



Research Article

# Relationship between Logistics Management and Corporate Competitiveness in a Pharmaceutical Company

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## Abstract

The study is designed to understand how adequate logistics management allows being competitive in the pharmaceutical sector. The general objective was to determine the relationship between Logistics Management and Corporate Competitiveness in the pharmaceutical sector. The type of study was basic, quantitative approach, and descriptive correlational scope, using the survey as the technique and the questionnaire as the instrument. The results obtained allowed concluding that there is a direct and moderate relationship between Logistics Management and Corporate Competitiveness where the Pearson coefficient is equivalent to 0.572. Therefore, the better the logistics management, the greater the competitiveness of the company.

**Keywords:** Competitiveness, Pharmaceutical companies, Logistics management, Logistics system.

## Introduction

In the world today, faced with pandemic contexts resulting from SARS-CoV-2, the pharmaceutical sector has been in a complex and dynamic environment, bringing with it internal adaptation, which involves guaranteeing the timely and appropriate distribution of medicines,

contingency plans for drug stocks, and the use of information technologies. These aspects allow for differentiation and immediate responses in a context that is not very predictable (Cabañas y Queralt, 2020, pp.53-56). The high demand for pharmaceutical products, due to this situation, has generated problems of shortages. This fact has led to the need to guarantee efficiency and

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effectiveness in the supply of products (Climent and Selva, 2020, pp.21-23). To achieve competitiveness and differentiation, companies in the pharmaceutical sector require large investments in research and development and their logistics processes (Escandón et al., 2016, pp.39-46).

It is worth noting the importance of logistics management in this area, for decision-making related to drug procurement procedures and stock management. Thus, according to the World Bank (2016), Germany, the Netherlands, and Singapore are three significant leaders in logistics management due to the continuous development and boost in innovation for competitiveness. Additionally, in Portugal, thanks to innovation, pharmacies have implemented automated systems for the distribution of products from their warehouse directly to the customer, allowing personalized attention. In this sense, Europe stands out as the continent with the most outstanding companies regarding logistics efficiency (Caetano Da Rosa, Au Yong, and Branco, 2018, pp.1-6).

On the other hand, in South America, Chile is considered a benchmark in the performance of international cargo and transportation, which are key aspects of economic competitiveness. In this sense, corporations that do not have efficient logistics management are at risk of being uncompetitive (World Bank, 2012).

In Peru, the pharmaceutical sector has shown annual growth of more than 10% in drug sales since 2001, and a 15% increase is forecast. It is also estimated that there is an unsatisfied demand, which indicates the need to improve standards in logistics processes (Vásquez, 2015). In the consolidated pharmaceutical industry, new techniques have been implemented to maintain a level of products according to demand and low costs. However, small and medium-sized drugstores and pharmacies continue to perform their logistics processes empirically and one of the main problems in these establishments is the inadequate planning in the procurement process. Thus, problems arise in the placing of orders, the inadequate reception, storage, and dispatch of products, causing losses. As a result, these companies fail to succeed (Mantari and Quispe, 2019, pp.4-14).

Competitiveness is the capacity of economic agents to remain in the market. Regarding the level of competitiveness, Peru is rated at 4.80 points out of 10 (optimum level), because only

30% of Peruvian companies have competitive supply chains, while 10% of local organizations are in the learning process; 35% are primary, i. e., companies with low levels of automation and reduced efficiency in supply chain management; and, finally, 25% are the pragmatists (those that despite having low levels of automation manage to be effective in the management of their supply chain) (Peralta, 2015, 4-6). Therefore, the importance of logistics management is improving and has a long way to go.

Thus, planning the production process allows companies to improve their readiness and agility to face market turbulences (Castillo and Meléndez, 2021, p.25).

In Cajamarca's pharmaceutical sector, difficulties have been reported concerning supply and stocks available to meet customers' medicine requirements, due to the lack of knowledge and poor planning in these areas. However, due to the presence of large pharmaceutical companies, small and medium-sized companies need to adopt measures for logistics management. Otherwise, they will be replaced by the competition. The importance of logistics management lies in cost reduction and profit maximization, which allows being competitive in the market (Leiva and Marín, 2017, p.42).

