English and Chinese Learning Experience			
	N	Mean	S.D.
Having learned English	99	2.89	1.889
Having learned Chinese	100	2.29	1.402

As shown in Table 4, English had been learned by more merchants than Chinese, however the difference is less pronounced than the difference between English and Chinese skills.

Table 5

Use of English and Chinese in Merchants' Careers

Use of English in Career			
	N	Mean	S.D.
English is used often in career	100	3.66	1.765
Chinese is used often in career	100	2.87	1.668

As presented in Table 5, English is still expected to be more frequently used overall in merchants' careers than Chinese. This is underlined by the shares of customers speaking English and Chinese.

Table 6

Share of Customers Speaking English and Chinese

Share of customers speaking English and Chinese			
	N	Mean	S.D.
Share of Customers speaking English	99	48.12%	31.97%
Share of Customers speaking Chinese	99	26.52%	22.39%

As Table 6 (derived from the question "How many of your customers do you speak in English / Chinese?") also indicates, English is more frequently used than Chinese overall.

Table 7

Use of English and Chinese in Merchants' Careers

Use of English and Chinese in Job and Career			
	N	Mean	S.D.
Importance of English for job	100	4.35	.925
Importance of Chinese for job	100	3.89	1.348
Importance of English for career	100	3.71	1.794
Importance of Chinese for career	100	3.48	1.778

According to the results in table 7, English was considered as more important for the current job than Chinese. However, English was still ranked only slightly more important for both the current job and for (future) career.

Table 8

Desire of Merchants to Learn English and Chinese

Desire to learn English and Chinese			
	N	Mean	S.D.
Desire (wanting) to learn English	99	3.06	1.511
Desire (wanting) to learn Chinese	99	3.26	1.569

According to these results in Table 8, although English skills seem to be more important for the merchants to survive in the current work environment, the indicated desire to learn Chinese was greater (mean score of 3.26 for Chinese instead of 3.06 for English).

Table 9

Importance of English and Chinese for Merchants, by "Type of Goods"

Importance of English and Chinese, by Industry / Goods sold					
		Importance of English	Importance of Chinese	English is important for career	Chinese is important for career
Accessories	Mean	4.67	3.93	4.00	3.60
	N	15	15	15	15
Clothes	Mean	4.00	3.67	3.11	2.89
	N	9	9	9	9
Food & Beverages	Mean	4.47	3.88	4.15	3.88
	N	34	34	34	34
Handbags & Shoes	Mean	4.36	4.27	3.45	3.45
	N	11	11	11	11
Other	Mean	4.16	3.81	3.35	3.16
	N	31	31	31	31

Total	Mean	4.35	3.89	3.71	3.48
	N	100	100	100	100

As shown in Table 9, the essentially same questions were asked for the (current) job and for the career. For the current job (columns 1 and 2), the results indicated that Chinese skills were especially important for sellers of Handbags and Shoes (almost equally important as English). English skills, on the other hand, were ranked as very important for selling Accessories.

Table 10

English and Chinese Abilities of Merchants, by “Type of Goods sold”

		English Ability	Chinese Ability
Accessories	Mean	4.87	3.00
	N	15	15
Clothes	Mean	4.00	2.67
	N	9	9
Food & Beverages	Mean	4.29	2.62
	N	34	34
Handbags & Shoes	Mean	4.55	3.64
	N	11	11
Other	Mean	4.19	3.06
	N	31	31
Total	Mean	4.35	2.93
	N	100	100

The results shown in Table 10 indicates that sellers of accessories, handbags and shoes were very good speakers of English: the average score was 4.87 and 4.55 respectively (almost the maximum), indicating that almost all sellers of Accessories, Handbags and Shoes could speak English very well. However, for Chinese skills, the scores were only medium, indicating a lack of Chinese skills of sellers of these kinds of goods. Therefore, in the areas

where English skills were important, specifically in selling accessories, handbags and shoes, the English skills of Thai merchants seem to cover those needs quite well.

