

Operational factors of entrepreneurs influence the decision to choose the Thailand-Laos border trade: a case study of Nong Khai Province in Thailand.

Kamoltip Panyasit¹, Montri Singhavara², Grid Rangsungnoen¹, Jenasama Srihirun³, Somsuay Panyasit⁴,
Supreeya Wangsathian²

1 Department of Business Administration, Faculty of Interdisciplinary Studies, KhonKaen University, Thailand

2 Departments of Economics, Faculty of Economics, Maejo University, Thailand

3 Departments of Hotel Management, Faculty of Liberal Arts, Rajamangala University of Technology Thanyaburi,
Thailand

4 Departments of Agricultural Extension and Development, School of Agriculture and Cooperatives,
Sukhothai Thammathirat Open University, Thailand.

DOI: <https://doi.org/10.56293/IJMSSSR.2022.4529>

IJMSSSR 2022

VOLUME 4

ISSUE 6 NOVEMBER – DECEMBER

ISSN: 2582 - 0265

Abstract: The objective of this research is to study the operational factors that influence entrepreneurs' decisions to choose Thai-Laos border trade in Thailand's Nong Khai Province. The population used in this study is Nong Khai Province-based entrepreneurs that are members of the Office of Small and Medium Enterprises Promotion (OSMEP), which has a total of 1,066 members in 2021. The sample size: a total of 283 samples were obtained from the calculations, but to ensure the accuracy of the estimate, consequently 500 samples were used, and the samples were selected by simple random sampling, using a questionnaire as a study tool. Use the Logit model to analyze the data and present the findings with descriptive statistics. According to the study's findings, the overall operational factors were at a high level, with an average of 3.96. The majority, 57.80 percent, had border trade experience. The marginal effects of the costs of the products, the distance, and the time on the decision to choose the Thailand-Laos border trade are 0.179, -0.216, and 0.109, respectively. And all the variables in the Logit model could explain the likelihood of deciding on border trade equal to 52.40% (Pseudo R² = 0.524).

Keywords: Operational Factors, Decision, Thailand-Laos Border Trade

1. Introduction

Due to Thailand's geographic location in the heart of Southeast Asia, border commerce is crucial for boosting the viability of Thai goods in the marketplaces of its neighbors. Normal commerce and border trade with neighboring nations result in reduced transportation costs, as well as being a way to get rid of the excess supply in the Thai market and a way to acquire inexpensive raw materials to enter factories to make goods in the nation. This is to reduce manufacturing costs, allowing such items to be sold at reduced prices, which benefits Thai domestic customers and allows them to export products at a lower cost, boosting their competitiveness in the world market. Thailand now has 92 trading channels with neighboring countries (including border checkpoints, temporary border crossings, and checkpoints for border trade) and plans to add more cross-border trade checkpoints in the future. However, border trade channels that are scattered in the border areas tend to have different trade and investment activities (Noisopha, 2014).

Thailand is a country in Southeast Asia with a total area of 513,115 square kilometers. It is situated in the center of the Indochina Peninsula (the Indochina Peninsula consists of Myanmar, Thailand, Laos, Vietnam, and Cambodia). Nong Khai Province is in northeastern Thailand, 615 kilometers from Bangkok, the country's capital. It covers an area of around 3,026.53 square kilometers. It is in the valley of the Mekong River, which also provides the country's border with the Lao People's Democratic Republic (Laos). Overall, most of the region is flat, sits 200 meters above sea level, and is ideal for border trade (Figure 1) (Nong Khai Provincial Agriculture and Cooperatives Office, 2021). The ThaSadet (Nong Khai Immigration Checkpoint) and the Nong Khai Customs Checkpoint are the two sites where Nong Khai Province and Laos are connected. In Thailand's northeastern region, the Nong Khai Customs Checkpoint is a crucial commercial hub. There is the 1st Thai-Laos Friendship

Bridge connecting the route between Thailand and Vientiane, capital of Laos (Figure 1) (Department of International Trade Promotion, Ministry of Commerce, 2021).