Over time, people have carried out certain logistics activities, and their evolution has allowed organizations to consecutively deal with the processes of logistics management. Logistics management takes over supply chain management and proceeds to control, efficiently but also effectively, the flow and storage of goods and services, as well as related information, from the point of origin to the point of consumption, with the purpose of satisfying customers (Carro and Gonzalez, 2013, p.16).

Next, in the logistics field, advances have caused logistics operations to adapt to the needs presented by society and the pace of commercial transactions necessary to meet consumer demand (Escobar, 2010 cited in Fontalvo, De la Hoz, and Mendoza, 2019).

Competitiveness emerged in organizations where it is chained to their ability to hold a steady increase concerning the capacity to design, produce and commercialize goods and services equally or more effectively and efficiently than their competitors (Enright et al., 1994 cited in Cabezas, 2017). Its purpose is to achieve that the company reaches a profitable and sustainable

position taking into account the forces that govern industry competition (Porter, 1991 cited in Porter 2015).

Currently, logistics management and corporate competitiveness are strongly relevant in the business environment, since they drive the growth and development of organizations to improve their profitability and permanence in the market. Likewise, they have an impact on the decrease of logistics costs, which allows the adaptation of processes through technological advances, excluding repetitive methods significantly heading towards competitiveness (Faichin, 2018, pp.20-29). Therefore, the company's capacity to produce and commercialize in better cost and quality contexts for customers is important.

Among the dimensions used to measure Logistics Management are: I) Logistics strategy: it is one of the fundamental bases in the global approach of the company since it adopts an orientation about adding value to the customer in the market regarding logistics decision-making. II) Logística coordination effectiveness: it generates better work practices among the company's areas and training with strategic projection. III) Commitment to customer service: it is one of the multifunctional attributes of logistics management, which adds value to the customer and must be intrinsically immersed in the overall business strategy (Spillan, Mintu, and Kara, 2018).

On the other hand, the dimension used for Corporate Competitiveness is Division Competitiveness: it is the effective responsiveness in terms of needs and offers compared to competitors of products and services. This dimension arises as a systematic response from generating strategies. It also aims to achieve a rapid response effect on the different stakeholders of the company, such as competitors, suppliers, and customers (Murillo, 2018).

As for the retrospective studies, after investigating and identifying findings related to this study, the following research works have been considered.

At the international level, the research entitled "Pharmacy service facing the logistics of medicines procurement", carried out at the Spanish Society of Hospital Pharmacy, aimed to establish all the necessary measures within the logistics process to ensure the safe and effective

availability of drugs for patients during the COVID crisis. The research was cross-sectional and experimental. The results obtained were that the quality management system has allowed working logically, orderly, and systematically, focusing on meeting the requirements of the stakeholders and continuously evaluating the logistics processes, as well as integrating all computer systems, including applications, in the pharmaceutical area.

The research "Logistics and procurement for a pharmacy network", carried out at the University of Guayaquil - Ecuador, was aimed at detailing the procedures to be followed to optimize the installed capacity, as well as to achieve the technical and efficient management of the inventory, allowing the reduction of sales costs. The level of research was correlational, with a non-experimental cross-sectional design. The results show that there is a relationship between logistics and procurement. The Pearson coefficient was used to prove that there is a direct positive relationship, demonstrating that the better the logistics, the better the procurement management.

The research entitled "Improvement strategies in cold chain logistics for pharmaceutical products" conducted at Universidad EAN, Bogotá - Colombia, was aimed at describing the packaging, packing, and thermal traceability methods available in the market, and identifying options to better ensure the integrity of the cold chain. The type of research was descriptive. The results obtained suggest that the implementation of technology represents improvements to maintain the integrity of the chain without temperature changes imposed by nature in the pharmaceutical industries.

