

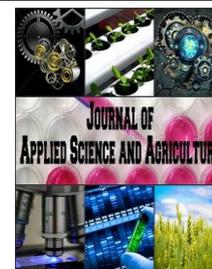


AENSI Journals

JOURNAL OF APPLIED SCIENCE AND AGRICULTURE

ISSN 1816-9112

Journal home page: www.aensiweb.com/JASA



A Review of Maritime Logistics Performance

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ARTICLE INFO

Article history:

Received 12 February 2015

Accepted 1 March 2015

Available online 28 March 2015

Keywords:

Supply chain, Maritime Logistics

Transportation, Water mode

ABSTRACT

Background: Supply chain management related with transportation, procurement, management, marketing and so on. Regarding of that, the paper only focusses on transportation. **Objective:** The aim of this research is to review the integration between items that influenced maritime logistics performance, at the same time to identify the new approaches related. **Results:** many researchers are focused to maritime logistics because the mode are friendly to customers-suppliers relations. Additionally, a summarize of new approaches with some items that considered, are identified. **Conclusion:** The enquiry described in this paper stands as an initiative requiring further research and investigation.

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To Cite This Article: M.H. Norhidayah, Wan Ahmad Najmuddin Wan Saidin, Nazrul Idzham Kasim., A Review of Maritime Logistics Performance. *J. Appl. Sci. & Agric.*, 10(7): 1-3, 2015

INTRODUCTION

Supply chain management aims at the efficient use and operations of supply chain assets, products, informations and cash flows (sunil and Meindl, 2006)(Mary and Mario, 2008). In common supply chain framework, a variety of stages and costs were involved such as customers, distributors, manufacturers, materials costs, and transportation costs. Some researchers believe that the key decision in supply chain management was influenced by selecting transportation mode and carrier to move inbound and outbound freight. In spite of that, it is important to identify relevant transportation performance such as cost, time, safety and port (Monczka et al, 2008)(Russell and Taylor, 2003).

Malaysia's economic growth will be linked to many aspects of the ocean, particularly to Exclusive Economic Zone (EEZ) areas for exploration and exploitation of economic activities such as offshore oil and gas harvesting. Thus, to become a developed maritime nation and to utilize her EEZ resources in a sustainable manner, Malaysia has to pay more attention to the development of her commercial shipping and shipbuilding sector as well as the maritime education and training capability to produce competence human capital for the future market (Mohamad, 2014). Seventy percent of

Malaysia's trade in manufactured goods is carried by containers and the use of containerized shipping has increased tremendously.

Examination of logistics performance has mainly been focused on operational measures. There has been less attention placed on the influence of organizational factors, despite the advocated need for greater inter-organizational integration among supply chain partners. The purpose of this paper is to clarify and analyze the various criteria in maritime logistics performance from literatures. It is to provide a general summarized and expert to be referred for further development and researches. The paper started from introduction of transportation and logistics and then impressed the various criteria within researchers' approaches related to maritime logistics. Finally, this paper will discuss and conclude the potential further development of logistics systems especially in maritime supply.

2. Methodology:

The method section describes in detail how the study was conducted. Contents of articles published on the international journals discussing about the transportation structure and components that influenced logistics performances, were identified. The authors have designed a structured process for selection appropriate articles. The research of the

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articles was carried out using online databases and library services. This was done by reading the articles and reflecting upon their appropriateness for the topic studied. The information such as titles, authors, research approaches were identified, and then discuss the findings and finally draw conclusions.

3. Analysis and discussion:

Transportation structure:

Supply chain logistics is a concept for handling the raw materials, product and so on from a place to another place. A mode identifies a basic transportation method or form. The five basic transportation modes are rail, highway, water, pipeline and air. Usually, to identify the suitable transportation mode, supply chain department will consider the volume of product, mileage and traffic volume.

One of the logistics modes is maritime logistics. In this mode, firms are used large scaled ships and

cooperative operation techniques because they want save cost and enhance competitiveness. In other side, customers more care about service quality such as goods in good conditions than delivery prices. The operation of maritime transport can be divided into 3 types such as linear, trap and industry shipping (Tseng et.al, 2005). In maritime logistics, main items that should be consider are port, shipping lines and time and safety in choosing ports, the selection of ports is based upon the minimization of overall cost of the cargo's journey such as ship cost, port traffic, inventory cost and also inland transportation cost (Tran, 2011) (Abshire and Premeaux, 1991).

Cost reduction may be achieved by reducing transaction costs through integration that will improve the accuracy of the information exchanged. Essential in delivering high logistics service quality is timeliness and responsiveness to customer problems on time with accurate solutions. Approaches related criteria in maritime logistics as below:

Table 1: Approaches with maritime logistics criteria.

Criteria	Explanation	Approach	References
Cost	One of the criteria that influenced and involved a variety of stages	<ul style="list-style-type: none"> A simple framework for the evaluation of seaports and the rationalization of their operational activities. The analysis is based on a stochastic frontier model with technical change. Benchmarks are provided for improving the operations of less performing seaports. Furthermore, scale economies (output mix), as well as non-neutral technical progress (factor price mix), are found to be determinant factors of efficiency in this sector, with pure technical change contributing to the increase of costs. 	(Netsanet, et.al., 2013), (Araujo et al, 1999),
Safety	The quality of a ship:e.g., its certificate, crew performance, living and working conditions, accident prevention, and equipment as required to gain an overall quality picture of forages.	<ul style="list-style-type: none"> It reveals that quality and safety records are correlated with each other, and directly linked to ship ages. Thus the age of a ship should be taken into account as a priority in port inspection. A new approach is suggested for assessment of ships safety score. A conceptual approach to the application of cost-benefit analysis in maritime safety regulation is derived. The paper concludes by advocating the adoption of such an approach as a means of ensuring that safety regulation sets optimum targets such that the level of compliance yields maximum economic benefit and that the Maritime Risk Management (MRM) which ship owners implement is effective in satisfying the regulatory targets that are set. 	(Li, 1999), (Kevin and Cullinane,2003)
Port	The complex and multipart organizations which institutions and functions often intersect at various levels.	<ul style="list-style-type: none"> A framework of efficiency measurement capable of reflecting the logistics scope of port operations and complementing. The model indicate that the distance of the shipper from port, distance to destination (in case of exports), distance from origin (in case of imports), port congestion, and shipping line's fleet size play an important role. We estimate elasticities of changes in these variables and their impact on the market share of shipping line-port combinations. Inland distribution becomes foremost importance in port competition, favoring the emergence of transport corridors and logistics poles. A new and more effective analytical framework within which the modelling of port choice can be conducted and shipper choice decisions well understood. The proposed framework is fundamentally an operationalisation of the earlier paradigm of ports as elements in value-driven chain systems proposed by Robinson in 2002. 	(Bichou and Gray, 2004), (Piyush, et al., 2003), (Theo E. N and Jean P.R.,2007), (Mateus, 2008)
Information		<ul style="list-style-type: none"> A based on the extensive use of simulation and virtual reality in a web environment as a wired decision support system. The proposed implementation combined all the presented techniques into software tools continuously updated from harbour ERP effectively serving as terminal DSS 	(Bruzzone and Giribone, 1998), (Chiara, et.al., 2005)

4. Conclusion:

The aim of this paper is to analyze the criteria that influenced maritime logistics performance. Content analysis of recent articles published in the international journals is used as a methodology. Regarding of that, some of criteria were identified such as port, cost and safety. The enquiry described in this paper stands as an initiative requiring further research and investigation.

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