Figure 1. Province territories in Thailand that are connected to Laos.

Source: WorldAtlas (2021), Krainara&Routray(2015)

Laos, also known officially as the Lao People's Democratic Republic, is an important neighbor of Thailand, sharing an 1,810-kilometer continuous border with it. Lao PDR's economic development and stability are consequently crucial for Thailand, just as they are for other nearby nations. Thailand places a high value on expanding and deepening ties with Laos in all areas. It has been 72 years since Thailand and Laos established diplomatic ties. The overall area of Laos is 236,800 square kilometers, and it is a landlocked nation. Because neighboring nations' borders line the Laos border, it is completely enclosed. Its boundaries with nearby nations are as follows: China and Vietnam to the north; Cambodia to the south; Vietnam to the east; and Thailand to the west. The 12 provinces of Chiang Rai, Phayao, Nan, Uttaradit, Phitsanulok, Loei, Nong Khai, Bueng Kan, Nakhon Phanom, Mukdahan, Amnat Charoen, and Ubon Ratchathani make up Thailand's contact zone (Figure 1) (Department of Export Promotion Ministry of Commerce, 2021).

From 2015 until 2020, the value of border trade between Thailand and neighboring nations expanded considerably, with Laos emerging as an increasingly important neighbor market. As the purchasing power of the Lao people rises even as the country's economic and social growth improves, yet Laos is unable to manufacture enough goods to fulfill domestic demand, imports become increasingly significant. In particular, consumer goods like clothing, electrical goods, and vehicle parts (including tires), as well as components for agricultural equipment, which Thailand can supply to fulfill the rising need for such goods in Laos as well. Thai goods are considered premium in Laos because they are high-end, high-quality, well-designed, and appear modern (Vijitnopparat, 2014; Kamol et al., 2019). Combined with the border between Thailand and Laos, which connects for 1,810 kilometers and has communication channels in many provinces of Thailand adjacent to Laos, such as Nong Khai, Bueng Kan, Nakhon Phanom, and Mukdahan, etc., it greatly facilitates border trade between them. In addition, Thailand has the second largest border trade value with Laos after Malaysia in neighboring countries (Malaysia, Myanmar, Laos, and Cambodia) (Office of the National Economic and Social Development Council, 2020).

Operational factors are regarded as crucial for border trading. Businesses operating borders must adhere to the supply chain principle. Starting with the flow of raw materials, planting preparation, and produce harvesting, which involves middlemen that distribute goods and make direct sales to customers, the flow of information across all activities is essential for efficient operation to satisfy operational demands and optimize operating procedures. To raise consumer-acceptable quality, boost production efficiency, and boost competitiveness in the market. This is regarded as the primary process of logistics management in terms of generating products from upstream, midstream, and downstream. Supply chain management may now be used as a source of competitive advantage both at the company and federal levels by boosting yields and lowering production costs. Thailand has given considerable weight to the logistics industry since it is crucial to both the operation of businesses and the growth of the nation, particularly in terms of establishing Thailand as a hub for logistics following the establishment of the ASEAN Community, which forces Thailand to speed up the development of its logistics infrastructure to remain competitive internationally. To encourage the company to adjust to the external environment. Furthermore, the development of logistics operations capable of connecting with one another both within and outside the country would boost competitiveness and allow the country to join the ASEAN community efficiently (Department of Trade Negotiations, 2013). As a result, the study of operational factors influencing the decision to choose the Thai-Laos border trade is a critical factor in boosting the sustainable development of the Thai-Laos border trade.

2. Research objectives

To study the operational factors that influence entrepreneurs' decisions to choose Thai-Laos border trade in Thailand's Nong Khai Province.

3. Literature Review

There are 2 main theories for the concepts and theories used in the study, which are as follows: 1. Logit Model, and 2. Operations factor.

