

The Impact of Logistics Management Practices on Company's Performance

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Abstract Successful companies practice supply chain management and logistics management to reduce costs, increase their competitiveness and enhance operational efficiency. The logistics in modern business conditions coordinates and integrates the movement of materials and products from physical, organizational and information aspect. This research aims to analyze the impact of company's logistics management including transportation, warehousing, packaging, inventory and information management to the efficiency and effectiveness. Reducing cost of each logistics activity influences the total amount of costs and enhances company's performance. This paper determines and defines the logistics activities that are of key importance to the company's success. The empirical research is conducted on a sample of eighty examinees from eighty different companies in the Republic of Macedonia. The general hypothesis is fully validated and proven by the survey results. Adequate inventory, storage, warehousing, transport and information management are key targets for logistics managers in order to reduce the overall costs of the company. Findings include the confirmation of the necessity of logistics managers to optimally manage all logistics activities in order to gain increased business efficiency, customer satisfaction and competitiveness.

Key words Supply chain, competitive advantage, customer satisfaction, effectiveness

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1. Introduction

The globalization process enables the sale of products for the same purpose from different manufacturers and with different prices. The increased offer on the market has led to intensive competition and some of the companies are faced with the problem of survival. The development of information technology has led to increased flow of information around the world, which resulted in enhanced education of producers and consumers (Delfmann and Gehring 2003). The only way for companies to survive on the market is constant lowering the price of products and regular improvement of product characteristics. Hence, the continuous intensive development of the company is crucial to its survival on domestic and global markets.

Creating and sustaining a competitive advantage of the company is a complex and sustained process that largely depends on the flexibility and willingness of the company to carry out rapid changes in their processes and to make them faster than their rivals. The continuous adjustment and improvement of the processes is the basis for the company's functioning in the current conditions, while at the same time is one of the key success factors. In this context arises the need for application of modern management practices in all aspects of the operations of the company, especially in the supply chain management, which contributes to increasing competitiveness (Hassini 2008). One important element is the logistics which provides management with the total operations costs and increases the efficiency of the company's business activities. Collaboration among all the supply chain players coupled with a responsive approach can enhance organizational competitiveness through reduced lead-time facilitated by smooth flow of material from upstream towards the downstream end of supply chain. This approach will ensure end customers get value for their money and also reduce the level of uncertainty in the industry (Francis and Waiganjo 2014).

2. Literature review

2.1. Business logistics

The continuous adjustment and improvement of processes is a key mechanism for the functioning of the company in modern conditions and a significant competitive advantage. Supply chain management practices impact not only overall organizational performance, but also competitive advantage of an organization (Karimi and Rafiee, 2014). The proper supply chain management is a process that reduces costs and increases the competitiveness of the company (Kumar *et al.*, 2006). Hence, the logistics needs to respect the process of planning, implementation and control of the procurement, storage, transport and information and with the sole purpose to improve them. Every company should develop an appropriate mission and vision in order to implement its business logistics. The mission of the business logistics is to ensure availability of the right product in the right quantity, on the right place, at the right time and to the right buyer at the right price. The vision of the business logistics is to ensure sustainable development, or to set logistics activities and operations in order to get the final results with the least possible level of coordination, maximum synergy and lowest costs in accordance with all environmental and consumer laws. Mentzer and Konrad's (1991) definition of logistics effectiveness is the extent to which the logistics function's goals are accomplished.

Logistics implicates to the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. It comprises the management of raw materials flow to finished goods through an organization. Logistics means planning and organizing activities that ensure that resources are in place so that the process can be effectuated accordingly in efficient and effective manner (Mellat-Parast and Spillan, 2014). The main functions of logistics managers involve organizing and planning of inventory, purchasing, transportation, warehousing activities. The logistic activities can be divided in two categories (Lambert and Burduroglo, 2000):

- Inbound Logistics, that refers to the activities connected with the procurement of material, handling, storage and transportation; and
- Outbound Logistics, that refers to the activities connected with the collection, maintenance and distribution or delivery of the product to the final consumer.

Accordingly, logistics is strategically important in many industries as it is central to achieving competitive advantage (Kenyon and Meixell, 2007). However, companies must respond to changing customer needs, and logistics flexibility is an important part of the response (Zhang *et al.*, 2005). Each company must develop or create its own logistical values that will be incorporated into the product, or its value in use. For customers despite the shape of the product, it is important that it will be accessible to them in the required time. There are six reverse logistics capabilities that have impact on companies' performance: logistics information management, close-loop capability, supply chain integration, supply chain coordination, conformity capability, and institutional incentives (Vlachos, 2016).

