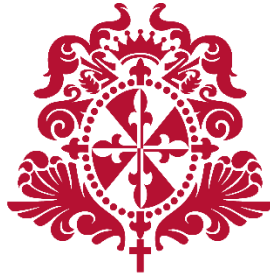


UNIVERSIDAD DEL ROSARIO



**THE SIGNIFICANT ROLE OF THIRD-PARTY LOGISTICS (3PL) OPERATORS AS
FOSTERERS OF ORGANIZATIONAL PERFORMANCE IN COLOMBIAN
COMPANIES**

TRABAJO DE GRADO

JULIANA RESTREPO OROZCO

BOGOTÁ D. C.

2016

UNIVERSIDAD DEL ROSARIO



**THE SIGNIFICANT ROLE OF THIRD-PARTY LOGISTICS (3PL) OPERATORS AS
FOSTERERS OF ORGANIZATIONAL PERFORMANCE IN COLOMBIAN
COMPANIES**

TRABAJO DE GRADO

JULIANA RESTREPO OROZCO

GIANCARLO SALAZAR PEDREROS

PROGRAMA DE ADMINISTRACIÓN EN LOGÍSTICA Y PRODUCCIÓN

BOGOTÁ D.C.

2016

TABLE OF CONTENTS

GLOSSARY	5
ABSTRACT.....	8
RESUMEN	9
1. INTRODUCTION	10
1.1 Background and problem statement.....	10
1.2 Significance of the study	12
1.3 Objectives.....	13
1.3.1 General objective	13
1.3.2 Specific objectives	13
1.4 Justification in relation to the line and program.....	14
2. METHODOLOGICAL FRAMEWORK.....	15
3. THEORETICAL AND CONCEPTUAL FRAMEWORK.....	17
3.1. Why companies consider outsourcing their logistics services?	17
3.1.1. The Resource-Based View theory (RBV).....	18
3.1.2. The Transaction-Cost Economics theory (TCE).....	20
3.2. The logistics service providers (LSP)	22
3.3. The Third-Party Logistics (3PL)	24
3.3.1. Concept	24
3.3.2. Functions.....	27
3.3.3. Outsourcing engagements.....	29
3.3.4. Third Party Logistics (3PL) in Colombia	31
3.3.4.1. Important factors that Colombian companies consider in order to work with Third Party logistics (3PL) operators	35
3.3.5. Advantages of working with a 3PL	38
3.3.6. Possible disadvantages of working with a 3PL.....	41
4. CONCLUSIONS AND RECOMENDATIONS	43
5. BIBLIOGRAPHIC REFERENCES	46

FIGURES INDEX

Figure 1. Categorization of Logistics Functions.....	28
Figure 2. Outsourcing Relationships.....	31

TABLES INDEX

Table 1. 3PL Outsourcing Functions	27
Table 2. Activities associated with contract logistics.	28

GLOSSARY

In this study, concepts like Logistics, Supply Chain, Outsourcing, Logistics Service Providers, Third Party Logistics (3PL) and Organizational performance will be used, therefore, it is important to define them for an appropriate understanding from the reader.

Logistics: The Council of Logistics Management (CLM) defines logistics as “the part of the process of the supply chain that plans, leads out and controls the efficient and effective flow and storage of goods and services, and of related information, from the point of origin to the point of consumption, in order to meet customer requirements” (Ballou, 2004, p. 4). Logistics adds value to the goods or services essential for customer satisfaction and sales.

Supply chain: A supply chain encompasses all “the activities related to the flow and transformation of goods, from raw material stage (extraction) to the end user as well as the flow of related information. Materials and information flow upstream and downstream in the supply chain” (Ballou, 2004, p. 5). A supply chain is dynamic, and it implies a constant flow of information, products and money between the different stages. Manufacturers and suppliers are included within the supply chain, however these are not the only actors; the carrier, warehouseman, retailer, and even the customer himself are also included (Chopra & Meindl, 2008). Its main purpose is to fulfill customer needs and, in the process, generate profit.

Logistics and supply chain: The logistics’ main objective is to optimize the whole supply chain. Ronald H. Ballou relates supply chain and logistics with a specific concept; Supply Chain Management (SCM), which “emphasizes the logistics interactions that take place between marketing, logistics, and production functions within an organization, and the interactions that take place between independent firms legally within the product flow channel” (Ballou, 2004, p. 5).

Logistics and Supply chain is a set of functional activities, such as transportation, inventory control, among others, constantly repeated along the flow channel, through which raw materials are converted into final products and value is added for the consumer (Ballou, 2004).

Outsourcing: Outsourcing can be defined as obtaining services from an external service provider. It refers to “a company that contract with another company to provide services that might otherwise be performed by in-house employees” (Rajesh, Ganesh, & Pugazhendhi, 2013, p. 38). In his book “*Outsourcing*”, Ben Schneider defines the concept as “the total or partial delegation of an internal process to a contracted specialist” (Schneider, 2004, p. 33). He also states it is a management tool through which an organization can choose to concentrate in its core business only, without participating in important processes but not inherent to its distinctive activities.