(1) Logit Model are statistical models that are used to model binary or dichotomous dependent variables. This means that the outcome of interest can only take on two possible values. In most cases, these models are used to predict whether something will happen or not. (Gujarati, 2004)

(2) There are four components of operational factors: 1. appropriate product types to transport in border trade; 2. cost-effectiveness of moving to transport products; 3. appropriate product transportation distances; and 4. reasonable timing of product conveyance in border trade. (Pengnorapat et al., 2017; Roopsuwankun and Avakiat, 2022) So, there are four components that make up operational factors: cost, type, distance, and timing.

4. Conceptual Framework

The researcher can define the conceptual framework for research by studying concepts, theories, and related research. (Figure 2)

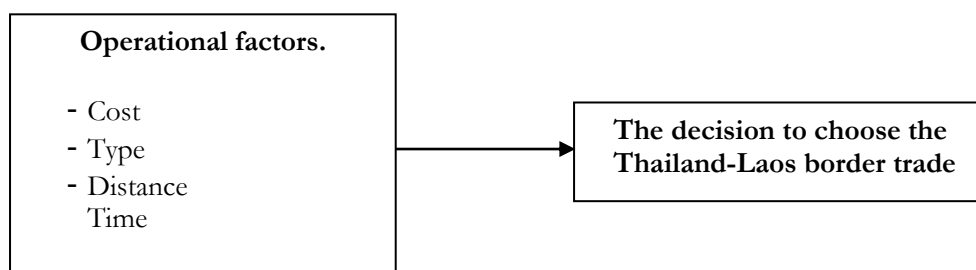


Figure 2. Conceptual Framework

5. Research Methodology

5.1 Population and Sample

The population used in this study is Nong Khai Province-based entrepreneurs that are members of the Office of Small and Medium Enterprises Promotion (OSMEP), which has a total of 1,066 members in 2021 (Office of Small and Medium Enterprises Promotion, 2021). As a result, the researchers applied the Krejcie and Morgan method to calculate a sample size that was 95% representative of the population (Krejcie and Morgan, 1970). A total of 283 samples were obtained from the calculations, but to ensure the accuracy of the calculations, 500 samples were used, and the samples were selected by simple random sampling, which were gathered between September and November 2021. Use Google Forms to deliver questionnaires due to the COVID-19 epidemic.

5.2 Data Collection

The research tool used for data collection was the questionnaire, which was divided into 2 parts: Part 1: Making the decision to conduct business at the Thai-Laos border in part 2, attitudes in a variety of areas about operations, entrepreneurs scored each sub-issue on 5 levels (Likert scale) (Likert, 1932) by picking just one answer. Therefore, it is necessary to develop a research tool by finding content validity from the Index of Item-Objective Congruence (IOC) of 3 experts. The assessment results appear to indicate that the value is between 0.67 and 1.00, which is not less than 0.50. It can be concluded that the questionnaire is suitable for use (Turner & Carlson, 2003). The reliability of the questionnaire (reliability test) was analyzed with a sample of 30 people. By determining the acceptance threshold for Cronbach's alpha coefficient of 0.70 or higher (Cronbach, 1951), the results of the reliability test were in the range of 0.725-0.927.

5.3 Data Analysis

The descriptive statistics were used to analyze the data of the samples, and the inferential statistics were used to analyze the operational factors of entrepreneurs influencing the decision to choose the Thailand-Laos border trade by using the Logit Model. Table 1 contains detailed information on the factors used in the study.

Table 1: The Details of the Factors Used in the Study

Factors		Details of the factors
Y	The decision to choose the Thailand-Laos border trade (DECISION)	1: Trade. 0: Not trade.
X1	The cost-effectiveness of moving to transport products. (COST)	It is an average value in the range of 1 to 5. 1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly Agree
X2	The appropriate product types to transport in border trade. (TYPE)	
X3	The appropriate product transportation distances. (DISTANCE)	
X4	The reasonable timing of product conveyance in border trade (TIME)	

The equations used to study the operational factors of entrepreneurs that influence the decision to choose the Thailand-Laos border trade are shown as follows.

$$DECISION_i = Constant + b_1COST + b_2TYPE + b_3DISTANCE + b_4 TIME + u_i$$

The researcher established the mean interpretation criterion for the factors evaluated in Table 2.