In today's dynamic competitive environment, logistics management strategy plays a significant part in the overall corporate governance, especially in the area of asset management and financial flows of the company. In other words, the use of logistical savings will allow the policy of lower prices, longer payment terms, and higher level of service to customers and therefore, increased operating efficiency.

2.2. Logistics management

There has been a change in the way business is conducted today. Due to the development in technology, the logistics management has evolved and gained greater significance in doing business. Logistics management is treated as a part of the supply chain management that deals with management of goods in an efficient way. It is the management process that integrates the movement of goods, services, information and capital, right from the sourcing of raw material, to the consumer (Springinklee and Wallenburg, 2012). The goal of the logistics management is to provide the right product with the right quality at the right time in the right place at the right price to the ultimate customer (Mentzer *et al.*, 2004). Logistics management has been defined as a high priority for contemporary organizations. The success of logistics management is determined through the combination of efficiency, effectiveness and differentiation (Fugate *et al.*, 2010). Eventually, supply chain management measures through

procrastination affect price/cost, product's quality, innovation and marketing time (Mamad and Chahdi, 2013).

Previous researches have shown that excellence in performing logistics activities and capabilities is associated with superior organizational performance (Lynch *et al.*, 2000). Merriam-Webster defines efficiency as "effective operation as measured by a comparison of production with cost (as in energy, time, and money)," or as, "the ratio of the useful energy delivered by a dynamic system to the energy supplied to it." Efficiency pertains to getting the most out of a fixed set of resources. Fugate, Mentzer and Stank (2010) define efficiency as "the internal functioning of logistics and [as] generally [being] considered best represented through some ratio of the normal level of inputs to the real level of outputs." There is great importance of learning in today's hypercompetitive global supply chain environment especially through adopting learning principles in logistics (Esper *et al.*, 2007). Moreover, managers should be cautious to note the critical role of organizational contexts i.e., culture, affecting the relationship between supply chain integration and operational performance. Logistics managers are committed to check the quantity of products in stock daily, to check the minimum allowable amount of each product that is in stock at least once a week. In cases where the quantity of a product in inventory is below the minimum allowable value, they immediately place orders for that product. Besides the quantity, the basic information for every product that is in stock is its unit price and the total value of all products in stock should be as small as possible or within the optimum.

Logistics managers pay special attention to the records of the time required for procurement and retention according to each product. For each product in stock they should know the time needed for their purchase from order to delivery, the time each product spends in stock indirectly reduces the value of the product. There is a need for keeping products in stock is less possible. As long as the quantity of products in stock is lower, the inventory cost will be smaller.

Logistics managers keeping electronic records of inventories facilitate inventory control and shorten the time required for ordering products (Storey *et al.*, 2006). Detailed records kept for each executive transport in the company, facilitates the selection of any subsequent transport, comparing the cost of previous transports. The evidence of each transport shows the time required for delivery and the so called breakpoints. The future planning of any transport avoids all breakpoints that have occurred in previous transports. A detailed record of any transport should also be carried out in a special program or electronically. The existence of such systems and databases allows quick comparison of data from past activities and provides improved activity or reducing potential costs and time lost so the company can choose the most favorable and cheapest option (Bowersox *et al.*, 2007).

Logistics managers know how to properly choose the location of warehouses. Good location of the warehouse is advantage and every transport can be handled more promptly. Although the so called "idle" is inevitable in every transport, companies are constantly seeking ways to reduce it through proper storage of products and therefore, increasing their lifespan.

3. Empirical research

The survival of the company nowadays depends on whether or not it generates profit, but to make profits the total cost should be smaller than the total income. At a time when competition is intense, in order to be competitive on the market, the price of the product or service should be as low as possible and at the same time the quality of the product or service should be as high as possible. The only way to achieve this is the reduction of costs. The basic principles of supply chain management and logistics refer to just that, reducing costs and improving business performance (Fugate *et al.*, 2010). The introduction, implementation and continuous improvement of the logistics management practice are important tools in the process of increasing efficiency and effectiveness of the operations and maintaining the competitive advantage. There are couple of factors affecting supply chain efficiency: procurement process, distribution, staff competencies and technology (Kanda and Iravo, 2015).

