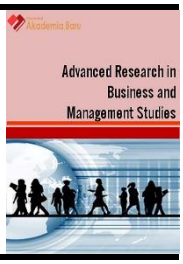
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Opportunities and Challenges of Malaysia Cross Border Inland Port

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ABSTRACT

Malaysia is a country that has borders close to 3 countries, namely Thailand, Indonesia and Singapore. This strategic location helps Malaysia take advantage of cross-border trade involving these three countries. As a result, there are several sea and land ports built near the borders of the three countries to facilitate international trade with neighbouring countries. However, the facilities available at the sea and land ports near the neighbouring country are seen to be reaching the maximum level of utilization to accommodate the existing cargo capacity that is transited before being sent to the nearby sea port. This study was conducted for the purpose of identifying the opportunities that exist in developing international trade activities in addition to looking at the challenges being faced by key stakeholders involving this cross-border trade. This study was conducted qualitatively involving the collection of research information through interviews conducted with several port personnel. The findings of the study were analysed manually through thematic methods. The study found that, in terms of trade opportunities, some provinces in the south of Thailand are highly dependent on the ports available in the country given the short travel distance to ship their trade goods to the port compared to their own country. However, inland ports in our country have almost reached the maximum level of use. In addition, this study also found that there is a shortage of ships entering the port of Penang due to the demand for ships rising sharply for trade routes involving countries outside Asia. In this regard, Malaysia is seen to be able to become a major trade hub involving Southeast Asian countries if we are able to improve existing facilities of ports in this country as well as reduce bureaucracy for the purpose of increasing existing productivity to speed up the clearance process.

1. Introduction

Today, countries, especially in Southeast Asia, realize that the logistics and transportation sector is very important and a catalyst for the development of a country. Countries such as Malaysia,

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Singapore and Thailand are located on the route that connects Asia and Europe and this route is a very busy and important trade route, especially for international trade purposes. Singapore, for example, is one of the countries with busy port other than Malaysia through several major ports such as Port Klang, Port Tanjung Pelepas and Penang Port.

Apart from sea ports, the government has also identified the importance of creating inland ports that serve as feeders to existing sea ports. Among the sustainable solution methods to improve the transportation system in sea ports is the introduction of inland ports. Inland Ports have been identified to have the potential to reduce congestion found in sea ports and at the same time can reduce costs and reduce the rate of environmental pollution [5]. In Malaysia, there are 4 inland ports built in Peninsular Malaysia to boost trade activities, namely Padang Besar Cargo Terminal (PBCT), Ipoh Cargo Terminal (ICT), Nilai Inland Port (NIP) and Segamat Inland Port (SIP). However, only PBCT is located near the international border, which is close to Thailand. Inland ports offer improvements and are a compliment to seaport in addition to being seen as having the potential to generate various benefits, especially in increasing the efficient rate of a country's transportation system [5]. An inland port is usually built in a strategic location that is close to the railway, has a good road system or near an industrial area. Through the various infrastructure and basic services that can be provided by an inland port, it will be an attraction to the inland port [1]. The services provided at an inland port are vary and beyond standard services. There are inland ports that provide transportation services via railway, from or to sea ports, transfer and delivery services, customs clearance as well as storage services [8].

The development of inland ports was made based on several considerations. Among the considerations of inland port development is based on its location close to the port, close to cities and industrial areas or in areas close to borders [6]. Each type of inland port plays various roles such as:

i. Freight hub
ii. Cargo distribution hubs and trade gateways from foreign countries
iii. A multi-modal transportation hub

According to Black *et al.*, [5] the location of an inland port will determine its success. Inland ports should be located close to industrial zones, seaports or international borders to create more demand for such inland ports and among other attractions are, inland ports should also have good service quality as well as reliable (safe and timely) [3]. Most inland ports in Malaysia have limited infrastructure and facilities and this problem causes inland port support to nearby ports to be insufficient [3]. The very limited container record proves that inland ports in Malaysia are still unable to accommodate the large number of containers and the services provided by local inland ports are insufficient to meet customer needs. According to Jagan *et al.*, [3] distance from ports, access to road and rail systems are among some of the other problems that are constraints on inland port operations. Xie *et al.*, [4] mentioned that efficient and sophisticated services are essential to improve inland port performance.