Table 2: Interpretation Criteria

Mean	Interprets
4.21-5.00	Very Important / Strongly Agree
3.41-4.20	Important / Agree
2.61-3.40	Moderately Important / Undecided
1.81-2.60	Slightly Important / Disagree
1.00-1.80	Unimportant / Strongly Disagree

Source: Ruangraphan, 1996

6. Result

Part 1: Data on operational factors and the decision to choose the Thailand-Laos border trade

From descriptive statistics on factors affecting Thai-Laos border trade, it was found that the overall opinion on the operational factors was determined to be at a high level, or important level. The factor with the highest average was the cost-effectiveness of moving to transport products (COST), which was the highest or very important level. Secondly, the reasonable timing of product conveyance in border trade (TIME) was at a high or important level. And the aspect with the least average was the appropriate product types to transport in border trade (TYPE) at a medium level or moderately important level, respectively.

Table 3: Interpretation Criteria

Operational factors	Mean	S.D.	Interprets
1. The cost-effectiveness of moving to transport products. (COST)	4.62	0.938	Very Important
2. The appropriate product types to transport in border trade. (TYPE)	3.22	0.721	Moderately Important
3. The appropriate product transportation distances. (DISTANCE)	3.54	0.761	Important
4. The reasonable timing of product conveyance in border trade (TIME)	3.80	0.854	Important
Total	3.96	0.832	Important

Details concerning the experiences and decisions made in relation to border trade are as follows: (1) Border trade

experience: 57.80%, or 289 of them, have had border trade experience at some point. and never, or 42.20%, out of 211 people. (2) If they were to choose whether to engage in border trade for the first time, 110 individual people with a decision-making rate of 52.13% choose not to trade, while 101 others with a decision-making rate of 47.87% opt to deal. (Table 4)

Table 4: Information about decisions and experiences on Thai-Laos border trade.

Entrepreneurs' Information	Number	Percentage
1. Experience in border trade		
Ever	289	57.80
Never	211	42.20
Total	500	100.00
2. Decisions on border trade(If the answer is "Never")		
Do	101	47.87
Undo	110	52.13
Total	211	100.00

Part 2:Information on operational factors of entrepreneurs influences the decision to choose the Thailand-Laos border trade.

The study found three independent factors that had an influence on decision-making (Table 5). All factors were checked for correlation before the analysis in the Logit model. All the independent factors that were to be analyzed had correlation values that were less than 0.75, suggesting that there were no issues with multicollinearity (Kaiwan, 2013).The Hosmer-Lemeshow test was used in the study to see whether the model was appropriate (Hosmer et al., 1997). The result showed that the model was appropriate because the statistical value was not statistically significant (P>0.10) (Vanichbuncha, 2006).And all the variables in the model could explain the likelihood of deciding on border trade equal to 52.40% (Pseudo R² = 0.524).

Table 5: An analysis of operational factors of entrepreneurs that influence the decision to choose the Thailand-Laos border trade

Factors	Coef.	S.E.	Sig	Marginal effect
Constant	3.025*	2.093	0.100	-
COST (X1)	0.489*	0.321	0.099	0.179
TYPE (X2)	-0.170	0.190	0.372	-0.039
DISTANCE (X3)	-0.787***	0.225	0.000	-0.216
TIME (X4)	0.398**	0.171	0.020	0.109
No. observations			211	
Log likelihood function			-191.402	
Pseudo R ²			0.524	
AIC			377.703	
BIC			424.872	
Hosmer & Lemeshow			0.367	

Notes: *, **, *** indicate significant at the P<0.10, P<0.05 and P<0.01, respectively.

