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Knowledge Management for Thai SMEs Exporting Thai Local Products from Thailand to China during COVID-19

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Abstract

Nowadays, with the development and growth of internet technology, famous Thai products can be easily purchased in China. Chiang Mai is known as the city of coffee but cannot find out where to buy it on Chinese e-commerce platforms. This research study seeks to provide as comprehensive a description as possible of the Business to the Consumer market and the current logistics of transporting coffee products between China and Thailand, use information collection, and find potential channels. The potential pattern to provide viable solutions for relevant Thai SMEs to enter the Chinese coffee bean market in the "COVID-19" pandemic condition. This research uses intelligence search to determine exported suitable coffee products from Chiang Mai, Thailand to Hangzhou, China. This research use activity-based costing to compare the cost every step and time. Find out which is the suitable logistics pattern.

Keywords: COVID-19, export Thailand product to China, activity-based costing, knowledge management



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INTRODUCTION

The COVID-19 epidemic causes upheavals in all aspects of global economic and human life, such as agriculture, manufacturing, education, trade, logistics, finance, healthcare, tourism, and work mode(Boccaletti et al., 2020), (Nicola et al., 2020). There are also problems with shortages in the labor force: The logistics sector suffers from a lack of workers throughout all the supply chain stages. They were not available due to quarantine restrictions or infections(Xu et al., 2020). The closure of commercial aviation has limited air cargo capacity, making it more difficult to export products such as coffee products between Thailand and China. It is estimated that more than \$6.2 trillion worth of products is transported by air every year and that air cargo represents more than 35% of the value of the world trade(Sonya Dowsett and Joyce Lee, 2020)(Bombelli, Santos and Tavasszy, 2020).

After the macroeconomic impact of COVID-19, China and Thailand had lower consumption capacity due to internal blockades (Lee, Liu and Shi, 2021). In the case of Thailand, the most significant results are on exports of manufacturing products and services(Maliszewska, Mattoo and van der Mensbrugghe, no date). Because of the COVID-19 epidemic, many European and American countries have stopped flying to China. Still, Thailand, Cambodia, and other countries along the "Belt and Road" have maintained a smooth flow of products with China. Therefore, cross-border ecommerce export enterprises should vigorously explore emerging markets and accelerate the development of markets in countries and regions along the "Belt and Road" to diversify risks.(Liu, 2020).

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According to the announcement of an express delivery company. Most of the products purchased on Taobao.com online platform from Chiang Mai to China are transported by truck, land transportation because from Chiang Mai to Yunnan. Due to the country's epidemic situation and political reasons, land transport has been suspended for a while.

In recent years, the development of cross-border between Thailand and China has maintained the trend of rapid growth. Hangzhou is the city with the most coffee sales after Shanghai. In Shanghai, specialty coffee is not a concept in promotion but has become close to a norm. In Thailand, Chiang Mai Province (CNX), besides having outstanding potential in tourism, is also famous for being a city of coffee culture. But in Hangzhou's market and online platforms such as Taobao, customers only can find Thailand coffee products called Khao Shong, no more others since there is little content about shipping coffee products from Chiang Mai, Thailand to Hangzhou, China. As we know, the logistics between Thailand and China are very frequent, but in the case of the COVID-19 situation, the logistics between Thailand and China have changed.

This paper uses an experimental study and case analysis. Discuss which method is most suitable for delivering Chiang Mai local coffee products to customers in Hangzhou, China, during the covid-19 pandemic.

LITERATURE REVIEW

Bonded warehouse stocking model

Zhang Li (Zhang Li, 2015) mentioned that since Hangzhou has been approved for the bonded import city, bonded imports by its unique policy advantages, obtained the general recognition of the consumer because the bonded warehouse model has low cost, low price, short delivery time, quality guaranteed, after-sales service is convenient. Zhang Li explored that through quantitative and comparative analysis of the import modes of several key bonded zones in China, it was found that two import modes, direct mail import and bonded import, are commonly used by sizeable cross-border import e-commerce companies in China.

