



## The Problems of Cross-border logistics between Thailand – Malaysia in Sadao Border post

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### Abstract

This research is conducted on the purpose of investigating the root cause of border crossing operation problems and the appropriate modelling of border-crossing problems at the Sadao border post by using a literature review method from secondary sources and collect the information from various type of international and domestic documents, the findings were analyzed and the results were reported with descriptive analysis. The importance of cross-border logistics and the type of cross-border operations are taken in to account. The study results reveals that the three main aspects causing cross-border logistics problems as summarized in the figure 1 which concerned to 1) cross-border operations 2) logistics service provider and 3) government administration. The most mentioned issued involved operations at the border area for trading which is performed by both logistics service providers and government administration which should concentrate in the context of cross-border logistics in Sadao border post for further studies. The study also suggests that the problem of operational cross-border logistics should be focused.

**Keywords:** *Cross-border logistics, Sadao border, Cross-border problem*

### 1. Introduction

With nearly 38 years of economic activity in Thailand, the export rates have generally risen year by year from USD 5.2 billion in 1979 to USD 235.1 billion in 2017, averaged USD 10.28 billion from 1991 until 2018 (Bank of Thailand [BOT], 2018). Exports from Thailand increased by 7.1% from a year earlier to a record-high of USD 22.36 billion in March of 2018, after a 10.3% rise in February. Moreover, from January to March 2018, outbound shipments rose by 11.29% year-on-year to USD 62.83 billion. In 2017, sales went up by 9.9% to USD 236.7 billion. These historical data reveals the gross domestic product (GDP) of Thailand grew by 4% year-on-year in the fourth quarter of 2017. Whilst 2018, the government estimates exports to grow by 8% (Trading Economic, 2018). Nowadays, Thailand is an export oriented economy with exports accounting for around 65% of the GDP.

The reasons why Thai exports continuously increased is because of government spending and investment rose at softer paces while private consumption and exports grew firmly, especially the developing in cross-border improvement. For instance, in 2008 Thailand reduced the time required for trading across borders by implementing a system allowing electronic submission of customs declarations and simultaneous verification of data by different agencies, in 2009, Thailand reduced the time and number of documents for exporting and importing by upgrading the Electronic Data Interchange (EDI) system (The World Bank, 2018). In 2007 – 2011, the country had clearer direction to promote Thailand as South-East Asia logistics hub with logistics system development projects, (Limcharoen, Jangkrajarn, Wisittipanich & Ramingwong, 2017) implemented by Thailand's Logistics Development Strategy (2007-2011) that purposed to establish a world-class logistics system to support Thailand as Indochina's trade and investment center. The Thai government expected to enhance trade facilitation with the aim of increasing cost efficiency, customer responsiveness and reliability and security, to create value-added for the logistics and other supporting industries. (Office of The National Economic and Social Development Board [NESDB], 2018) The National single Window – NSW also had been established during this period since the Ministry of Information Technology and Communications developed e-Logistics into a central system in order to provide import/export and logistics services for the linkage of information in a G2G, G2B and B2B basis (Raktam & Keawkitipong, 2015).



The growing in Thailand export is either caused by focusing on logistics and establishing information system to facilitate trading across border or the investment in the Special Economic Development Zones (SEZs) for the benefit of investors who are interested in locating their investment in these area. The concept of SEZs has been widely studied in many countries as an approach for attracting investment and fostering economic growth and development (Walsh, 2013; Sigler, 2014) with more than 100 countries worldwide operating SEZ programs and several thousand individual zones. Thailand is one that conducted the SEZs in border areas which are at Kanchanaburi connecting to Myanmar, the People's Republic of Laos, at Chiang Rai, Mukdahan, Nong Khai and Nakhon Phanom; Cambodia at Sa Kaeo, and Malaysia at Songkhla and Narathiwat. At present, distribution centers and labor-intensive industries are beginning to take interest in investing in these countries in order to access labor and to distribute goods to neighboring countries conveniently, as well as import goods, including raw materials or parts, from neighboring countries to Thailand (Bank of Thailand [BOT], 2018). Therefore, the strong concentration in the cross-border logistics would bring more potential and competitive advantage for international business operating.