In the national context, there is a research study entitled "Inventory logistics and its impact on the sales of the Botica "24 horas" (Drugstore 24 hours) in the province of Ambo - 2013" conducted at the Universidad Nacional Hermilio Valdizán del Perú. The study aimed to define the impact of inventory logistics on sales. The research had a correlational, non-experimental, cross-sectional design. It was found that the inventory management carried out by the organization is not adequate, since they do not consider the adaptation of plans in decision making.

Another study refers to the "Proposal to improve the logistics process of pharmaceutical products in the company Santa Ursula Servicios de Salud

E.I.R.L." conducted at the Universidad Tecnológica del Perú (Technological University of Peru), aimed at developing a proposal to improve the logistics process of pharmaceutical products by applying the ABC and 5s methods. The research was descriptive and had a non-experimental, cross-sectional design. It was concluded that purchases are made emphasizing the quantities required according to the needs to be met in the company. The logistics process in pharmacies is efficient due to their subjective planning based on the updated information of their system.

Now then, as previous background, in the local context, there is a research study entitled "Improvement of the inventory and warehouse management of the Pharmacy Nimadi E.I.R.L. to reduce logistics costs" carried out at the Universidad Privada del Norte, whose objective was to diagnose the inventories, warehouses, and costs in the company, identifying the critical points of warehouse management. The type of research was descriptive. The results show that inventory management allows an increase in sales levels, as well as the growth in the market, contributing to the achievement of the organization's goals regarding the number of products entering the warehouse.

As it can be observed from the research studies presented above, they are important contributions to the relationship between Logistics Management and Corporate Competitiveness.

In this sense, the general objective of this research was to determine the relationship between logistics management and corporate competitiveness in Boticas Marifarma, Cajamarca 2021. Consequently, the general hypothesis was that there is a direct relationship between logistics management and corporate competitiveness in Boticas Marifarma in the pharmaceutical sector, Cajamarca 2021.

Likewise, this research was carried out in a pharmaceutical organization in Cajamarca. The problem involves the supply and stocks available for the distribution of medicines to the public, and, therefore, to achieve business competitiveness.

### **Materials And Methods**

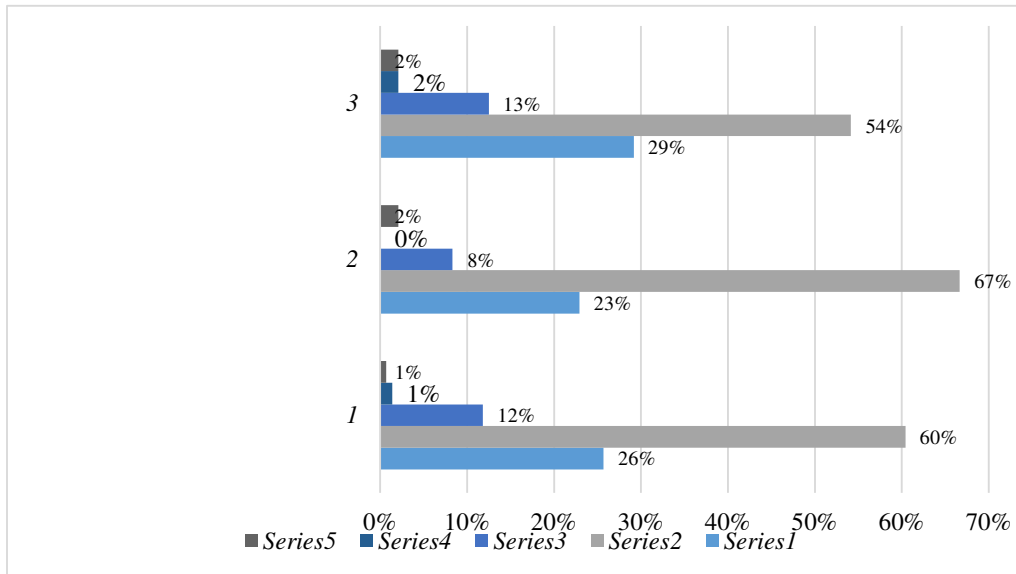
The research type was basic because it represents a set of systematic, critical, and empirical processes that are applied to the study of a problem. In addition, the quantitative approach was considered, characterized by representing a set of sequential and evidential processes. The scope was descriptive and correlational, with a non-experimental and cross-sectional design, because the variables were not manipulated (Hernández et al., 2018).