Products are first purchased in bulk and stored in bonded warehouses permitted by Customs. Products stored in bonded warehouses are not subject to tax when re-exported. Products purchased by consumers can be shipped directly from domestic bonded warehouses, and customs clearance is carried out before shipment. The specific business process can be divided into three stages: contract signing dual filing at the end of the contract. The imported products will move to the domestic airport, transporting them to the corresponding domestic bonded area. Products will be stored for safekeeping, waiting for the customer to provide information. Upon receiving the order, the consignee will need to provide ID information. After that, the bonded warehouse carries sorting and write-off out of the warehouse. After customs inspection, the qualified products are released and then delivered by domestic couriers until the recipient receives the ordered products.

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Direct mail model

Overseas direct-purchase mode is consumers through shopping platforms like Alibaba to buy abroad products. The overseas products are shipped directly from overseas and finally now to consumers. Some scholars believe that the bonded warehouse stock mode has less time cost and a more excellent price advantage than the overseas direct purchase mode. Still, at the same time, the pressure is also more remarkable than the overseas direct purchase mode because it requires a large amount of stock and many products in the early stage. The advantage of direct mail logistics is that it is convenient and straightforward. The disadvantage is the long transportation time high price; The benefits of the bonded mode are low transportation cost, fast time, and product safety, but the disadvantage is that the use of this model is biased towards large e-commerce or bulk procurement products such as mother and baby, food and others. Some products with a short warranty are not recommended (Li Jie, 2015). The Shanghai Municipal Bureau of Industry and Commerce group believes that the advantage of overseas direct mail is the global supply chain and rich categories. The connection with the customs system can speed up customs clearance. Still, the disadvantage is the inability to grasp the habits of domestic consumers, and some products do not support direct mail due to legal regulations (Zhang Wei, 2017). Because Chiang Mai, Thailand, is close to Yunnan, China, land transport is less expensive than air transport and less time-consuming than sea transport. In Chiang Mai, most people would use land transport logistics.

Activity-based costing and other factors on logistics management

Sobotka and Czarnigowska(Sobotka and Czarnigowska, 2005) simulated the logistics cost to demonstrate that outsourcing the supply logistics processes may reduce cost. On the other hand, Kasperek and Lewtak (Kasperek and Lewtak, 2004) analyzed how logistics processes would impact the execution cost of construction projects. Using ABC can provide better costing information and help policymakers monitor more efficiently and better understand the country's competitive advantages, strengths, and weaknesses(David Grant, Ioannis Kiokpas and Triantafyllos Yiortsos, 2007). ABC success is contingent on organizational and environmental factors such as ecological uncertainty and market orientation(Albalak, Abdullah and Kamardin, 2019). There are five parts of logistics cost. The first one is procurement, transportation costs for purchasing supplies such as fertilizers, pesticides, and equipment, communication costs between farmers and suppliers. The second is material handling. Harvesting cost, handling cost, grading and depreciation cost of materials and handling equipment, and harvesting loss. The third is transportation-gas costs, vehicle depreciation, vehicle maintenance, driver's wages, and losses during delivery. The fourth is the inventory-the opportunity cost of inventory supplies. The last one is customer communication.

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Communications cost between farmers and customers, such as telephone charges, traffic charges (Minken and Johansen, 2019).

Not only activity-based costing but also other factors like the time, quality of products on logistics management help this experimental study provide more accurate information to compare. This can help this study decide which logistics pattern to send Chiang Mai coffee products to China. As well as having a clearer understanding of manufacturing costs and time.

METHODOLOGY

Conceptual Framework

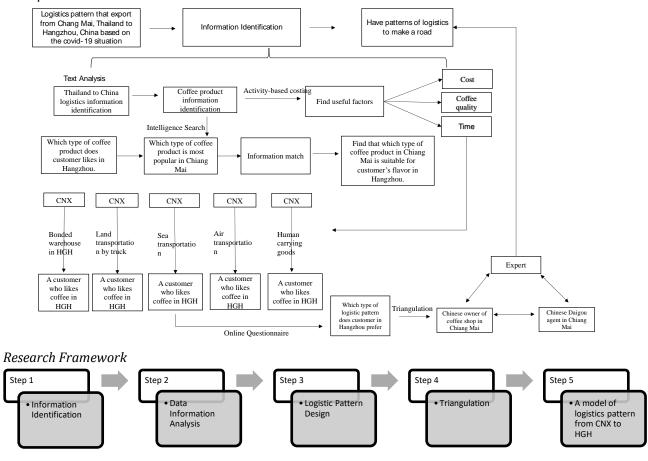


Fig. 2. Research Framework

Step 1: Information Identification (Logistics information identification and Coffee product information identification)