With great commitment and clear direction to improve the economy, Thailand results in 10 top improvers ranked on ease of doing business in 2017 which means the regulatory environment is more conducive to the starting and operation of a local firm. The results from intentional implementation of cross-border development in Thailand drove Thailand to achieve the highest potential for Trading Cross-border among five border countries with in no. 59 of the world ranking in 2017 and no. 27 for Ease of doing business ranking in 2018 (The World Bank, 2018). Thus, the economies that rank highest on the ease of doing business are not those where there is no regulation, but those where governments have managed to create rules that facilitate interactions in the marketplace without needlessly hindering the development of the private sector. Table 1 speculates the ranking of Thailand and Thailand's border countries in ease of doing business and trading cross-border in 2018. The table significantly illustrates that Malaysia and Thailand are doing well to support the economy of both countries. Nevertheless, another three countries including Myanmar, Lao PDR and Cambodia still need more development. The increasing efficiency and potential of cross-borders logistics in Thailand would affect positive impacts for the higher level competitive advantage in neighbor countries and made up their trade competencies which link to build stronger economy in among countries of ASEAN Economy Community (AEC).

**Table 1** Economy ranking in ease of doing business and trading cross-borders in Thailand and Thailand's border countries in 2018

Countries	Ease of Doing Business Rank	Ease of Doing Business Score	Trading cross-borders rank
Malaysia	15	80.60	48
Thailand	27	78.45	59
Cambodia	138	54.80	115
Lao PDR	154	51.26	76
Myanmar	171	44.72	168

Source: (The World Bank, 2018)

Malaysia and Thailand appears the highest competitiveness in cross-border trade which the first and second ranked in ease of doing business in 2018 as shown in the Table 1. Both countries share a border that stretches for 647 kilometers, and their bilateral trade is already the largest in ASEAN in terms of value. Table 2 clearly illustrates that Thai-Malaysian border trade averaged THB 48,384.90 million in January – November 2018, accounting for more than half of all Thailand's border trade (51.00 %) when compares to the trade value with Cambodia, Laos and Myanmar.



**Table 2** Overall cross-border trade value with Thailand neighboring Countries (Malaysia, Lao PDR, Myanmar and Cambodia) from January – November 2018

Countries	Trade Value (THB: million)	Proportion (%)
Malaysia	525,667.99	51.00
Lao PDR	195,908.93	19.00
Myanmar	176,846.07	17.16
Cambodia	132,376.84	12.84
Total	1,030,799.83	100.00

Source: Department of Foreign Trade [DFT], 2019.

Countries with shared borders have higher chances of stronger bilateral trade relation. Therefore, the borders have significant positive impact on bilateral trade (Mohmand, et al. 2015). The increase of trade values in Malaysia and Thailand recent year signs favorable improved ranking in Global Competitiveness Index 4.0 2018 edition at no. 25 and 38 respectively from 140 countries' economy (World Economic Forum, 2018). The reasons why their ranking have been improved are because of the cost and complexity reduction they made for making easier to trade across border. Both countries improve a lot in electronic submission and processing of document for import-export. Malaysia is a particularly country that strengthen border infrastructure by upgrading the management system, expanding terminal and decreasing the cut-off time, and also enhanced customs administration and inspections for cross-border operational. (The World Bank, 2018), result by the growing of cross-border trade value from year 2016-2018 which year 2018 have totally reached THB 525,667.99, increasing 0.84% compared to the last year that was at THB 521,267.79.

There are 10 border posts operating cross-border trade between Thailand and Malaysia. Songkhla is a province with highest trade value where includes Sadao, Padang Besar, and Ban Prakob borders, another posts are located in other provinces connected to Malaysia which are Betong border in Yala province, Su-ngai Kolok, Ban Buketa and Takbai borders in Narathiwat province, Satun and Wangprachan in Satun province and Patani border at Patani province. Sadao border has continuously remained on the top lists of trade value which 7.68% increased from 2017-2018 (Trade and Investment Cooperation Division, Department of Foreigner Trade [DFT], Thailand, 2019).

A maximum border trade values at Sadao borders causes both advantages and disadvantages. The positive impacts obviously recognized are to strengthen value of international commerce in the country and made up their trade competencies in among countries of the same economic regions, also increase amount of trade and investment around border areas. It results business expansion and population surrounding will be employed which better quality of life. Moreover, it also includes improving life standard, social-economical position of the region communities because the local communities in the border area are more and more involved with the cross-border cooperation.

