

# Inventory, Warehousing and Transportation Management Impacts Towards Logistics Performance in Supply Chain Management

Mohd Fathi Mohamad<sup>#1</sup>, Zulkifli M Udin<sup>\*2</sup>, Kamal Imran Sharif<sup>#3</sup>

<sup>1,2,3</sup>*School of Technology Management & Logistics, College of Business, Universiti Utara Malaysia*

<sup>1</sup>[mohdfathiphd@gmail.com](mailto:mohdfathiphd@gmail.com)

<sup>2</sup>[zulkifli@uum.edu.my](mailto:zulkifli@uum.edu.my)

<sup>3</sup>[kamalimran@uum.edu.my](mailto:kamalimran@uum.edu.my)

**Abstract**— The purpose of this article is to proposed a framework that related to the factors that impacts the logistics performance due to lack of equal agreement on the factors that affecting logistics performance. Factors that been proposed in this article includes inventory management, warehouse management and transportation management. It will also be discussing others general factors that affecting the logistics performance. A comprehensive discussion on all three variables been done in order to provides greater insight on the factors that affecting the logistics performance. These comprehensive reviews include the management of inventory, warehousing and transportation and provides greater definition on the variables terminology that are related. Therefore, a framework has been proposed for further study

**Keywords**— *Inventory, Warehousing, Transportation, Logistics Performance*

## 1. Introduction

Logistics performance has been acknowledged as an important element in making sure an organization achieving its competitiveness and effectiveness and as the globalization impact towards how organization should operate, maximizing the logistics performance will not only enhance the performance of as the organization will able to deal with uncertainty in the supply chain [1] [2]. This is supported by [3], [4] that has view that most organization was compelled to collaborate with other organization in the same logistics industry as to solving the diversity of segmented demand of different customer needs. Logistics performance has undergone a massive transformation where organizations not only focusing on the disruptions, timeliness of the delivery, cost of delivery but organizations focus more on the ability of organization to manage its resources to ensure the effectiveness of the operation been achieved [5].

In relation to this article, relationship between inventory, warehousing and transportation management towards the logistics performance will be reviewed as how these factors are affecting the logistics performance. Inventory, warehouse and transportation management been selected as it can influence the logistics performance and are considered as logistics activities [6]. Based on the review been done, a framework been proposed and this framework

can be utilized for further research by researchers in contributing to the managerial and also to the evolvement of the knowledge in related to logistics performance.

Uncertainty in customers demand has become challenges for organization to fulfil the logistics requirement in ensuring the organization performance be greater as the needs of customers are segmented with options, styles and the short time features. Therefore, organization can improve its logistics performance by ensuring a great management towards its logistics system that involves the management of inventory, warehousing and transportation that can cater the organization needs to achieve the competitive advantage in the logistics industry [7].

In this article, the conceptual definition for inventory management are the management of the miss selling and the holding inventory that includes capital in inventory, variable storage costs and discontinuance to reduce the sum of the cost in ensuring the logistics performance will be great [8]. On the other hand, warehouse management are defining as the management of where and how the inventory are reserved, massed are scattered that incudes in the perspectives of production and storage sites [6]. Nevertheless, transportation management are defining as the accuracy of the movement of the product from the origin of the product to its destination where it can be delivered in land, air or either sea transportation.

## 2. Literature Review

In the era of globalization where country boundaries are not a barrier for organization to provides services towards customer needs, organization has to be flexible in providing services that are greater quality, more variety and better service quality for customers as the dealings power by the customers are greater. As consequences, when organizations able to provide more flexible services to cater customer demand it will enable the organization to enhance the performance and responsiveness of their logistics operation. In making sure a greater logistics operation, enhancement in the management of inventory, warehouse and transport are crucial as the distinguished management of these factors enable the organizations to achieve a greater balance of the cost, quality and the delivery time as well [9]. A great

inventory, warehouse and transport management can be achieved by an appropriate system approach where the logistics operation should be considered as a systematic

## 2.1 Inventory Management

Cost per unit are common tools used in inventory management as when customers ordering a large quantity, it will enable the transportation cost to be shared and as a consequence the handling cost will be less as the cost of one unit needed the equal amount of management cost as to 1,000 units demand [8]. On the perspective of manufacturing industry that usually deals with logistics organization, manufacturing organization production usually will be scheduled in extensive session with line changes occur and therefore the usage of the factory will be better and as consequences the production volume will be greater as the per unit of the production costs are lower [6]. Therefore, it can be concluded that inventories exist in this situation and this will allows organizations to escapade the economy of scale by transporting large volume in making sure the cost are reduced [11].

Uncertainty in supply chain can be manage and control by implementing the holding inventory where it will prevent the out of order of inventory in condition where the variety of demand or the replenishment cycle are at a maximum level [8]. Therefore, when shortage of supply exists that will influence the price to increase and then will create a speculative purchases to avoid the uncertainties [12]. Holding inventory is justified as an effective tool that industry has to be considered as the saving that can be gain from the execution of the tools.

Organizations that has an inventory will face few cost that includes ordering, holding and penalty costs and it usually involve the high necessity of working capital that will involve organizations to invest in single investment on assets that provide variety of retailers and wholesalers [13] [14]. However, by making this investment organizations will able to provide extra solutions to customer and as a results organization able to balance the return to make greater revenue and thus effecting the logistics performance. Inventory also enable the organizations to gain competitive advantage that influence the performance of logistics operation and on the other hand when organizations targeted to reduce the inventory cost it will involve the time of shipment and accuracy of forecast that are related to warehouse and transportation management [15].