Logistics information identification: Introduce and use activity-based costing to compare the cost, time. List all possible ways to ship Chiang Mai coffee products to Hangzhou, China customers in Pre- COVID19.

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Coffee product information identification:

This research uses text analysis to find which type of coffee beans the customer likes in Hangzhou through the 'Dianpin' application. There are ten individual specialty coffee shops which include keywords:

a) Time: October 13, 2021, to November 13, 2021 (280 comments) Why choose this period: Although China was in a covid19 situation during this period, the outbreak in Hangzhou was good, and there were no new cases. So, the data for October and November 2021 were selected

- b) Hangzhou
- c) Specialty coffee shops
- d) Coffee beans
- e) Single-Origin

Step 2: Data and information analysis (Logistics data and information analysis, Coffee product data and information and analysis)

This research uses intelligence search to find which type of coffee product in Chiang Mai suits Hangzhou customer's flavor. In Chiang Mai, every coffee shop has its coffee brand, and they are different coffee beans from each coffee shop. There are seven international websites, and each website has the top5 coffee shops. Find the coffee products that appear the most and then find reviews from Chinese review sites for comparison. Find comments from November 13, 2019, to November 13, 2020 (47 comments).

Why choose this period: Because of covid-19, Chinese tourists didn't come to Thailand from 2021onwards, the data selected is for 2019 to 2020.

- a) This research finds some valuable factors for designing logistics patterns.
- b) This research has many patterns to export Ching Mai coffee products from Chiang Mai, Thailand to Hangzhou, China. Use activity-based costing analysis and other factors such as time and coffee quality. Focus on the cost, time, tracking information, and coffee quality in every step.
- c) This research used an online questionnaire that asks people in Hangzhou to prefer which type of logistics pattern to buy the coffee product from Chiang Mai, Thailand.

Step 3: Uses activity-based costing to design logistics pattern

Step 4: Triangulation

This research uses Triangulation, as shown in Fig. 3. Interview three-person to collect information on the current state of logistics between Thailand and China. Furthermore, how to send coffee

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products from Chiang Mai, Thailand to Hangzhou, China in the case of covid-19. This three-person had the experience of exporting Thailand products before.



Fig. 3. Triangulation

Step 5: A model of logistics pattern from CNX to HGH

This research result from after using triangulation interview three people and concluded which model was recommended most often.

FINDINGS AND DISCUSSION

- Step 1: Information Identification
- a) Logistics information identification

There are five logistic patterns, shown as TABLE I. The first one is to use bonded warehouse. Using a bonded warehouse lets the customer receive the products abroad very quickly. Because the products are stored in a single warehouse, the customer can be shipped directly from the warehouse as soon as the order is placed. However, as many products must be stocked in the warehouse, attention must be paid to the suitability of the products for long-term storage. The second one has used land transportation by truck. This is the least costly way of transporting products. However, you cannot send large quantities of products over 1000 RMB, as customs will confiscate them. The third one is to use sea transpiration. It takes the longest but is cheaper. It can be very cost-effective if exporting large quantities of products. The fourth one is using air transpiration. Airfreight is fast, but the unit cost is expensive.

TABLE I: Five logistics patterns

Model	Bonded warehouse	Air transportation	Land	Sea	Human Carrying
			transportation	transportation	Goods
Origin	CNX, Thailand	CNX, Thailand	CNX, Thailand	CNX, Thailand	CNX, Thailand
Destination	bonded warehouse in Hangzhou, Zhejiang Province, China	Hangzhou, Zhejiang Province, China	Hangzhou, Zhejiang Province, China	Hangzhou, Zhejiang Province, China	Hangzhou, Zhejiang Province, China
Shipping Time	1-5days	7-14days	1-2months	More than 2months	unavailable
Logistic Cost	/	THB1239/kg	THB220/kg	THB312/kg	THB100/times

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During pre-COVID-19, the logistics from Thailand to China is a very stable industrial chain, from processing storage to transportation without any letup. During-COVID-19, logistics, and transportation are full of uncertainty. At any time, there is a risk of being stranded and slow.