Meanwhile the value of the imports may take a lot of shipments and vehicles moving through the border post, resulting in longer border crossing times. These delays increase the cost of transportation and trade, reducing industry competitiveness and economic development, and affect local communities, the state and the nation. Long queues also have a negative impact on the border environment such as emissions attributable to vehicle idling and when congestion the border eliminates cross-border trips, the customs revenues also decrease (Cornejo, Prozzi, Susen & Borrego, 2017). Government sectors in Thailand and Malaysia also have been continuously put effort to streamline efficiency of cross-border trade because they both recognize that a significant part of the economy in both Thailand and Malaysia depends on the efficient movement of goods across. Malaysia and Thailand have agreed to remove bureaucratic procedures at border crossings with expecting to operate 24 hours (Currently, the borders are open for 18 hours daily) and the government will also be building two bridges which will connect Kelantan to the border for a facilitation movement of goods said by Prime Minister Tun Dr Mahathir Mohamad on 24th October 2018 during his visit to Thailand (Parpart, 2016; Jaafar, 2018; Palansamy, 2018).

Therefore, this paper is conducted on the purpose of investigation the root cause of border crossing operation problems and the appropriate modelling of border-crossing problem in Sadao border post because the Sadao border post is an extremely important border in Southern Thailand with significant number of trucks and passenger vehicles going through Malaysia. The results from the study would be necessary



information of seeking solutions to the problems in each step of operations which can effect to lower efficiency and performance of cross-border trade. Moreover, it should be extended for further studies that the stakeholders and all concerned in the process of cross-border operation are concentrated as supportive factors or significant drivers influencing the efficiency of operational cross-border in that area or other problematic areas. This would definitely increase trade value, more opportunities for international business expanded, also eliminate the problems of entire logistics and transportation for both countries.

## 2. Objectives

1. To investigate the root cause of cross-border logistics problems
2. To propose the appropriate model of cross- border logistics problem between Thailand – Malaysia in Sadao border post

## 3. Materials and Methods

This research uses a literature review method from secondary sources to study and collect the information from various type of international and domestic documents and works, including books for conceptual definitions, research papers for relationship-building and predications, and published documents. Moreover, the internet searching is also used through online databases, including Science Direct, Scopus, EBSCOhost, Proquest, etc., the reasoning behind this choice is principle the high reputation as the leaders among business, logistics and international trade journals. Moreover, previously statistics data published of national and international information concerned cross-border and logistics from relevant government agencies and international organization were examined depending on situation effected to cross-border performance in order to analyze the documents. The interpretation and inference by the authors was needed. Inferential coding was based on authors' description and categorization of the problems happened in cross-border operation. Following a detailed review of all categories, summary tables were extracted and model of cross-border logistics problems was created.

## 4. Results and Discussion

### 4.1 Importance of cross-border logistics

Logistics processes influence almost every circadian rhythm of human activity, directly or indirectly. The significant impact logistics has on society, industries, organizations and individuals. Many academicians determine the definition involving logistics.

Kotler and Killer (2015) identified that logistics is defined as “planning implementing and controlling the physical flow of material and finished goods from point of origin to point of use to meet customer’s need at a profit.

Stock and Lambert (2001) stated that logistics management is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services and related information form point-of-origin to point-of-consumption in order to meet customers’ requirement. This definition includes the flow of goods, services and information in both the manufacturing and service sectors.

In context of border crossing, the operations in this area are few pieces of whole system of logistics activities as its roles are a place of making product flows where both opportunities and threats could come in the same time (Slusarciuc, 2016). Such as, the border area has a significant potential for knowledge transfer but it also faces with strong barriers under international standard which are inflexible. Moreover, smooth and efficient movement of all resources (goods, services and information) in cross-border operations would maximize organizations’ success.

### 4.2 Type of cross-border operations

Interesting results show many types of cross-border operations have been found from plenty of studies that focus on cross-border operations in different areas and purposes.

#### 4.2.1 Cross-border tourism

Border tourism is the temporary displacement of people in the dividing line between two countries contiguous areas. This activity promotes the economic development of these geographical regions (Río,



Agüera, Cuadra, & Morales, 2017). The organizational model of cross-border tourism envisages a direct cooperation between National Tourism Administration (NTA) and National Tourism Organization (NTO). It covers three levels: national, regional, and local. A particular role is given to the local government administration at a regional and local level of the organizational system (Studzieniecki, Palmowski & Korneevets, 2016).