According to Table 2, most of the variables are statistically significant. The negative sign of the appropriate product transportation distances (DISTANCE) is that individuals who are more likely to engage in agreeing with the appropriate product transportation distances (DISTANCE) are less likely to have border trade, i.e., an entrepreneur agreeing with the appropriate product transportation distances (DISTANCE) is 0.216 (21.60%) less likely to have border trade. The positive sign of the cost-effectiveness of moving to transport products (COST) is that individuals who are more likely to engage in agreeing with the cost-effectiveness of moving to transport products (COST) are highly likely to have border trade, i.e., an entrepreneur agreeing with the cost-effectiveness of moving to transport products (COST) is 0.179 (17.90%) highly likely to have border trade. And the positive sign of the reasonable timing of product conveyance in border trade (TIME) is that individuals who are more likely to engage in agreeing with the reasonable timing of product conveyance in border trade (TIME) are highly

likely to have border trade, i.e., an entrepreneur agreeing with the reasonable timing of product conveyance in border trade (TIME) is 0.109 (10.90%) highly likely to have border trade. It was discovered that border trade was unaffected by the appropriate types of products to transport (TYPE) or statistically insignificant ($P > 0.10$).

7. Conclusion and Discussion

The degree of the total operations factor was high. The cost-effectiveness of moving to transport products (COST) is the most average aspect. It is obvious that the greatest obstacle to border trade is the expense of transportation. This analysis is consistent with Chanthasat & Sangaarekul (2014) investigation into the variables influencing logistics costs, which finds the cost of transportation has the greatest effect on logistics costs, which is more than goods cost as expected. Next comes the cost of inventory storage, the cost of warehouse and management costs, respectively, which is also consistent with Kalasong (2008) finding that the impact on the overall logistics cost has an effect. At a large level and when considering each aspect, it was found that there were high averages in all 4 aspects, arranged in descending order of average, namely management, transportation, inventory, and information, respectively. This is consistent with the findings of the Logistic Regression research, which discovered that operators' operational factors affected people who had never traded before in their decision to select border trade by the cost factor of the product. Transportation distance (DISTANCE) and transit time (TIME) factors have an influence on border trade decisions. According to Pengnorapat et al. (2017), "the emphasis on public utilities and transportation is a crucial element in fostering border activities." And all the variables in the model could explain the likelihood of deciding on border trade equal to 52.40% (Pseudo $R^2 = 0.524$).

8. Suggestion

1. The lack of collaboration and commercial agreements between the governments of Thailand and Laos is one of the issues preventing cross-border commerce, as well as other hurdles. Thailand and Laos are both unable to create a solid link between their respective national single windows (NSW) and ASEAN single windows (ASW) for electronic data. As a result, promoting the adoption of cross-border transport facilitation agreements in the Greater Mekong Subregion will aid in boosting the competitiveness of transport providers and lowering the cost of shipping Thai and Laos goods.
2. Establishing banking and financial system in Laos owing to issues with the provision of financial services or insufficient bank payment systems, which make financial transactions challenging and a significant barrier to conducting trade relations.