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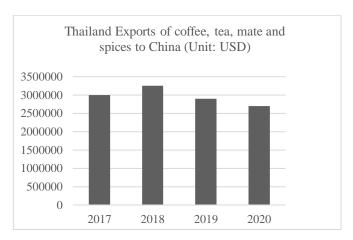


Fig. 4. Thailand Exports of coffee, tea, mate and spices to China Thailand Exports of coffee, tea, mate and spices to China from tradingeconomics.com https://tradingeconomics.com/thailand/exports/china/coffee-tea-mate-spices.

According to the information from tradingeconomics.com, the value of coffee, coffee husks, and coffee substitutes in 2020 is US\$41.38K. Fig.3. shows a downward trend in Thai coffee products exported to China from 2019 onwards. Because in China, COVID-19 is appearing in 2019. This leads to a full lock-up in China, which also has a great impact on the logistics from Thailand to China.

b) Coffee product information identification

According to Chinese consumers often prefer sweet and clean coffees, for now. And the conclusion was reached through the 'Dianpin' application is that Hangzhou customers prefer coffee with a sweet flavor, as shown in Fig. 5.

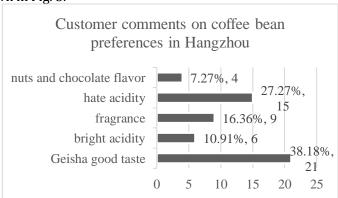


Fig. 5. Keywords frequency about Coffee beans preferences in Hangzhou

Step 2: Data and information analysis

a) Logistics data and information analysis

The logistics modes for Business to Customer are air freight, sea freight, and bonded warehousing. Sea freight is not suitable for B to C, as companies need to seek the help of third-party companies to use sea freight. Resource from KSA International Company.

b) Coffee product information analysis

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This research uses intelligence search. As shown in Fig. 5, the top 4 most frequently appearing coffee shops on ten international websites. The most recommended coffee shop name is Akha Ama Coffee.



Fig. 6. Top 4 most frequently appearing coffee shops ten international websites This research choose Akha Ama coffee product called STRONG (250g) " Dark คั่วเข็ม (180THB/250g) send to Hangzhou. Because this coffee beans' flavor which is matched preference of Chinese customer.

- 1) This research uses an online questionnaire. There are 100 effective questionnaires.
- 2) As shown in Fig. 7, the customer in Hangzhou, China. The most critical concern for customers in Hangzhou is the cost of logistics.

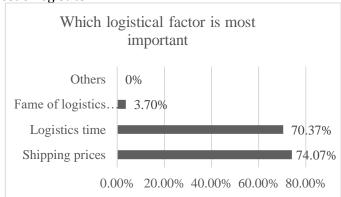


Fig. 7. Which logistical factor is most important

3) As shown in Fig. 8. The logistics pattern Chinese customers like direct delivery from bonded warehouses is the most recommended. As shown in Fig.8, it's 74.07%, 44.44% recommended by airplane, 18.52% recommended by road.

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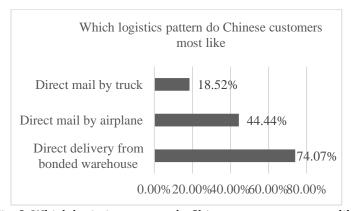


Fig. 8. Which logistics pattern do Chinese customers most like

- 4) Shipping day and logistics fee in three patterns Weight: 0.35kg, Weight Calc.: 1kg
- 5) Step 3: Uses activity-based costing to design logistics pattern

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TABLE III: ABC of three patterns before sending products