The population considered was 19 workers of the company Marifarma, considering a finite population, so, a non-probabilistic sampling by convenience of 16 workers belonging to the logistics, administrative, and sales areas, was considered. Those belonging to other areas were not taken into account.

The survey was the technique used and a questionnaire based on the Likert scale, previously validated, was used as the instrument. For data analysis, the IBM SPSS Statistics 27 was used. The information obtained from the survey applied to the workers is shown in the tables, discussion, and conclusions.

This study was conducted taking into account the data collection for its subsequent analysis. It began with the preparation of the survey using Google Forms, to be answered by the workers, who are the focus of the study. With this information, the analysis of the findings obtained was carried out, and the direct and moderate relationship between the variables was determined using the Pearson statistic with a correlation coefficient of 0.572.

**Results**

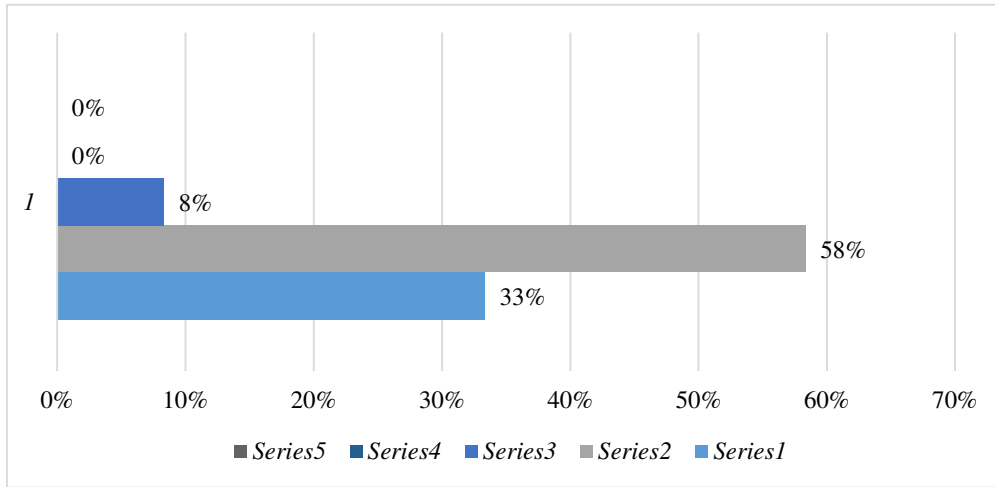


**Fig. 1. Logistics Management and its dimensions**

Source: own research of autor

Fig. 1, regarding the Logistics Management variable, shows that the "Logistics coordination

effectiveness" dimension was the best rated with a value of 66.67%, in the "Agree" opinion.