References

1. Chanthasat, R. & Sangaarekul, A. (2014). Factors affecting logistics costs of Thailand. A case study of registered logistics operators with the International Freight Forwarders Association. *Journal of Research and Development Buriram Rajabhat University*, 9(1), 8-15.
2. Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, 16(3), 297-334.
3. Department of Trade Negotiations. (2013) AEC News Alerts. Retrieved 16 March 2022 from http://www.chanthaburi.doae.go.th/ASEAN/news/3_Jan_2013.pdf
4. Department of International Trade Promotion Ministry of Commerce. (2021). Fact Sheet. Retrieved 16 March 2022 from https://www.ditp.go.th/ditp_web61/article_sub_view.php?filename=contents_attach/753556/753556.pdf&title=753556&cate=994&d=0
5. Gujarati, D. (2004). Basic econometrics fourth (4th) edition. McGraw Hill Inc, New York, 109.
6. Hosmer, D. W., Hosmer, T., Le Cessie, S., & Lemeshow, S. (1997). A comparison of goodness-of-fit tests for the logistic regression model. *Statistics in medicine*, 16(9), 965-980.
7. Kaiwan, Y. (2013). Multivariate statistical analysis for research. Bangkok, Thailand: Chulalongkorn University Publisher.
8. Kamol, K., Wiroonrat, B., & Methiyothin, S. (2019). Economic impacts of border trade in the Northeast region after the Vientiane New World (VNW) Project in the LAO people's democratic republic. *Journal of MCU Nakhondhat*, 6(7), 3489-3507.

9. Kalasong, J. (2008). Factors affecting logistics costs of the company. CP. 7-Eleven [Public] in Bangkok. Retrieved 16 March 2022 from https://e-research.siam.edu/wp-content/uploads/2019/08/IMBA-2018-IS-Research-on-Business-Strategy-of-7-Eleven-in-Thailand_compressed.pdf
10. Krainara., C. & Routray., J. K. (2015). Cross-Border Trade and Commerce in Thailand: Policy Implications for Establishing Special Border Economic Zones. *Journal of Borderlands Studies*. 30(3), 345-363.
11. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
12. Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 22(140), 1-55.
13. Noisopha, S. (2014). The role of international trade through the land border of Thailand. *Academic Journal of Thonburi University*. 8(17), 118-126.
14. Nong Khai Provincial Agriculture and Cooperatives Office. (2021). BASIC INFORMATION ON AGRICULTURE AND COOPERATIVES IN NONG KHAI PROVINCE AND GENERAL INFORMATION OF THE PROVINCE FOR THE YEAR 2021 (CHAPTER 1). Retrieved 15 March 2022, from <https://www.opsmoac.go.th/nongkhai-dwl-preview-431291791848>
15. Office of Small and Medium Enterprises Promotion. (2021). Resource Information: Number of Small and Medium Enterprises 2020-2021. Retrieved 16 March 2021 from <https://data.go.th/dataset/https-sme-go-th-th-page-php-modulekey-348>
16. Office of the National Economic and Social Development Council. (2020). Annual Report 2020, Retrieved 16 March 2022 from https://www.nesdc.go.th/ewt_dl_link.php?nid=11911
17. Pengnorapat, J., Chaisena, M., & Sregongsang, S. (2017). Strategies for Development of Tourism on the Thailand-Cambodia Border in the Si Sa Ket Province Area under the Irrawaddy-Chao Phraya-Mekong Economic Cooperation Strategy. *Nakhon Phanom University Journal*. 7(1): 81-89.
18. Roopsuwankun, S., & Avakiat, S. (2022). Operational Factors of Entrepreneurs Affecting the Decision to Choose the Thailand-Myanmar Cross Border Trade. *Journal of Humanities and Social Sciences Thonburi University*. 16(1), 131-139.
19. Ruangraphan, C. (1996). Basic Statistics 2nd ed. KhonKaen, Thailand: Klang Nana Wittaya Printing.
20. Turner, R. C., & Carlson, L. (2003). Indexes of item-objective congruence for multidimensional items. *International journal of testing*, 3(2), 163-171.
21. Vanichbuncha, K. (2006). *Advanced statistics analysis with SPSS for Windows (5th ed.)*. Bangkok, Thailand: Chulalongkorn University Publisher.
22. Vjijttopparat, P. (2014). *Attitudes of Lao consumers towards potential products and services for export of Thai SMEs*. Bangkok: Office of Small and Medium Enterprises Promotion.
23. WorldAtlas. (2021). Maps Of Thailand. Retrieved 16 March 2022 from <https://www.worldatlas.com/maps/thailand>