The focus of the research in this paper is the logistics management and the relationship between the application of appropriate logistics management practices in the companies and reducing costs, and thus increasing the efficiency and results of companies' operations and at the same time, strengthening their competitive position on the market.

There are two goals set in this research. The scientific goal of the research is to gain new insights for logistics management in the Macedonian companies and to highlight the long-term effects of the application of appropriate management practices in this area. The practical goal of this research is to make the results available to domestic companies in order to enable improvement of their functioning and if there is an hesitation to encourage the introduction of a logistics and supply chain management system in their operations. The general hypothesis which has been set in accordance with the research subject is: If the company applies appropriate logistics management practices then the total costs will be reduced and the business results of the company will be improved.

4. Research analysis

The research has been conducted in eighty companies in the Republic of Macedonia of different size and industries in the period September to October 2015. The questionnaire has been distributed to 80 examinees, managers on middle and high level positions, employed in these companies. Based on respondents' answers to the questions related to the four important components in logistics - inventory, transportation, storage and information, the effectiveness of the logistics management is been determined and whether it leads to increased efficiency or reduction of total costs in the company.

To the question: *In the company, continuously or at least once a week, the minimum amount of each product in stock is been checked*, the following answers were received: *I completely agree* – 56 examinees, or 70%, *I partially agree* – 16 examinees or 20%, *I partially disagree* - 5 examinees or 6%, and *I completely disagree* – 3 examinees or 4% (shown in Figure 1).

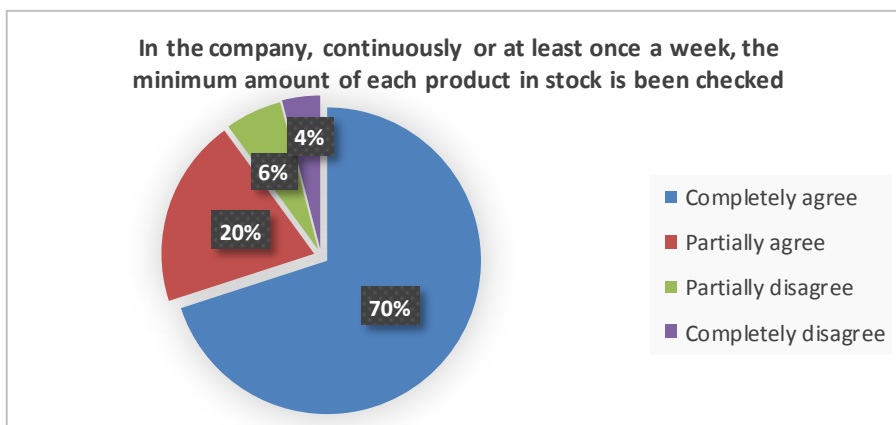


Figure 1. Existence of inventory management

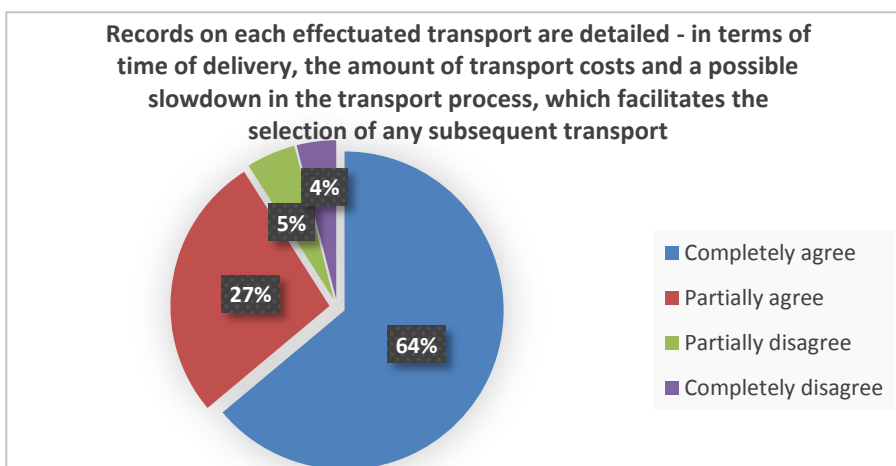


Figure 2. Existence of transport management

To the question: *Records on each effectuated transport are detailed - in terms of time of delivery, the amount of transport costs and a possible slowdown in the transport process, which facilitates the selection of any subsequent transport*, the following answers were received: *I completely agree* – 54 examinees, or 64%, *I partially agree* – 19 examinees or 27%, *I partially disagree* - 5 examinees or 5%, and *I completely disagree* – 2 examinees or 4% (shown in Figure 2).