## 2.2 Warehouse Management

Basic definition of warehousing is referring to the store house and retrieval activities that includes moving goods without damaging the material in an appropriate time and it is done efficiently [16]. Furthermore, an appropriate cost in warehousing management are crucial in affecting logistics performance as it can be managed by proper balance between the transportation cost and development and maintenance of warehouse and among tools that been used includes that optimizing layout of a warehouse to improve the efficiency of material movement in a warehouse [17].

network that connected and comprises of these three activities in regards to the management in material flow in achieving a greater logistics performance [10].

Activities in warehouse includes storage that is supported by element of receiving, transfer, handling, packing and expediting [18]. All these activities can influence the logistics performance of an organizations if an excellent design was adopted to support the operation and this excellent design must also be supported with wise decision in determining an appropriate size, location and facilities that has to provide to cater the customer needs in making sure the organization increased its competitiveness in regards to the logistics performance [8], [16].

Warehouse management are crucial in influencing logistics performance as the operation of these two elements are interrelated and with appropriate warehouse management it will enhance the flows of materials, provide strong pillar for greater inventory and indirectly lower the cost of transportation. Therefore, the logistics performance will also be affected positively.

## 2.3 Transportation Management

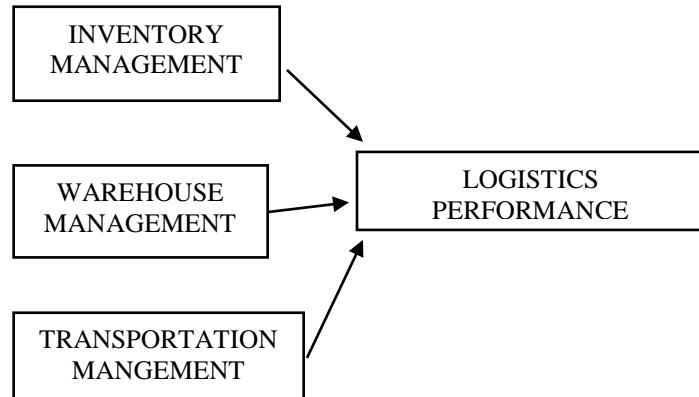
Today's transportation not only involve transporting products from one location to another but also involve integration of all element in the structures of logistics that will influence the logistics performance as it impacts positively towards the movement of products in the supply chain [19], [20]. Transportation management are related to time utility and place utility where time utility is referring to the flow of the products been delivered from sender to receiver where the flexibility of delivery and timeliness of delivery where place utility are referring to location of products delivered specifically from the origin of the product towards the destination [8].

In relation to transportation management, selection mode of transportation was crucial as the logistics personnel needs to schedule the transportation operation with cautions consideration to the factors that includes routing, shipment consolidation, appropriate carrier, claims and negotiating with carrier for greater result that benefited organization. On the other hand, in ensuring effective transportation management many organization have opted to engage with third party logistics provider and forwarding agency that provides solutions many organizations in supporting its logistics needs [21]. Third party logistics services enable organizations to benefited from hassle of interactions with carrier, gain advantage by professional services and organizations able to focus on its core priority[22].

Great transportation management will effect the logistics performance as it will resulted in consistency of service, great timeliness and it also directly impacted the inventory and warehouse management and therefore an appropriate strategy to ensure products movement will move smoothly from origin to destination demanded by customers [8], [23]. Indeed, an appropriate transportation management

will enable organization to gain competitiveness by creating value chain in the logistics industry [24].

### 3. Proposed Framework



### 4. Conclusion

Research on factors that affecting logistics performance that relates to the variables that been discuss in this article should be further research by researchers as the area was lack on agreement on what are the concrete factors that are affecting the logistics performance in regards to the effectiveness nor the efficiency of organizations. Normal studies that are related to logistics performance usually relates it with policy maker, technology and social culture. Therefore, this further justify for the needs to empirically prove the factors that been discussed in this article.

Importance of further justify on inventory management as inappropriate strategy in planning it will cause the organization to incur unnecessary extra cost. Indeed, it will affect the product expiration too and as a consequence customer will not compromise on the rising cost. Other consideration that need to further elaborate by researchers is how inventory management tools by reducing the carrying cost by elimination the size of inventory, will stock out or miss selling occur. Therefore, failure to cater demand of customer will directly impact the logistics performance.

Next, warehouse management also needs to be further clarify as it needs organization to make and appropriate planning from the investment been made that includes the location, layout and external environment as decision on these factors will impact future stability to the organization and how it will impact the performance. How warehouse management are affecting logistics performance since it is related to each other and how organization would able to provide a right material and the right volume and conditions.

On the other hand, transportation management are also crucial as it is a backbone in logistics a great transportation management will affect the service by reducing the timeliness that indirectly will reduce the inventory cost. What is the right cost? And what is the right time among

issued that needs to further investigate on how it impacts the logistics performance.

Further studies also need to be done by considering other factors other than have been discussed in this article that includes the logistics operation management, customer satisfaction or other organization factors that are suitable to be related to logistics performance. Factors that are affecting the logistics performance needs to be look as whole where it is connected together in a complex supply chain rather than separate element. Therefore, clarification on these issue are crucial in determining the importance of factors in affecting the logistics performance.

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