A study of the system of cross-border tourism in the Polish-Russian borderland by Studzieniecki, Palmowski and Korneevets (2016) pointed to investigate Cross-border tourism development. Participants are the key stakeholders of tourism organization and the area of study were at Polish-Russian Borderland. The variables affecting included cross-border cooperation, border traffic and border formalities. Every cross-border effects the development of tourism in a different way (5 types of borderland) (1) Frontier zone is an area of toughened regime and control which has restrictive effect on tourism development (2) Administrative region is an area of formal cooperation. (3) Local border traffic area effected more to cross-border tourism development due to lifting the visa obligation. (4) Eligible area determines the territory where EU-funded projects can be implemented. (5) Operational territory of Euro regions has carried out activities to develop cross-border tourism.

#### 4.2.2 Cross-border ecommerce

The rise of the internet is often associated with the “death of distance” or at least the decreasing relevance of geographical distance supply the information. (Gomez-Herrera, Martens, & Turlea, 2014) and people currently are able to shop for goods and services online offers customer several benefits. Individual's decision to perform cross-border e-commerce (CBeC) in European Union EU was intended to study by Valarezo, Pérez-Amaral, Garín-Muñoz, Herguera García, and López (2018), especially interested in the promotion of CBeC because it is an important tool in its strategy to achieve the Digital Single Market in Europe. The study focused the drivers and barriers to cross-border e-commerce in three mode of cross-border e-commerce which are cross-border e-commerce in Spain (CBeC), cross-border e-commerce in European Union (CBeC\_EU) and cross-border e-commerce to the Rest of the World or outside the EU (CBeC\_RW), using data from the 2016 survey on ICT usage in household. Independent variables include Sociodemographic (Gender, Age, Education, and nationality), Individual Skills (PC skills, internet skills, online opinion seeker), Risk (Internet trust) and Economic (Income). A summary of the main findings contained the statement as follows: being a male is positively related to using cross-border e-commerce, and age is mostly significant with negative effect on CBeC for those aged above 65. Education is positively related to CBeC\_EU while it seems mostly insignificant in the other cases. PC skills is significant and positive in the models, and internet skills are mostly significant especially in the high and very high levels. Trust on the internet seems to be relevant and positive for becoming a cross-border e-buyer especially in the case of higher levels of trust. This research suggested that policy instruments are needed to promote cross-border e-commerce; knowledge of foreign languages also plays a decisive role in buying online abroad. Moreover they should be targeted at population groups with less cross-border e-commerce penetration (older people and housekeepers who have more time to learn.). Finally, Spain should be focusing on ensuring equal conditions for online buyers and sellers across Europe through homogenization of regulation.

Gomez-Herrera, et al., (2014) investigated drivers and impediments for cross-border e-commerce in the EU. Independent variables include: 1) Distance 2) Common Language 3) Governance 4) Parcel delivery cost 5) Online payment systems 6) Home bias. Data collection by online consumer surveys in the 27 EU member states of 29,100 consumers, using HMR & OLS regressions for analysis.

The findings revealed that the geographical distance is strongly reduce in online trade due to a drastic reduction in information cost in the digital economy that enables consumers to scan a much wider and place their buying orders.

When the language of the exporter country is English, French or German, there is an additional positive effect on trade, especially English-language exporters which have a strong advantage in online markets. The quality of the legal system is not statistically significant because EU policy makers have fixed Digital Agenda Policy targets for e-commerce in term of increasing volumes of online cross-border trade.



Efficiency of online payments systems is an important driver for cross-border online trade in EU. Home bias is not significantly different in online markets compared to traditional offline trade.

#### 4.2.3 Cross-border mobility

Konrad (2015) studied evolving Canada-United States cross-border mobility in the Cascade Gateway. A survey of 100 stakeholders in the Cascade Gateway and location of study was in Canada-United States in the Cascade Gateway. The border traffic data and document impacts of security on mobility both in US and in Canada, and articulate the response of stakeholder to the heightened security. Among these responses are role enhancement of the international mobility and trade corridor project (IMTC). Expansion and alignment of cross-border transportation system, transnational co-operation in mobility governance, and initial reconstitution of a culture of cross-border movement.