2. Padang Besar Cargo Terminal (PBCT)

Padang Besar Cargo Terminal (PBCT) was built in 1984 and the purpose of PBCT was to function as an Inland Port. PBCT is the first inland port built before Ipoh Cargo Terminal (ICT) and managed by Multimodal Freight Sdn Bhd which is a subsidiary of Keretapi Tanah Melayu Berhad (KTMB). PBCT is located between the borders of Malaysia and Thailand making it a very strategic location for

cross-border business. PBCT staff currently consists of locals from around Perlis. Currently, PBCT plays a role as a major inland port in Malaysia and is capable of managing 145,000 TEUs per year and an average of over 12,000 TEUs per month. PBCT is the main hub for the transportation of cargo of various goods from Thailand to Penang port apart from being an empty cargo transportation hub from Penang port back to PBCT. PBCT is equipped with facilities for custom clearance for the purpose of managing 95% of containers consisting of transit containers.

In terms of land area, PBCT is a smaller inland port but able to handle a larger amount of cargo compared to other ports. However, if the bureaucracy from the authorities can be reduced, it is expected that PBCT will be able to further increase the existing cargo management capacity. In 2015, PBCT was used as a benchmark for inland ports to be built between Thailand and Cambodia.

Currently, the cargo transferred at PBCT consists of raw materials or semi-finished materials and not a finished product. These raw materials will be shipped mostly to China to be processed into finished products. Most of PBCT's clients are from Nakhorn Si Thammarat, Trang and 14 other provinces within a radius of 700km from Southern Thailand.

On average, there are about 45,000 TEUs of products or raw materials produced within a radius of 700 kilometers monthly from Nakhorn Si Thammarat and other provinces of Southern Thailand but only around 22,000 TEUs of products are shipped to Penang port and PBCT is only involved in managing around 10,000 TEUs per month and the remaining 12,000 TEUs enter Malaysia through Bukit Kayu Hitam or by barges.

If PBCT wants to take the opportunity to manage 22,000 TEUs of products produced (in southern Thailand), the size of PBCT needs to be further increased where at present, a maximum of 145,000 TEUs can be managed within a year or an average of 12,000 TEUs per month.

Currently, there will be another Inland port in Perlis with an area of 500 acres under construction and in terms of size, it is almost the same as Kota Perdana and is expected to be able to accommodate around 1.2 million TEUs per year based on expectations made.

3. Objectives of the Study

This study was conducted for the purpose of identifying the challenges and opportunities faced by inland ports in Malaysia. For this study, the focus of the study is the inland port located near the international border in the area of Padang Besar, Perlis. In Padang Besar Perlis, the northern most area in peninsular Malaysia, there is a cargo terminal that serves as an inland and feeder port for Penang port. This inland port handles cargos from Thailand to be brought to Penang port either by railway or road.

4. Research Methodology

This study was conducted qualitatively where research data was collected through a series of interviews with the involvement of several key players in the logistics and transportation sector such as the port management team themselves, customs and several other agencies which directly involved in logistics and transportation industry. The interviews were conducted in a mixed method, via online and also face to face. Several semi-structured questions were constructed for the purpose of meeting the objectives of the study.

The collected data were analyzed using systematic methods based on grounded theory. This grounded theory is suitable for use for case studies because it enhances the validity of research constructs qualitatively through clearly stated operating procedures [7]. For this study, systematic

design was used because it generated themes from data analysis through identification, reflection, and coding [2].

5. Findings

Based on interviews conducted with PBCT, several advantages of PBCT have been identified. In addition, the PBCT also shared the experience encountered in efforts to improve the management of PBCT as well as efforts to increase the productivity of business management.

5.1 Advantages

5.1.1 Strategic location

Among the advantages of PBCT is its location near the border of Malaysia and Thailand making the period for containers to be sent by road from Thailand to Malaysia for transit purposes before being brought to Penang Port is very short. Compared to other inland ports such as Nilai Inland Port (NIP), Segamat Inland Port (SIP) and Ipoh Cargo Terminal (ICT), only PBCT located close to the international border involves two countries.