To the question: *Proper storage reduces storage costs of the products and does not adversely affect the lifetime of the product*, the following answers were received: *I completely agree* – 57 examinees, or 72%, *I partially agree* – 17 examinees or 21%, *I partially disagree* - 5 examinees or 6%, and *I completely disagree* – 1 examinees or 1% (shown in Figure 3).

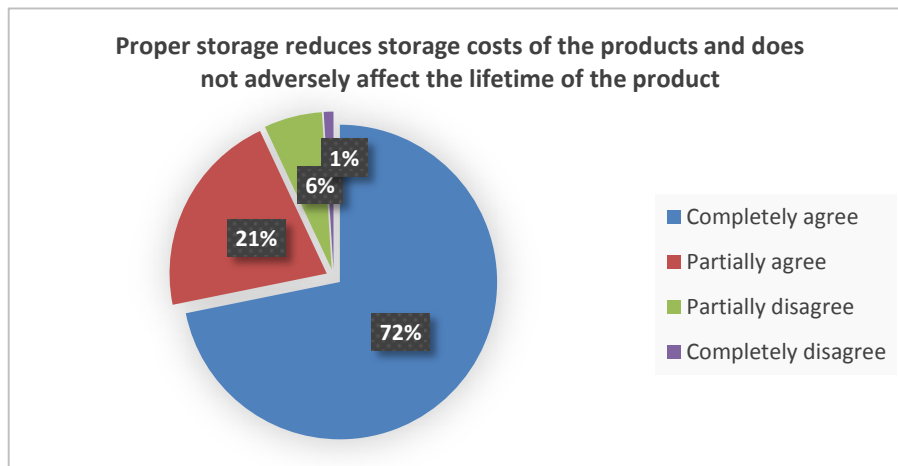


Figure 3. Existence of storage management

To the question: *The company has an electronic record of the quantities of products in stock and of the effectuated transports, facilitating the control process and increasing the flexibility of these activities*, the following answers were received: *I completely agree* – 60 examinees, or 75%, *I partially agree* – 14 examinees or 18%, *I partially disagree* - 5 examinees or 6%, and *I completely disagree* – 1 examinees or 1% (shown in Figure 4).

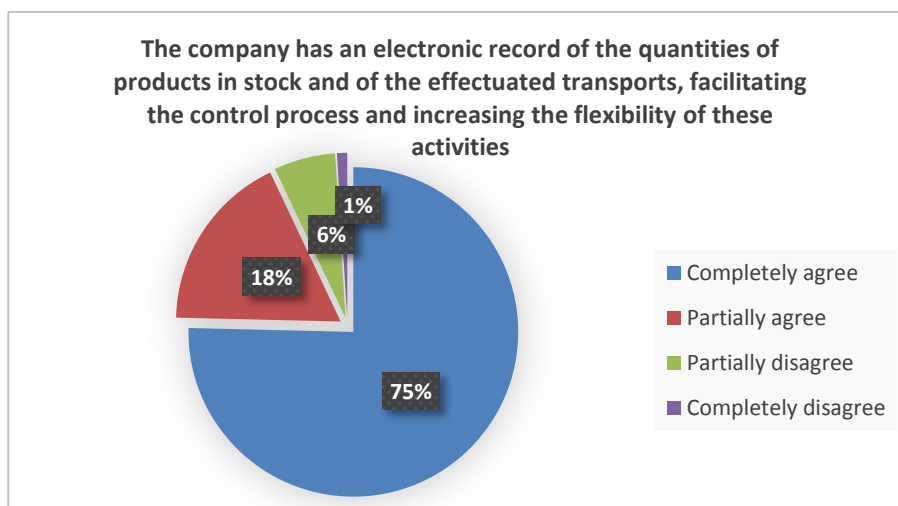


Figure 4. Existence of stock and transport electronic records

To the question: *Proper and well-time decisions are often made based on accurate, reliable and in time information*, the following answers were received: *I completely agree* – 55 examinees, or 69%, *I partially agree* – 21 examinees or 26%, *I partially disagree* - 3 examinees or 4%, and *I completely disagree* – 1 examinees or 1% (shown in Figure 5).

