



ORIGINAL RESEARCH PAPER

Management

A STUDY ON FACTORS INFLUENCE THE SELECTION OF MULTIMODAL TRANSPORT

KEY WORDS: Multimodal transportation, Shippers, consignee.

M.Suganya

PhD, research scholar, Alagappa institute of Management, Alagappa University.

Dr.V.Sivakumar

Associate Professor, Department of Logistics Management, Alagappa University.

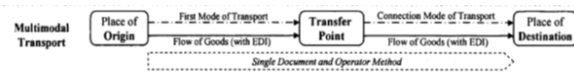
ABSTRACT

Multimodal transport is a concept that places the liability for transport activities under one operator, who co-ordinates and manages the whole task from the consignor's door to the customer's door guaranteeing the constant movement of the freight along the best way in order to satisfy the shippers requirements of delivery. Carriers and shippers have been choosing modes and routes for general goods for long time. Their decisions are made for a lot of reasons that have changed considerably over the recent years in response to deregulation of transportation modes and general economic conditions. Influence on these decisions includes administrative requirements and conventional industry practices.

INTRODUCTION

Every mode of transport has its own strengths and weaknesses. These strengths and weaknesses put challenges and opportunities before existing and developing in the competitive environment. Moreover, challenges before the transportation business have been complicated in the previous decades; due to increasing awareness about the appealing involvement of supply chain and logistics management for prolong development of the corporate firms. After realizing their restricted strengths and rising challenges, different modes of transport have started collaborate with each other to pool their resources and services so as to have customers. The establishment of the state-of-the art transport technology has given the driving force to the idea of multi modal transport highlight the cooperation of two or more modes of transport instead of rivalry with each other. Transportation in a typical global business could last for more than half a year that may use multiple transportation tools, such as railway, airline, vessel and truck, etc in one shipment cycle. That is known as multimodal transportation.

Simultaneously, shippers' worries about service features and responsibility made them to get participation in certain carrier internal activities, such as routing decisions. Furthermore, shippers have vested interest in specific mode because they possess a short railroad, a fleet of trucks, or a fleet of barges-will regularly choose to use that mode without regard for optimizing modal choice over the short run. Ultimately, while railroads activate over route structures that they own and control and some shippers have option of several railroads, in several cases, a shipper's choice of carrier will effectively find out the route which will be used.



source: Adapted and developed from Wong (1997)

Multimodal transport is defined as the carriage of goods by at least two different modes of transport based on a multimodal transport contract from a place in one country at which the goods are taken in charge by a multimodal transport operator to a place selected for delivery located in another country. In multimodal transport, one transport document, one rate and through liability are used. Multimodal transport is an old concept used to explain the linking of transport responsibilities, liability and documentation in the movement of goods using the existing transportation. This linking outcome in enhanced transport effectiveness offers the user with a single point of liability and higher cost transparency. The final goal of multimodalism is to create the movement of goods from seller to buyer more effective during faster shipment at minimum costs. Multimodal transport provides profit by facilitating exports to be located in the market place of the world at minimum cost and 'be more competitive'. Similarly, price related to imports will be minimized which leads to decreased cheaper imported goods and foreign exchange outflow.

REVIEW OF LITERATURE

1. Gray and Kim (2001) argued that since developing countries are unable to give the full transport and communications infrastructure required for a successful intermodal system, a multimodal system, which can be view as a temporary stage to full intermodalism, is a more reasonable target. Mode choice decisions play a significant role in operations of multimodal transport as the decision regarding which modes of transport to utilize in the operations find out the success of the overall transportation chain. A complete estimation of the modes of transportation must be considered by the decision makers. Even though the success of multimodal transport operations might be estimated by objective factors namely the transit time, cost and distance factors, the perceptions of the decision makers also help to know the way they observe the overall multimodal transport chain. Perceptual and behavioural approaches are the major concepts used in the studies dealing with the mode choice decisions.

2. According to Liu, X. and Lin, H. (2011) Mode choice of transportation in multimodal transportation directly affects the cost of carriage of goods, quality and time of transport. At present corresponding decision support system lacks and multimodal transport information level is not high. The transport properties of different modes of transportation are analyzed, and then by disparity, get the transport mode choice basis. Depending on the economic and technical features of various transport tools, for staging transportation networks, lays forward a combinatorial optimization model combined by the path selection and transport mode.

SELECTION OF MULTIMODAL TRANSPORT

The selection method for the multimodal transport could differ from the simple decision either to recognize one reasonable distribution method.

Judgment: Identification of the main factors influencing the transport problem by the transport manager, and the mode of transport from a list of options available, so that the significant features of the transport needs are met.

Cost- trade-off: It is where the effect of transport is estimated in relation to direct terminal goals and activities, and the total cost of distribution system is utilized.