Bochaton (2015) studied Cross-border mobility and social networks: Laotians seeking medical treatment along the Thai border, location at Lao PDR. Factor influencing cross-border mobility are 1) Word of mouth 2) social network 3) social capital. The Interview were conducted for participants with cross-border patients (55), Laotian and Thai medical doctors (6), Thai Social workers (5) and official working in public institution(12) Socioeconomic and spatial factors partly explain cross-border mobility, patients' social networks significantly influence treatment itineraries throughout the decision-making process, including logistical and financial considerations.

The study of cost and benefit of speeding up reporting formalities in maritime transport by Vaghi and Lucietti (2016) had investigated Italy under the directive 2010/65/EU on "Reporting formalities for ships arriving in and/or departing from ports of the member state of EU." The independents used are National Single Window, Port Management system integration and the Dwell time. The conclusion of study reveal several approaches to complete the study objectives which are 1.Reduce administrative costs for Authorities and report parties in the port community 2) Improve time-release of customs declaration, and lower time costs for goods due to lower waiting time for storage at port before inspections 3) Potential benefit for the logistic chain triggered by the decrease of dwell time for container in ports.

#### 4.2.4 Cross-border logistics

In previous research with regards to cross-border logistics function that reveals overall problematic area in cross-border logistics are shown as follows:

Vaičiute, Skirmantiene and Domanska (2017) investigated three components for competencies of the key players in cross-border process which are competencies of transport management specialists, executives' attitudes and skills and capabilities that match with the ability or competencies to operate cross-border logistics due to the problem of rapidly changes and diversity in the labour force as well as the labor movement. The advantage of this research greatly responds to current trade labour situations causing organizations to rethink human resource strategies and reactions to changes.

Studzieniecki, Palmowski and Korneevets (2016) pointed to focus factors affecting Cross-border operations in term of tourism development. The results found three causes effects development of cross-border tourism including: 1) Cross-border cooperation that involved into cooperation increasing the role of governmental provinces, also the development of economic and social entities was increasingly being intensified. 2) Border traffic that effected more to cross-border tourism development due to lifting the visa obligation, and 3) Border formalities and border traffic were related as the formalities and documents needed to cross-border were a significant factor affecting the dynamic of border traffic as well.

Leung, Wu, and Lai (2002) investigated Cross-border logistics problems which effected from: 1) transportation cost which represents the volume of products to be transported using route by lorries are hired on a per order basis; 2) hiring cost of product delivery between two countries; 3) inventory cost for storing excess products in the warehouses; and 4) allowance or an extra bonus paid to a driver who operates lorry more than one cross-border round-trip per day. Findings of this study assure that the mentioned cost can be saved at least 75% from efficiency operations especially in transportation cost.

Ownership in cross-border acquisitions (CBAs) and the role of government support was studied by Pinto, Ferreira, Falaster, Fleury, and Fleur (2017) which aimed to investigate how the role of government support and pro-market reforms affect ownership in CBAs due to when institutional distance is low.



Similarly, lower levels of ownership would be preferred in order to learn or access novel business and country-level knowledge. The study focused on 3 components of the role of government support affecting to the ownership in CBAs consisting of institutional distance, knowledge access (Ex: business knowledge access, country knowledge access) and government support (Ex: financing, stock participation, political ties). The results confirm that governments have both a direct and indirect impact on the ownership acquired by customers.

The role that logistics plays in supporting the activities within an economy was determined by Gani (2017) due to the continuing rise of world trade and the desire by many countries to speed up the pace of integration within the global trading which reflect that logistics achievement is low and middle-income group of countries are at lower levels than the high-income countries. Therefore, this study analyzed logistics performance in international trade based logistics data from the World Bank (2017) and the core measure is the overall logistics performance index, measured on a scale of 1 (low) to 5 (high). There are 6 dimensions of logistics performance consisting of: 1) ability to track and trace consignments, 2) competence and quality of logistics services, 3) ease of arranging competitively priced shipments, 4) efficiency of customs clearance process, 5) frequency which shipment reach consignee within scheduled or expected time and 6) quality of trade and transport-related infrastructure. The findings of this study provide strong evidence of the positive role that logistics plays in increasing trade.

Dong and He (2018) studied the value chain of timber from Myanmar to China by identifying priority issues along the value chain of China importing timber products from border areas of Myanmar. This is because of China's increasing timber imports is now receiving extensive attention from the international community. Describing institutions along the value chain and the actors directly involved in the value chain, and calculates the profit distribution within the value chain. The results show the Sino-Burmese border timber trade originated from traditional border trade and was recently booming along with the economic development of China.