5.1.2 Two modes of transportation

Currently, almost all containers sent to PBCT are containers from Thailand and these containers are sent to Penang Port by road or by railway. Among the advantages of PBCT is that the mode of cargo delivery from PBCT to Penang port can utilize two methods, through the road network or using a double track railway. With a good road system and double track railway, it is an advantage for PBCT (by having two existing transportation modes). For example, on average, there are a maximum of 6 cargo trips will be delivered per day using the railway network and each trip is capable of transporting around 30 cargoes. This makes the transit time period of each cargo sent to PBCT very short. Its close proximity to Penang Port makes PBCT the choice of clients from southern Thailand to use the services provided.

5.1.3 Nearest Thailand sea port is located far from clients or businesses from Southern of Thailand

The remote port location in Thailand makes PBCT always the choice of clients from companies located in southern Thailand. Most of the clients who choose PBCT as their cargo transit hub are due to significant time savings compared to if the cargo delivery is made through the port located in Laem Chabang with an average distance of about 1,000 kilometers from the industrial area located in the south of Thailand. This distance is too far for the companies located in 14 provinces located in southern Thailand compared to the distance between PBCT and Penang Port which is only 170 kilometers where 95% of the cargo sent to PBCT will be sent to Penang Port.

In addition, the existing railway network in Thailand also prioritizes passengers over cargo, making PBCT the best choice for clients in southern Thailand. Despite the long distance from several provinces in southern Thailand to PBCT, it is still a top choice because nearby ports in Thailand require longer travel times. For example, the journey from Trang to PBCT is about 8 hours away. For the purpose of delivery to PBCT, companies or clients will plan a suitable travel time to deliver goods to PBCT either to leave late at night and arrive early in the morning at PBCT or leave early in the morning and arrive at the evening.

5.1.4 Safer mode of transportation

Among the other advantages of PBCT is, the majority of cargo will be transported to Penang Port via railway and this will ensure the safety of the cargo transported because it will move from PBCT directly to Penang Port (point to point movement).

5.1.5 Less competition by hauliers

Compared to Ipoh Cargo Terminal (ICT), PBCT has more advantages. ICT has more competitors especially hauliers due to its location in the center of Ipoh. Currently, ICT is only able to manage around an average of 100 TEUs compared to PBCT which is average of 350 TEUs per day. Clients are more likely to use the services of hauliers because cargo can be delivered directly to the port compared to using trucks to ICT and then from ICT to the port. The advantage of PBCT is, goods will continue to be transported by rail from PBCT directly to the port.

Table 1
Advantages of PBCT

Advantages of PBCT	
A.	PBCT location (near to the border of Malaysia and Thailand)
B.	The use of two modes of transportation (railway and road) to get to the sea port
C.	Nearest Thailand sea port is located far from clients or businesses from Southern of Thailand
D.	The mode of transportation used by PBCT is safer (by railway)
E.	Less competition by hauliers

5.2 Disadvantages

Currently, containers management in PBCT still uses manual methods as opposed to the use of technology. However, the management of PBCT still feels that they are able to manage PBCT using existing conventional methods. Apart from the problem of using conventional methods and lack of use of technology, the increasingly limited storage space is another constraint for PBCT. Other issues are:

i. lack of space for expansion
ii. limited facilities
iii. loss of clients
iv. shortage of ships and empty containers

5.2.1 Lack of space

Currently, almost 90% of the space in PBCT has been used with the concern that the remaining space is not able to accommodate the increase in containers, especially when the movement and international trade between the two countries has returned to normal. The location of PBCT which is located in an area congested with development makes its expansion process difficult.

5.2.2 Limited facilities

Currently, the types of products that can be stored at PBCT are limited to only rubber and wood-based products. Due to limited facilities, products other than rubber and wood based such as

food -based products, frozen products or fast-moving consumer goods cannot be stored at PBCT. Currently, there is a demand for products other than latex and wood -based products to be stored at PBCT for transit purposes before being brought to Penang Port. Products based on medical, electrical and electronic as well as frozen products have not been managed by PBCT at this time due to many conditions that need to be complied with. In addition, this type of product requires careful care to prevent damage. For example, frozen products require special facilities and require adequate power supply and additional allocation and space. In addition, this type of product is usually in a low volume and difficult to manage while the charges are the same. PBCT currently refuses to take risks to prevent this product from being damaged when stored in the hub. Most of these types of products will be transported directly to the seaport using hauliers.

