

## CHAPTER 9: CONCLUSIONS

### 9.1 SUMMARY OF THE RESEARCH FINDINGS

This chapter presents a summary of the research findings as well as a discussion drawn from those findings. Limitations of the research will be stated and the chapter will conclude with a suggestion for future research.

The main objective of this research was to assess and evaluate a number of multimodal transport corridors that are being used or may be used by traders in South East Asia. The study was mainly focused on shippers and consignees in Lao PDR, the only land-locked country in the region when trading internationally but with cross-references to transport costs, policy makers, freight forwarders and logistics service providers in the South East Asian region. Transit policies in neighbouring countries have a direct impact on the efficiency of Lao multimodal transport corridors. Three hypotheses were proposed.

#### 9.1.1 Hypothesis 1

*“The selection of particular transport modes or combination of transport modes for freight transport to, from and within Lao PDR is constrained by a number of factors that are related to transport infrastructure, the nature of the product being transported, the transport decision-maker, the transport service offered and the prevailing commercial environment.”*

- **Findings:**

Freight transport to, from and within Lao PDR is heavily constrained by factors that are related to transport infrastructure, the nature of the product being transported, the transport decision-maker, the transport service offered and the prevailing commercial environment. Table 9.1 classifies factors that affect the selection of modal choices in Lao PDR into three main categories.

**Table 9.1 Factors affecting freight modal choices in Lao PDR**

| <b>Product-related</b> | <b>Rank</b> |
|------------------------|-------------|
| • Length of haul       | 1           |
| • Dimensions           | 2           |
| • Value                | 3           |

| <b>Decision-maker related</b> | <b>Rank</b> |
|-------------------------------|-------------|
| • Marketing strategy          | 1           |
| • Stockholding policy         | 2           |
| • System of modal evaluation  | 3           |

| <b>Service-related</b> | <b>Rank</b> |
|------------------------|-------------|
| • Speed (transit time) | 1           |
| • Reliability          | 2           |
| • Cost                 | 3           |

Source: The Author

Relating to the nature of freight transported, Lao respondents believed that “**length of haul**”; “**dimensions**” and “**value**” were the most important factors for choice of transport mode. It is a fact that the nature of freight will have an impact on modal selection. Lao transport decision-makers considered that “**marketing strategy**”, “**stockholding policy**” and “**system of modal evaluation**” would determine their modal selection processes. Last but not least “**speed**”, “**reliability**”, and “**cost**” were chosen as the most important factors for modal choice selection with regards to transportation services. This would suggest that Lao respondents, **if given the opportunity** to choose among transport modes, would select a transport mode or combination of transport modes based on the three categories of factors shown previously.

The respondents also identified other constraints that affected international freight transport in Lao PDR.

- **Human resource development:** There is a shortage of skilled labour as the country has just recently opened to market forces.
- **Infrastructure:** All respondents acknowledged that because of infrastructural constraints, they have no real choice in the selection of transport mode (even though rail transport is available).
- **Regulations:** All the respondents felt that there were discrepancies in governmental rules and regulations relating to international trade and transit practices. All the existing legislation and procedures were considered to be cumbersome.
- **Tea-money:** All respondents acknowledged that tea-money form an integral part of running their business activities. If payment is not made then delay, loss or pilferage may occur while goods are in transit.
- **Summary conclusions for Hypothesis 1:**

It is very difficult in Lao PDR to have competition among transport modes. Due to its particular location, the dominant mode of transport is road. It is also part of the Laotian government policy to promote the use of road transport for international and transit cargo. Many respondents felt that they had no choice in the selection of transport modes when trading internationally with road transport considered as the only mode for sea or air access. This is due, to a certain extent, to the fact that there is almost no information on other modes of transport. Rail transport is a viable option but needs to be publicised more aggressively. There are also many physical and non-physical barriers that hinder the smooth flow of goods from origin to destination. It must not be forgotten that freight transported within Lao PDR is also subject to seasonal variations, which divert traffic from road transport to inland waterways in certain areas.