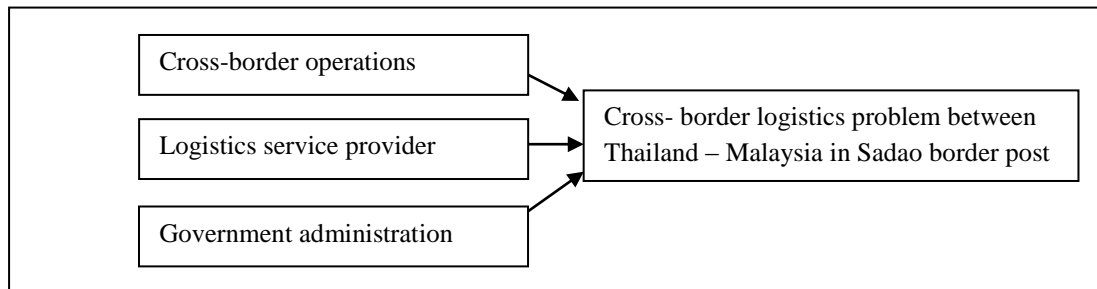
**Table 3** Summary of previous studies on Cross-border logistics problems

Author & Year	Problem	Concerned
Vaičiute, Skirmantiene and Domanska (2017)	Competencies of staffs concerned cross-border operation	Operations/ Logistics service provider
Studzieniecki, Palmowski and Korneevets (2016)	Cross-border operations in tourism development	Operations
Leung, Wu & Lai (2002)	Cross-border efficacy problem	Operations
Pinto et. al (2017)	The role of government support in ownership in cross-border acquisitions (CBAs)	Operations/ Government administration
Gani (2017)	Logistics performance in international trade based logistics	Operations/ Logistics service provider/ Government administration
Dong and He (2018)	Import-export value & supply chain	Operations/ Logistics service provider/ Government administration

Source: Author, 2019

## 5. Conclusion

From the literature review of previous studies related to the cross-border logistics revealed the three main aspects causing cross-border logistics problems as summarized in the Figure 1 which concerned: 1) cross-border operations 2) logistics service provider and 3) government administration. The most mentioned issued involved operations at border areas for trading which was performed both by logistics service providers and government administration.



**Figure 1** The model of cross- border logistics problem between Thailand – Malaysia in Sadao border post.

Source: Author, 2019

This propose model was designed to identify the root cause of general cross-border logistics. However, the research suggests that this model should be proved by studying the context of Sadao border post which the areas (both Thailand and Malaysia) have been effected by over-taking of vehicles movement, long border crossing time and shipment delay. It directly impacts the reduction of industry competitiveness and economic development which should be importunately concentrated for further studies. The results also suggests that the problem of operational cross-border logistics should be focused.

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## 7. References

- Bank of Thailand. (2018). *International trade*. Retrieved from <https://www.bot.or.th/English/Statistics/EconomicAndFinancial/ExternalSector/Pages/StatInternationalTrade.aspx>
- Bochaton, A. (2015). Cross-border mobility and social networks: Laotians seeking medical treatment along the Thai border. *Social Science & Medicine*, 124, 364-373.
- Cornejo, L. E., Prozz, J., Susen, J. & Borrego, M. (2017). *How long is too long to cross the border?*. Texas A&M Transportation Institute.
- del Río, J., Agüera, F. O., Cuadra S. M., Morales, P. C. (2017). Satisfaction in border tourism: An analysis with structural equations. *European Research on Management and Business Economics*, 23(2), 103-112.
- Department of Foreign Trade [DFT]. (2019). *Regional cooperation and regional agreements*. Retrieved from <http://www.dft.go.th/en-us/Information-Service/Regional-Cooperation-and-Regional-Agreements>
- Dong, M., & He, J. (2018). Linking the past to the future: A reality check on cross-border timber trade from Myanmar (Burma) to China. *Forest Policy and Economics*, 87, 11-19.
- Gani, A. (2017). The Logistics performance effect in international trade. *The Asian Journal of Shipping and Logistics*, 33(4), 279-288.
- Gomez-Herrera, E., Martens, B. & Turlea, G. (2014). The drivers and impediments for cross-border e-commerce in the EU. *Information Economics and Policy*, 28, 83-96.
- Jaafar, M. Z. (2018). *M'sia, Thailand agree to boost trade, resolve border issues*. Retrieved from <https://themalaysianreserve.com/2018/10/25/msia-thailand-agree-to-boost-trade-resolve-border-issues/>