Mode choice and route selection are often directly interrelated. A change in mode will need a change in route and equally, a change in route also requires a change in mode. In the mean time, some origins are not served by specific modes. This apparently limits modal choice and routing options. Traditionally, modal choices have been decided by shippers and routing choices have been made by carriers but this difference has begun to obscure. Already rules kept carriers as of offering services in more than one mode. In current years, deregulation of the transportation industry has permitted carriers to develop cooperative arrangements with carriers in other modes. Most probably, carriers are more able to persuade-even though still not make a decision-which mode will

Distribution models: This explains and recognizes the interrelationships between the elements of the distribution system at various levels of daily, weekly or monthly demands. These modes could be used to determine the effect of another transport mode and methods, as either the demand modifies or the elements in the system change.

Systematic selection: In this process, the main factors affecting the selection of transport mode are first determined. Based on that factors the trade-offs between various modes of transport is undertaken to reduce the total distribution cost. At last, there is the operations analysis to test with a planned system to authorize the computations and examine that the transport interrelationships with other areas have been estimated correctly.

FACTORS TO CONSIDER WHILE CHOOSING THE MOST SUITABLE MODE OF MULTIMODAL TRANSPORT

1. Cost of Service:

The transportation cost includes the cost of the goods so it could be kept in mind. Rail transport is rather an economical transport mode for bringing heavy and bulky traffic over long distances. Road transport is economical to carry small traffic over short distances. Road transport saves handling and packing costs.

Water transport is the cheapest mode of transport. It is suitable to carry only heavy and bulky goods over long distances where time is not a significant factor. Air transport is the most expensive modes of transport but is suited for carrying light, perishable and valuable goods that require quick delivery.

2. Speed of Transport:

Air transport is the fastest transport mode but it is expensive compared to other modes. Road transport is speedier than railways over short distances. However, the speed of railways over long distances is higher than that of other transport modes apart from air transport and it is best suitable for long distances. Water transport is very sluggish and thus not suitable while time is a vital factor.

3. Flexibility:

Sea, railways and air transport are rigid modes of transport. They control services on fixed routes and at pre-planned time programme. The goods that have carried to the ports, railway stations and airports taken from there. Road transport provides the most flexible service because it is not tied to fixed routes. It works at any time and can reach the business premises for loading and unloading.

4. Regularity of Service:

Railway service is more uniform, regular and definite as compared to other transport modes. It is not affected by climatic conditions. On the other view, road transport, air transport and water transport are affected by poor weather such as heavy rains, fog, storms, snow, etc.

5. Safety:

Security and safety of goods in transit also affect the options of suitable modes of transport. Road transport may be preferred to railway transport due to losses are usually low in road transport. Water transport represents the goods to the danger of sea and hence from safety viewpoint, it is notion of as a final resort.

6. Nature of Commodity:

Rail transport is most suitable for carrying low-cost, bulk and heavy goods. Perishable goods which require fast delivery may be passed through water transport or air transport considering the distance and cost.

7. Other Considerations:

A number of unique services such as packing, warehousing, loading and unloading are also considered while deciding about a transport mode. It is clear that every transport mode is suited for a specific traffic type.

The rail transport is mostly suited for carrying heavy and bulky goods over long distances. Water transport is appropriate for carrying small shipments over short distances. Air transport is suited to precious and light articles which are to be delivered fastly. Water transport is suitable for carrying bulky goods over long distances at low cost.

CONCLUSION

Multimodal transport system demands organization among different transport mode for better advanced and effective service. Further it also needs demand based traffic circulation plans to combine different modes and development of major road intersections and stretches to aid smooth movement. It is considered that transport decision makers obtain important results about the major factors influence their mode choice decisions about multimodal transport. Main service providers to the shipper and freight forwarding companies such as third party logistics service providers employ the result of research to improve their service contribution to their clients by understanding their preference about multimodal transport, areas to be developed and marketing strategies to be followed in order to influence the main stages in the decision-making process.

REFERENCES

1. Alan, McKinnon (1989), Physical distribution. New York: Routledge. pp 227.
2. Kher, S V (1995), Multimodal Transport in Developing Countries. MSc dissertation. Malmo, Sweden: World Maritime University.
3. Guibin Xu (1999), Multimodal transport and trade facilitation: implications in the Chinese context, World Maritime University.
4. Gray, R., and Kim, G. (2001). Logistics and International Shipping. Dasom Publishing: Pusan.
5. Banomyong R. (2000), Multimodal transport in South East Asia: a case study approach. PhD Thesis, Department of Maritime Studies and International Transport, Cardiff University.
6. Bowersox J, Closs J, Cooper Bixby. (2002) Supply Chain Logistics Management. Michigan State University, 66-92.
7. Alan Rushton, Phil Croucher and Peter Baker (2006) Handbook of Logistics and Distribution Management, 4th edition.
7. Branch Alan E. (2009) Global supply chain management and international logistics. New York International Business/Shipping Consultant. 2:79-80.
8. Wood Donald F, Barone Anthony P, Murphy Paul R, Wardlow Daniel L. (2002) International logistics. 2nd edition, American Management Association (United States of America), 47-55.
9. V P JEFFS (1990), Determinants of modal choice in freight transport A case study, Transportation 17: 29-47.