It could be obviously observed that the use of body language as well as the use of utensils by merchants, in order to complement the (limited) use of spoken words were generally used for communication. It was found that the merchants often communicate with limited vocabulary, but they tried to cope with this problem by using hand gestures, pointing to objects, or by using utensils such as calculators. So, for example, if a merchant did not have good English skills, he or she could use body language and gestures instead. This could be another explanation for why many merchants (e. g. food vendors) did not require advanced English and Chinese skills.

This once again showed that the successful communication in a business context is about more than just foreign language skills. Depending on the good which is being sold, a lack of foreign language skills can be compensated with non-verbal communication. This underscores the importance of evaluating language needs based on the context (e. g. by the industry or good being sold), a key finding confirmed by this study.

Discussion

The results of this study largely support the basic results found by Wongchai and Yotimas (2014), Chayada (2017) and Hongquian (2016), for Thai merchants. The importance of both English and Chinese is strongly recognized by Thai merchants, whereas the needs (difference between required and actual skills) are expected to be stronger for the Chinese language. This applies especially to industries such as Accessories, where the Chinese skills were ranked as very important. Overall, therefore, the results highlight the importance of improving Chinese skills for Thai merchants in these industries. However, it should be noted that this study had a number of limitations.

Firstly, the qualitative research strategy with personal answers only allowed for a relatively small sample size (in this case 100 merchants). In some cases, this may have led to higher standard deviations and therefore diminish the statistical significance of the results. Secondly, the sample of merchants was not perfectly randomized and limited to a certain area. This may mean that

the results are not completely generalizable for Thailand as a whole. For example, because Pattaya is very touristic, the importance of English and Chinese tends to be higher than in other places. Still, it could be expected that merchants in other areas in Thailand have similar language requirements and face similar problems. Thirdly, the study here presented focused more on “subjective” needs, than on “objective needs”. Participants were asked about what they think (subjective or “felt” needs), instead of objectively measuring how much money they could earn by learning the language. Fourth, the study focused on simple statistics and for the sake of simplicity, an elaborate quantitative analysis was not undertaken. Fifth, the notions of “attitudes” and “needs” are dependent on each other (and therefore, these two terms cannot be perfectly separated). If, for example, the needs to learn a language are great, then the attitudes towards this language will also be more positive.

For future studies, a more quantitative research design could lead to further insights. Also, while this study has looked at a specific area, it could be interesting to look at a broader population, to perhaps uncover differences between more touristic and less touristic areas. Despite these limitations, the findings presented in this study clearly underscore the importance for Thai merchants to adapt to the new Chinese language requirements (in addition to the English skills, which many of them have already acquired in the past). This, together with the findings from previous research, leads to the following recommendations.

The results of the study revealed that the attitudes of Thai merchants towards English and Chinese language are mostly positive and that the needs to learn Chinese are strong.

Regarding the attitudes of the importance of English and Chinese, the importance of English and Chinese is strongly recognized (importance of 4.35 for the current job for English and 3.89 for Chinese, respectively). The motivations to learn these languages were about average, but the desires to learn Chinese were slightly stronger (3.26 instead of 3.06). This corresponded with Hongquian (2016) who found indications that Thai people in Bangkok were highly motivated to learn Chinese, even though Chinese was still only the second most important foreign language.

Regarding the needs of learning English and Chinese, English was more frequently used than Chinese (an average of 48.1% of customers speak English, but only 26.5% of customers speak Chinese). However, as shown in chapter 2, language needs result not only from required skills, but from the difference between required skills and actual skills (McCawley, 2004). In the case of this study, therefore, needs arise from the language skills which the job demands (required skills) versus the skills which the merchant already has (actual skills). Regarding actual skills, a very large number (83%) of the merchants already ranked their English skills as “Good” or “Very good”. It can thus be expected that English requirements were covered quite well and therefore, the needs for additional English skills were smaller. With Chinese, on the other hand, only a small number (38%) of the merchants ranked their Chinese skills as “Good” or “Very good”. This leads to a high difference between required Chinese skills and actual Chinese skills, indicating a strong need for Chinese skills (large gap between “the Chinese skills that are needed for the job” vs. “the Chinese skills that merchants have”). Again, this finding is also in line with results from other studies, especially Hongquian, (2016).