### 9.1.2 Hypothesis 2

***“The most frequently utilised multimodal transport corridor for Lao PDR international trade may not be the most efficient or reliable, or even the cheapest or the most competitive.”***

- **Findings:**

The most frequently utilised multimodal transport corridor for Lao traders is the road-sea combination via Bangkok port in Thailand for trade with Europe. This particular corridor has been described for the export of garments from Vientiane, in Lao PDR, to Rotterdam, in the Netherlands, and for the import of wine from Marseilles, in France, to Vientiane, in Lao PDR. Table 9.2 summarises the cost, transit time and confidence index for freight movement along this corridor.

***Table 9.2: Summary of cost and confidence index via Bangkok port***

|                 | <b>Cost per TEU</b> | <b>Transit time</b> | <b>Confidence Index</b> |
|-----------------|---------------------|---------------------|-------------------------|
| • <b>Export</b> | USD 2,484.8         | 30-31 days          | 2.89 (out of 5)         |
| • <b>Import</b> | USD 2,927.3         | 31-33 days          | 3.13 (out of 5)         |

*Source: The Author*

The research findings have revealed that the most competitive multimodal transport corridor for Lao traders to and from Europe is via Port Klang in Malaysia when the cost, the transit time and the confidence index are all taken into account for the routeing selection (see Table 9.3). This route is more competitive than the most frequently used routeing via Bangkok port. These findings also show that rail is competitive against feeder sea transport in the region. In theory, an integrated multimodal transport approach can offer better and more cost effective services to traders. The road-rail-sea combination via Port Klang is an example of this improvement in services and reduction in cost (even if the cost reduction is marginal).

***Table 9.3: Summary of cost and confidence index via Port Klang***

|                 | <b>Cost per TEU</b> | <b>Transit time</b> | <b>Confidence Index</b> |
|-----------------|---------------------|---------------------|-------------------------|
| • <b>Export</b> | USD 2,475.5         | 27-28 days          | 3.06 (out of 5)         |

|                 |           |            |                 |
|-----------------|-----------|------------|-----------------|
| • <b>Import</b> | USD 2,900 | 28-30 days | 3.13 (out of 5) |
|-----------------|-----------|------------|-----------------|

Source: The Author

- **Summary conclusions for Hypothesis 2:**

Lao traders and logistics operators must learn to re-evaluate their routing strategy for export and import of cargo to and from Europe by systematically considering a number of factors such as speed (transit time), reliability (confidence index), and cost. Transit time, reliability and costs are of fundamental importance when Lao traders are competing on the global market. The option, with rail, via Port Klang needs to be marketed more widely as it is under-utilised. Though it has been in operation since June 1999, the road-rail combination offers potentially the best option, when weighing speed, cost and reliability.

### 9.1.3 Hypothesis 3

*“The management of multimodal transport corridors in the South East Asian region is best performed by freight forwarders.”*

- **Findings:**

There is no “hard” evidence to support this hypothesis but the literature does suggest that freight forwarders are the most suited to offer competitive multimodal transport services as well as for designing and maintaining supply chains, at least in the South East Asian region. Multimodal transport corridor management is done through the control of material and information flow by the freight forwarders. This control can be exercised by using freight forwarder agencies’ network to relay the supply chain’s status. Vertical integration is also an option for supply chain control as illustrated by freight forwarders in Thailand.

- **Summary conclusions for Hypothesis 3:**

The development of the freight forwarding industry in South East Asia is very uneven. Freight forwarders in the more developed countries in the region such as Malaysia, Singapore and Thailand are able to offer sophisticated logistics services with EDI capability, while in countries such as Cambodia, Lao PDR, Myanmar and Vietnam the majority of forwarders can only offer traditional freight forwarding services. This difference in the level of industry development does have an impact on the management of multimodal transport corridors within a global supply chain with forwarders in the more developed countries gaining competitive advantage over the less-developed counterparts in terms of value-adding service offered. Rules and regulations in Lao PDR, Myanmar and Vietnam make it difficult for foreign forwarders to enter the market; however, Cambodia is the only exception with an open policy in relation to any foreign investment.