- Konrad, V. (2015). Evolving Canada–United States cross-border mobility in the Cascade Gateway. *Research in Transportation Business & Management*, 16, 121-130.
- Kotler, P. & Keller, K. L. (2015). *Marketing management (14th ed.)* New Jersey: Prentice Hall.
- Leung, S. C. H., Wu, Y., & Lai, K. K. (2002). An optimization model for a cross-border logistics problem: a case in Hong Kong. *Computers & Industrial Engineering*, 43, 393-405.
- Limcharoen, A., Jangkrajang, V., Wisittipanich, W., & Ramingwong, S. (2017). Thailand logistics trend: Logistics performance index. *International Journal of Applied Engineering Research*, 12(15), 4882-4485.
- Mohmand, Y. T., Salman, A., Mughal, K. S., Imran, M., & Makarevic, N. (2015). Export potentials of Pakistan: Evidence from the gravity model of trade. *European Journal of Economic Studies*, 14(4), 212-220.
- Office of The National Economic and Social Development Board [NESDB]. (2018). *Thailand GDP Quarter 4 of year 2017 and trend in 2018*. Retrieved from [http://www.nesdb.go.th/ewt\\_dl\\_link.php?nid=5165](http://www.nesdb.go.th/ewt_dl_link.php?nid=5165)
- Palansamy, Y. (2018). *Malaysia, Thailand cross-border trading to be round-the-clock, says Dr M*. Retrieved from <https://www.malaymail.com/s/1686259/malaysia-thailand-cross-border-trading-to-be-round-the-clock-says-dr-m>
- Parpart, E. (2016). *Thai-Malaysian border trade ready to move to the next level*. Retrieve from <https://www.bangkokpost.com/tech/apps/1112357/thai-malaysian-border-trade-ready-to-move-to-the-next-level>.
- Pinto, C. F., Ferreira, M. P., Falaster, C., Fleury, M. T. L., & Fleury, A. (2017). Ownership in cross-border acquisitions and the role of government support. *Journal of World Business*, 52, 533-545.
- Raktam, P. & Kewakitipong, L. (2015). The Factors and Strategy to Persuade the Use of NSW, *NIDA Business Journal*, 16, 26-59.
- Sigler, T. J. (2014). Panama's Special Economic Zones: Balancing Growth and Development. *Bulletin of Latin American Research*, 33(1), 1–15.
- Slusarciuc, M. (2016). Coordinates and representations of architecture for a regional cross-border development strategy. *Centre for European Studies (CES) Working Papers*, 8(1), 182-196.
- Stock, J. R. & Lambert, D. M. (2001). *Strategic Logistics Management (4th ed.)* Singapore: McGraw-Hill.
- Studzieniecki, T., Palmowski, T., & Korneevets, V. (2016). The System of cross-border tourism in the Polish-Russian borderland. *Procedia Economics and Finance*, 39, 545-552.
- The World Bank. (2018). *The world bank annual report 2018*. Retrieved from <https://data.worldbank.org/country/Thailand>
- Trading Economics. (2018). *Thailand GDP Annual growth rate Thailand exports*. Retrieved from <https://tradingeconomics.com/thailand/gdp-growth-annual>
- Vaghi, C., & Lucietti, L. (2016). Costs and benefits of speeding up reporting formalities in maritime transport. *In Transportation Research Procedia*, 14, 213-222.
- Valarezo, Á., Pérez-Amaral, T., Garín-Muñoz, T., Herguera García, I., & López, R. (2018). Drivers and barriers to cross-border e-commerce: Evidence from Spanish individual behavior. *Telecommunications Policy*, 42(6), 464-473.
- Vaičiute, K., Skirmantiene, J., & Domanska, L. (2017). Assessment of transport specialists' competencies in transport/logistics companies. *In Procedia Engineering*, 187, 628-634.
- Walsh, J. (2013). Social policy and special economic zones in the greater Mekong subregion. *International Journal of Social Quality*, 3(1), 44-56.
- World Economic Forum. (2018). *The global competitiveness report 2017–2018*. Retrieved from <http://reports.weforum.org/global-competitiveness-index-2017-2018/competitiveness-rankings/>