Bonded	Activity	Through social media platforms weibo, red book and wechat moments to post Chiang Mai coffee products for sale	Investigation of Thai side export related laws	Find and hire someone who knows Chinese and must in China	Register a company in China and get a 10-digit customs number	Complete the registration and to put on record filing on https://www.singlewindo	Data docking with the online integrated service platform and sending data such as		
	Time	Weibo:10-15mins Red book : 15-20mins Wechat moments: 10-15mins	7-20days	1 months	1-2months	1-2 months			
	Cost	N/A	N/A	THB20,000	N/A	N/A			
R	Risk	No one is interested in		Maybe the Chinese employees hired don't					
Activity		Through social media platforms weibo, red book and wechat moments to post Chiang Mai coffee products for sale	Go to land transportation company	Provide information of receiver and sender's ID and address	Find suitable box to put coffee product in	Pay for the money	Leave land transportation comapany	Products are delivered to the warehouse by truck	
Air transportation T	Time	Weibo: 10-15mins Red book: 15-20mins Wechat moments: 10-15mins	10-20mins	Half-day -1 day	5-10mins	1-2days	5-10days		
	Cost	N/A	N/A	N/A	THB1260-1360	N/A	N/A		
	Risk	No one is interested in	N/A	N/A	N/A	N/A	During the COVID-19, some gates are very strict screening resulting in a much longer transport time		
Land transportation	Activity	Through social media platforms weibo, red book and wechat moments to post Chiang Mai coffee products for sale	Online order and schedule a pickup	Wait for a courier to pick up the merchandise	Pay shipping Fee	Loading the goods onto the airplane	Transport from Chiang Mai to Hangzhou by airplane		
	Time	Weibo: 10-15mins Red book : 15-20mins Wechat moments: 10-15mins	By taxi: 7mins/By motorcycle: 6mins/By Grab express: 40 mins	5 min	3 mins	10 mins	By taxi: 7mins/By motorcycle: 6mins/By Grab express: 40 mins	1 day	1 day
	Cost	N/A	THB51/THB38/THB33	N/A	THB10-20	THB200-250	THB51/THB38/THB 33	N/A	N/A
	Risk	No one is interested in							

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• Step 4: Triangulation

Based on the conclusions of the triangulation analysis. Three people have different opinions. Airfreight was the best option if the customer did not care about the freight costs. During the COVID-19 period, land transport takes 1-2 months, and sometimes the land gates are closed, affecting the flavour of the coffee product. The bonded warehouse has the fastest shipping. Available even in the case of COVID-19, and provide that all preparations are made to move into a bonded warehouse. Sea freight takes longer than road freight and is suitable for large volumes of raw beans but not for Business to Customer.

• Step 5: A model of logistics pattern from CNX to HGH.

Combining the current state of logistics during COVID-19 and the triangulation analysis, the conclusion is that there are three logistics patterns that can be used, air freight is the most suitable way to transport the coffee beans from Chiang Mai without considering the cost of freight. Land transportation also can be used because it's the cheapest. But both land and air transport have their own drawbacks. Based on the Activity-based costing, time, and quality of coffee product comparison, it can see that bonded warehouse is suitable for sending coffee products.

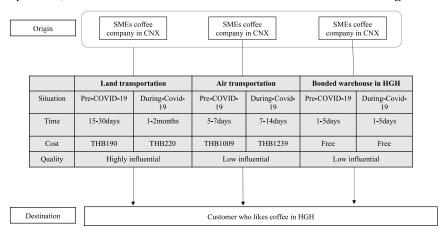


Fig. 9. Three logistics models

CONCLUSION AND FURTHER RESEARCH

A thorough intelligence learning analysis, Akha Ama is a Chiang Mai coffee product that best suit the tastes of Hangzhou people. Using activity-based costing and triangulation analysis of the logistics patterns indicated that the evidence from this study points towards the idea that coffee products could be transported by land transportation, air transportation, and bonded warehouse from Chiang Mai, Thailand, to customers in Hangzhou, China. The most important limitation lies in the "COVID-19" pandemic. Thailand's exports to China have become more stringent. Future studies will address the use of experimental research to verify how much time, logistics costs, and register bonded warehouse need which documents and whether these three methods will affect the quality of coffee products.

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