As outlined in chapter 2, this could be a result from increased tourism and trade with Chinese-speaking people, which many Thai merchants have not yet adapted to. Another factor for this lack of Chinese skills may be the lack of successful Chinese teaching, as supported by other studies such as Kanoksilpatham (2011).

Further analysis indicated that the needs towards English and Chinese language for Thai merchants is largely related to the industry or type of goods which they sell. With Accessories, for example, the scores for the importance of English and Chinese (for the career) were 4.00 and 3.60, respectively, as oppose to 3.11 and 2.89 for Clothing. The industries with a high complexity of the goods (e.g. Accessories) were normally also the ones which showed the strongest needs for English and Chinese skills. This result is supported by Wongchai & Yotimas (2014), who found high importance of foreign language (speaking and listening) for sellers at souvenir shops and with Chayada (2017), who found a low importance of foreign language for food vendors.

Thus, where the good is complex and where the nature of the communication is more complex (as e.g., with accessories or jewelry), the required English and Chinese skills may be greater. Meanwhile, where the communication is simpler (as e.g. in the selling of clothes), the required English and Chinese skills have tended to be lower. Also, in the subsample analysis by industry (or “type of good sold”), it was found that the merchants’ English skills covered the required English skills quite well (e.g. mean score for English skills of 4.87 for Accessories), but that the required Chinese skills were not covered very well by the merchants’ Chinese skills. In Accessories, for example, the mean score for Chinese skills was only 3.00, relative to an average importance of 3.93 of Chinese for the current job, indicating a large difference between required and actual skills. Thus, the actual English skills of Thai merchants seemed mostly sufficient relative to the required skills, whereas the actual Chinese skills appear as insufficient when compared to the required skills. By definition, this indicates a lack of Chinese skills in specific industries, such as in the tourism industry (as supported by Hongquan, 2016).

In conclusion, the English skills of Thai merchants are much higher than their Chinese ones. This might be because of Chinese is more difficult for Thai merchants to learn than English. Another possible reason may be that the opportunities to speak English on the job are still more common than the opportunities to speak Chinese reflecting from the results for topic of “language use”. Thus, it was not surprising that the importance of English for the current job was ranked as higher than Chinese. Although Chinese is currently less frequently used, it was amazingly found that most merchants also found the Chinese language to be important.

Recommendations

1. Implication

1.1 Simplify Chinese learning in public schools, especially by putting more focus on speaking and listening and on basic vocabulary. The results presented in other studies, such as Kanoksilpatham (2011), also indicate that more emphasis should be put on speaking and listening in Chinese education

(instead of grammar and rules). Especially for selling goods, being able to speak and listen (and to know basic vocabulary) would seem more important than being able to follow the strict grammatical rules. As Wongchai and Yotimas (2014) found, speaking and listening were most important for Thai merchants.

1.2 Offering specific language trainings at reduced prices, in order to provide more opportunities to the merchants to practice conversation in the Chinese language. Previous studies such as Hongquian (2016) indicated that Thai people would be willing to pay to learn Chinese, so there is a potential demand for this measure to succeed.

1.3 Providing the specific language training. As shown in Chayada (2017) and as confirmed by this study, the required vocabulary depends largely on the good that is being sold (depending on whether a merchant sells food or accessories, the range of words he requires is very different). Therefore, some merchants, such as sellers of clothes, could get by with a minimum of English language (related to size, price and material). For them and also for example for sellers of food (cf. Wongchai & Yotimas, 2014), advanced Chinese is not as important. However, for a seller of jewelry or other accessories, negotiation, advanced skills in the foreign language (e.g. detailed explanation and precise conversation in Chinese) become very important. For example, they need to learn specific phrases like “this item is 80% silver and I can give you a certificate for that”. For these industries, such as the luxury industries, more advanced language training programs are necessary. This not only applies to Chinese language training programs, but also to training programs in the English language.