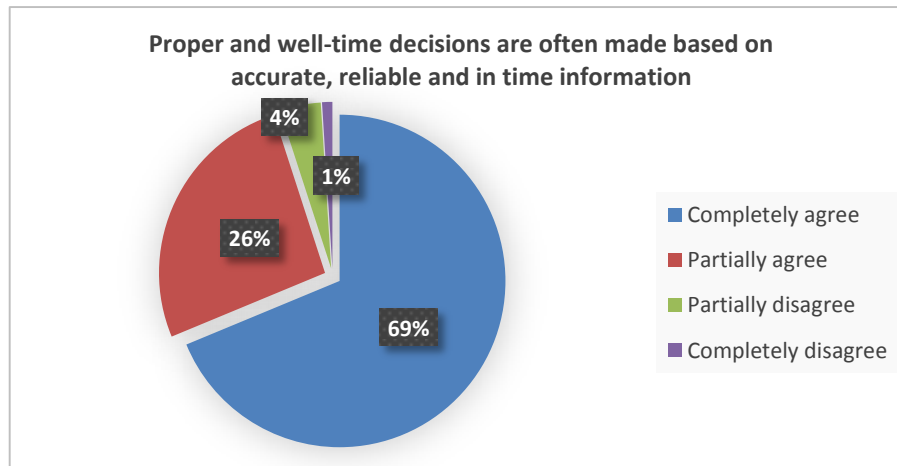


Figure 5. Existence of information management

On basis of the research and the data obtained from it, the four separate hypotheses have been proven: Hypothesis 1 - If the level of inventories is controlled, then the inventory costs will be reduced; Hypothesis 2 - If the internal and external transport is permanently controlled and improved, then the transport costs will be reduced; Hypothesis 3 - If a detailed control and warehouse management is implemented, then the storage costs will be reduced; Hypothesis 4 - If the internal and external information is used properly, then proper and timely decisions based will be made reducing the total costs of the company. According to the research results proving the four different hypotheses, we come to the confirmation of the general hypothesis.

5. Conclusions

One of the primary goals of any organization must be continuous improvement of operations and the effectiveness and efficiency increase. The research aims to promote a positive example of implementing efficient logistics management practices in the companies in the Republic of Macedonia. Based on the research many information are obtained, do companies pay attention to stock control, to effective storage selection, to proper transportation options, how information has been stored, whether companies implement proper coordination and integration of business activities and how companies benefit from reduced operations costs.

The results show that companies control the levels of stocks, or keep records electronically of the minimum amount of inventory and thus decrease the amount of so-called "dead" capital that stands in storage. When inventory control is easier, more flexible the procurement is and the costs are lower. Also, companies keep records of the time required for procurement and storage. According to the answers received from the questionnaire, the transport in companies is continually monitored, controlled and improved. The records of all transports made allow timing of delivery and thereby predict and reduces the costs of future transports. In this regard, the information of the transport costs available in the electronic records from already performed transports allows choosing the cheapest and most efficient transport in the future, and thus reduction of the transportation costs.

Research shows that proper storage management and control reduces storage costs. Companies choosing the location of the main and auxiliary storage, reduce the "idle", and with proper storage of stocks avoid possibilities of reducing products lifespan and additional costs due to improper storage. Also, the electronic records of all products stored enables the control of storage costs to be faster, better and simpler, thus reduction of storage costs, and therefore the total costs.

The results indicate that accurate, relevant and timely information from inside and outside the company enables appropriate and timely decision making. To this end, it is complete management information is necessary, relevant data selection and control, rapid transmission and proper use. The accuracy of data avoids making inappropriate decisions and unnecessary costs, and if the information is selected in order of importance then the time required for processing such data will be shorter and will allow quickly making important decisions. Electronic databases provide access to information anytime and

a possibility of usage in any temporal and spatial distance when timely decisions are critical to the company, and thus lead to a reduction of total costs while increasing its success.

Therefore, the logistics activities are important to the contemporary companies, gaining them more value relative to their costs. The logistics management is the area where companies should pinpoint and improve in order to be between the most successful companies on the market.

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