Freight forwarders in South East Asia with the help of the ASEAN Federation of Forwarders Association are trying to upgrade and harmonise the industry in the region. Human resource development has been identified by all the forwarders in the region as a critical area for the advancement of their industry.

## **9.2 LIMITATIONS OF THE RESEARCH**

The main focus of the research was to assess multimodal transport corridors in South East Asia with a particular emphasis on Lao PDR, the only land-locked country in the region. The scope of the research was limited in four ways:

1. It focused on a pre-determined sample of traders and logistics operators in Lao PDR chosen among the members of the Lao National Chamber of Commerce and Industry. The data collected is only representative of Lao businesses involved in international trade and transit.
2. It was mainly limited to land-sea multimodal transport corridors available to Lao traders when importing or exporting to and from Europe. The multimodal transport corridors studied did not include a detailed study of air transport options.

3. Only two types of products (garment for export and wine for import) were studied utilising multimodal transport corridors available to Lao traders.
4. The geographical setting of the research was mainly focused on South East Asia with Lao PDR at the centre of the study.
5. The Likert ratings for modal choice did not provide an indication of the possible trade-offs that Lao respondents were prepared to make between modal choice variables.

As the main body of data was collected from Lao traders, Lao government officials, Lao logistics operators, caution must be exercised when making broad generalisations based on this study. The author also gathered data from government officials and transport providers in Cambodia, Malaysia, Myanmar, Singapore, Thailand and Vietnam in order to understand transit and transport procedures to and from Lao PDR. The results derived from the empirical study may not be generalised because of the sampling frame's constraints.

The empirical evidence included in this research was conclusive mostly in relation to Lao traders, policy-makers, logistics operators and up to a certain extent to regional policy-makers involved in transit facilitation. Nonetheless, the methodology used for this research can be considered as a valid option for further studies.

### **9.3 SUGGESTIONS FOR FUTURE RESEARCH**

This research has shown that, through a systematic evaluation of modal alternatives and corridors, traders in Lao PDR were using sub-optimal multimodal transport corridors for their export of garments and import of wine to and from Europe. A number of issues were left un-answered such as routeing selection for Japan and North American trade or the possible use of sea-air (or air-sea) multimodal transport for certain types of products. This study has never claimed to be perfect but it is hoped that this study will provide a foundation for research in transport and logistics, especially in South East Asia. Here below are some other suggestions for possible future research.

1. How to improve and combine the multimodal transport model with the logistics decision-making model. This might possibly be done by adding other dimensions to both models.
2. Stated preference techniques may be used in order to explore the possible trade-offs between modal choice variables for Lao managers.
3. To comprehend freight transport usage and modal choices in Cambodia, Malaysia, Myanmar, Singapore, Thailand, Vietnam or even South East Asia as a whole.
4. To measure the efficiency and competitiveness of multimodal transport corridors in Nepal, Mongolia or other countries with comparable constraints of access and low economic development.
5. To explore the effect of informal payments and other non-physical impediments on global supply chain reliability.
6. To understand the factors involved in freight forwarders' supply chain design and planning processes.

This list is only a suggestion of possible future research. There are many more areas that need to be researched further, even within the context of multimodal transport corridors in South East Asia.



An area of considerable interest could also be the proportion of costs tied-up in sea transport, road transport, rail transport, ports, tea-money, etc., in South East Asia versus in Europe or in other countries or regions. This type of multimodal transport corridor approach with the multimodal transport cost and time model, the logistics decision-making model and the confidence index could be used as a methodology to “benchmark” logistics performance:

- Within regions
- Between regions
- Within countries
- Between countries
- On a continental or a global scale