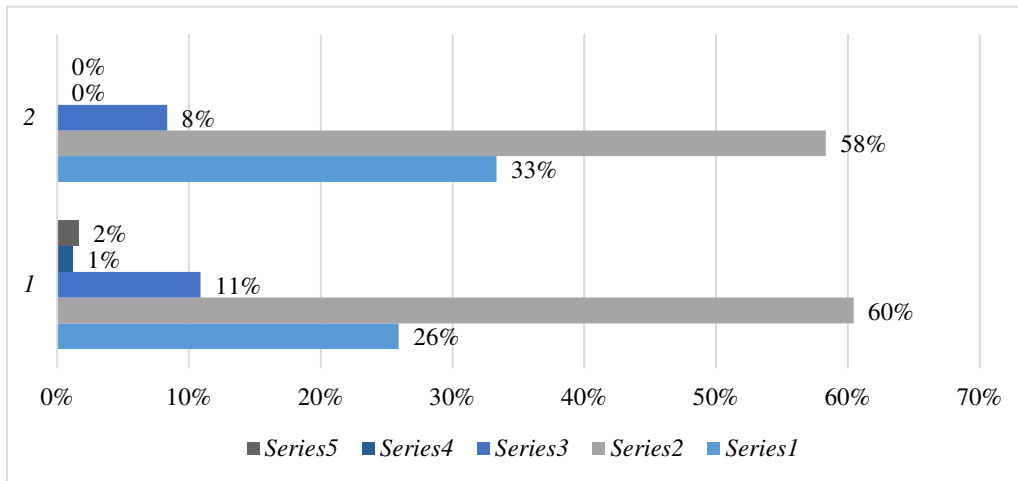


**Fig. 2. Corporate Competitiveness and its dimensions**

Source: own research of autor

Fig. 2, regarding the Corporate Competitiveness variable, shows that the "Division Competitiveness" dimension has been rated with

a value of 58.33%, indicating that the collaborators of Boticas Marifarma "Agree".



**Fig. 3. Overall rating of the variables "Logistics Management" and "Corporate Competitiveness"**

Source: own research of autor

Fig. 3, shows that the variables with an overall rating of "Agree" are: Logistics Management with

60.42% and Corporate Competitiveness with 58.33%.

**Table 1. Hypothesis test of the Logistics Management and Corporate Competitiveness of Boticas Marifama**

<i>Pearson's correlation</i>		
<i>Logistic Management</i>	<i>1</i>	<i>,572*</i>
<i>Corporate Competitiveness</i>	<i>,572*</i>	<i>1</i>

Source: own research of autor

In Table 1, the Pearson test shows that there is a correlation between the variables, with a significance of 0.021, which is lower than 0.05. Therefore, the research hypothesis is accepted. The correlation coefficient is equal to 0.572, so, it is determined that there is a direct and moderate relationship between Logistics Management and Corporate Competitiveness in Boticas Marifarma, in the city of Cajamarca, 2021. This indicates that the greater the Logistics Management, the greater the Corporate Competitiveness.

### Discussion

After obtaining the results and testing the hypotheses, it was found that the variables worked in the same line, whose findings indicate a correlation between logistics management and corporate competitiveness.

According to Palomar and Alvares (2020), it is essential to establish the necessary measures within the logistics process to efficiently guarantee the availability of medicines for customers, so as to increase competitiveness compared to other pharmacies and drugstores that are part of the industry, resulting in an approach to logistics processes. Therefore, these results are consistent with the findings of this research.

Espiritu and Ponce (2015) found that the impact of inventory logistics is highly relevant for sales, and, therefore, enables the company's competitiveness. Inadequate logistics management affects sales and competitiveness. Likewise, this study agrees with the findings, since poorly applied logistics do not increase corporate competitiveness.

Bravo and Morales (2021) indicate that inventory management in logistics allows for an increase in sales levels, as well as the growth in the market, achieving the organization's goals regarding the products entering the warehouse and their availability to customers. These conclusions are related to the study carried out,

since there is a relationship between the variables.

It is also proven by the statements of the World Bank (2012) which indicated that corporations that have efficient logistics management can be more competitive. In this study, it was found that the better the logistics management, the more competitive the companies.

### Conclusions

The research concludes that 60.42% of the respondents "Agree" with Logistics Management and its importance in the production process. On the other hand, 58.33% "Agree" that Corporate Competitiveness is essential for the company to have continuity in the market. In addition, with the general hypothesis test, it is determined that there is a direct and moderate relationship between the variables, Logistics Management and Corporate Competitiveness, with a correlation coefficient of 0.572.

In turn, the specific hypothesis test determines the relationship between Logistics Management and the Division Competitiveness dimension, where it was obtained that the correlation coefficient is 0.572, demonstrating the direct and moderate relationship between Logistics Management and the Division Competitiveness dimension.

The research has shown theoretical consistency, finding a correlation between both variables. Therefore, it is concluded that Logistics Management has been applied over time in business, being important in the production process of goods and services, related to the company's capacity to produce and commercialize in better cost and quality contexts for customers, which raises the Corporate Competitiveness in the market.

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