5.2.3 Loss of clients

Among other problems faced by PBCT is the loss of clients. When the Covid 19 pandemic hit, some PBCT clients started using the Bukit Kayu Hitam border. After using the service at Bukit Kayu Hitam border, some clients continue to use the service provided there due to more attractive offer.

5.2.4 Shortage of ships and empty containers

Currently, among the global issues faced is the problem of shortage of ships and empty containers due to the demand for various Chinese goods from the United States. Most of the existing ships have changed trade routes and shipments of goods from China to the United States due to the high demand of some types of products from the United States. The shortage of ships has resulted in a lot of cargo having to be transited over a long period of time at cargo hubs and ports in addition to increased rates of charges imposed by shipping companies.

Based on earlier feedback from PBCT, more than 90 % of the cargo transferred at PBCT will be sent to Penang Port. The size of Penang Port is smaller when compared to Klang Port (Westport and Northport) and Tanjung Pelepas Port (PTP). Penang port is categorized as a feeder port. Due to the smaller size of Penang Port, most of large ships will prefer to use Klang Port or PTP. These three ports are also located in the open sea compared to Penang Port.

The problem of lack of empty containers also causes some difficulties. For now, a country like Thailand is a good country in terms of exporting goods but not in terms of importing goods. As a result, the demand for empty containers is constantly increasing.

6. Conclusion

Currently, among the problems faced by the PBCT is the lack of hub sites for expansion purposes. The remaining space is getting narrower and it is difficult for PBCT to increase the management capacity of incoming cargoes from Thailand while the opportunity to manage more cargoes is always there. PBCT's strategic position has always been an attraction for clients from Thailand as the country's border gateway located in Padang Besar has good road facilities as well as a double track railway directly to the seaport (Penang Port). Other borders do not have a direct railway to the seaport and only rely on the road network as a medium of transportation.

References

[1] Andersson, Dan, and Violeta Roso. "Developing dry ports through the use of value-added services." In *Commercial Transport: Proceedings of the 2nd Interdiciplinary Conference on Production Logistics and Traffic 2015*, pp. 191-203. Cham: Springer International Publishing, 2015. https://doi.org/10.1007/978-3-319-21266-1_12

[2] Creswell, John W. "Educational Research: Planning, Conducting And Evaluating Quantitative And Qualitative Research." 3rd ed, Kevin M. Davis, New Jersey, (2008).
[3] Jeevan, Jagan, Shu-Ling Chen, and Eon-Seong Lee. "The challenges of Malaysian dry ports development." *The Asian Journal of Shipping and Logistics* 31, no. 1 (2015): 109-134. https://doi.org/10.1016/j.ajsl.2015.03.005
[4] Xie, Jingci, Yiran Sun, and Xin Huo. "Dry port-seaport logistics network construction under the belt and road initiative: a case of Shandong Province in China." *Journal of Systems Science and Systems Engineering* 30 (2021): 178-197. https://doi.org/10.1007/s11518-021-5484-6
[5] Black, John, Violeta Roso, Eli Marušić, and Nikolina Brnjac. "Issues in dry port location and implementation in metropolitan areas: The case of Sydney, Australia." *Transactions on Maritime Science* 7, no. 01 (2018): 41-50. https://doi.org/10.7225/toms.v07.n01.004
[6] Zainuddin, Nizamuddin, Adam Mohd Saifudin, Mohd Hanizan Zalazilah, Ahmad Yusni Bahaudin, and Ruzelan Khalid. "Inland port logistical issues in Northern Region of Peninsular Malaysia." *Journal of Humanities, Language, Culture and Business* 3, no. 12 (2019): 51-65.
[7] Parker, Lee David, and Bet Hayward Roffey. "Back to the drawing board: revisiting grounded theory and the everyday accountant's and manager's reality." (1997).
[8] Roso, V., D. Russell, K. Ruamsook, and G. Stefansson. "Inland port services for seaport's competitive advantage." *World Review of Intermodal Transportation Research* 5, no. 3 (2015): 263-280. https://doi.org/10.1504/WRITR.2015.069242