2. Further Study

Since the effective of using non-verbal language or gestures was helpful for the merchants to communicate with their customers, it should be, consequently, provided in terms of training for them besides providing the training using verbal language.

References

- Abidin, M., Pour-Mohammadi, M., & Alzwari, H. (2012). EFL students' attitudes towards learning English language: The case of Libyan secondary school students. *International Journal of Asian Social Science* 8(2), 119–134.
- Al Asmari, A.R. (2013). Saudi university undergraduates' language learning attitudes: A preparatory year perspective. *International Journal of Asian Social Science* 3(11), 2288–2306.
- Chinwanno, C. (2009). *Rising China and Thailand's policy of strategic engagement*. In J. Tsunekawa (Ed.), *The Rise of China: Responses from Southeast Asia and Japan*. Tokyo: National Institute for Defense Studies.
- Chayada. (2017). *The role of street food vendors on tourism development in Bangkok, Thailand*. Jumongjibaru, Japan: Ritsumeikan Asia Pacific University.
- Hongqian, J. (2016). Demand Estimate of Chinese Language. A Case Study of BKK Market. *International Journal of Management and Applied Science* 2(7), pp. 82–87.
- Kanoksilpatham, B. (2011). *National survey of teaching Chinese as a foreign language in Thailand*. Retrieved from https://www.researchgate.net/publication/283712679_National_survey_of_teaching_Chinese_as_a_foreign_language_in_Thailand/download
- Lin, J. Y. (2011). China and the global economy. *China Economic Journal* 4(1), 1-14. DOI: 10.1080/17538963.2011.609612.
- Luo, H. & Limpapath, P. (2016). Attitudes towards Chinese Language learning: A case of Thai Senior High School Students at a Private School in Bangkok. *BU Academic Review*, 15(2), pp. 102–112.
- Masuntisuk, R. (n.d.) *Chinese language teaching in Thailand at the primary and secondary education levels*. Retrieved from http://www.thaiworld.org/upload/question/file_827.pdf (year of publication not stated)
- McCawley, P. (2004). *Methods for conducting an educational needs assessment*. Idaho: University of Idaho.

- Sermsonswad, U. & Tantipongsanuruk, C. (2015). *English language education in Thailand*. In Bigalke, T.W. and Sharbawi, S. (eds.) English for ASEAN Integration: Policies and Practices in the Region. Brunei Darussalam: Universiti Brunei Darussalam.
- Smalley, W. A. (1994). *Linguistic diversity and national unity: Language ecology in Thailand*. Chicago: University of Chicago Press.
- Tangyuenyong, P. & Choonharuangdej, S. (2010). *Research on the teaching and learning of the Chinese language in higher education institutions in Thailand: A Summary*. Thai World Affairs Center. Retrieved from http://www.thaiworld.org/upload/question/file_830.pdf
- Thitthongkam, T., Walsh, J., & Bunchapattanasakda, C. (2010). The roles of foreign language in business administration. *Journal of Management Research* 3(1), 1–14. 10.5296/jmr.v3i1.509.
- Wongchai, A. & Yotimas, D. (2014). *A language needs analysis research of tourism personnel at Muang Tam sanctuary for tourism English communication innovation*. Conference: International Conference on Education, Pshchology, and Social Science (ICEPS2014), At Taipei, Taiwan.
- Wongsothorn, A., Hiranburana, K. & Chinnawongs, S. (2002). English Language Teaching in Thailand Today. *Asia Pacific Journal of Education* 22, 107–116. <http://dx.doi.org/10.1080/0218879020220210>.
- Yu, Y. (2010). *Attitudes of learners toward English: A case of Chinese college students*. The Ohio State University. Retrieved November from https://etd.ohiolink.edu/!etd.send_file?accession=osu1283303545&disposition=inline