Logistics Service Provider (LSP): It is an external supplier which manages, controls and provides logistics activities on behalf of a contractor, “performing either all or part of the company’s logistics functions” (Kisperska-Morón & Krzyzaniak, 2009, p. 218), quoted by (Zowada, 2013, p. 112). The activities must include at least the management and implementation of transport and storage (Berglund, 2000). There are different types of LSPs, such as 2PL, 3PL, and 4PL. Each one of these will be fully explained later in this paper, specifically in section 3.3.

Third party logistics (3PL): Third Party Logistics, or 3PL, can be defined as a supply chain practice in which one or more logistics processes are outsourced to an external provider. A Third-party Logistics operator focuses on providing integrated logistics services to its customer; the customer outsources a function or process to the 3PL, generally with a long-term contract. This operator customizes the services for each specific firm, integrating and bundling them together. Bask (2001), portrays Third Party Logistics (3PL) as it follows: “relationships between interfaces in the supply chains and third-party logistics providers, where logistics services are offered, from basic to customized ones, in a shorter or longer term relationship, with the aim of effectiveness and efficiency” (Bask, 2001, p. 474), quoted by (Marasco, 2008, p. 128).

Organizational performance: It refers to the level of competitiveness of an organization as a whole. Performance is a concept related to the attainment of objectives set by the organization, and its measure is the degree in which the actions respond to the planned strategy to achieve expected results. Performance can be measured by quantifiable parameters called *performance indicators*. This concept can be understood as the direct link between management and strategy (del Castillo & Vargas, 2009).

ABSTRACT

The removal of barriers between countries is a consequence that comes along with globalization and the several FTA (free trade agreements) signed in recent years. This implies a significant growth of international trade, which is reflected on a higher complexity in the organizations' supply chains all over the globe. Because of this, the search for alternatives to achieve high levels of productivity and competitiveness within companies is necessary in Colombia, since the environment has become increasingly complex, saturated with both local and foreign competitors. To maintain a favorable competitive position, companies must focus on the activities that add value to their business. To do so, one of the alternatives is the outsourcing of logistics functions to firms specialized in the handling of these services. Such companies are called the *Logistics Service Providers (LSP)*; this is an external entity to the organization which manages, controls and provides logistics activities on behalf of a contractor. The activities may include all or part of the whole logistics activities, but at least the management and implementation of transport and storage must be included (Berglund, 2000).

This paper was written through a documentary research from the review and analysis of the existing literature, and by consulting certain companies that outsource their logistics processes, as well as companies providing logistics services, both in Colombia. In this way, the purpose of the paper is to analyze the role of Third Party Logistics (3PL) operators as fosterers of organizational performance in Colombian companies, in order to inform MSMEs (micro, small and medium enterprises) about the benefits of working with Logistics Service Providers (LSP) as a means for the improvement of the country's competitive position.

Key words: Logistics Service Provider (LSP), Third Party Logistics (3PL), Supply chain, Logistics, Organizational performance, Competitiveness.

RESUMEN

La eliminación de barreras entre países es una consecuencia que llega con la globalización y con los acuerdos de TLC firmados en los últimos años. Esto implica un crecimiento significativo del comercio exterior, lo cual se ve reflejado en un aumento de la complejidad de la cadena de suministro de las empresas. Debido a lo anterior, se hace necesaria la búsqueda de alternativas para obtener altos niveles de productividad y competitividad dentro de las empresas en Colombia, ya que el entorno se ha vuelto cada vez más complejo, saturado de competencia no sólo nacional, sino también internacional. Para mantenerse en una posición competitiva favorable, las compañías deben enfocarse en las actividades que le agregan valor a su negocio, por lo cual una de las alternativas que se están adoptando hoy en día es la tercerización de funciones logísticas a empresas especializadas en el manejo de estos servicios. Tales empresas son los *Proveedores de servicios logísticos (LSP)*, quienes actúan como agentes externos a la organización al gestionar, controlar y proporcionar actividades logísticas en nombre de un contratante. Las actividades realizadas pueden incluir todas o parte de las actividades logísticas, pero como mínimo la gestión y ejecución del transporte y almacenamiento deben estar incluidos (Berglund, 2000).

Este documento se llevó a cabo mediante una investigación documental, a partir de la revisión y análisis de la literatura existente y consultando a ciertas empresas que tercerizan sus procesos logísticos, al igual que a empresas proveedoras de servicios logísticos, ambos casos en Colombia. De esta manera, el propósito del documento es analizar el papel de los Operadores Logísticos de Tercer nivel (3PL) como promotores del desempeño organizacional en las empresas colombianas, con el fin de informar a las MIPYMES acerca de los beneficios que se obtienen al trabajar con LSP como un medio para mejorar la posición competitiva del país.

Palabras Clave: Proveedor de Servicios Logísticos, Operadores Logísticos de Tercer nivel (3PL), Cadena de Suministro, Logística, Desempeño Organizacional, Competitividad.

1. INTRODUCTION

1.1 Background and problem statement

In today's world, the only constant thing is change. It is not possible to act based on suppositions of stability, simple structures, and homogeneity. Nothing is certain, especially in the businesses' environment, which have to operate in increasingly competitive conditions due to globalization and fierce competition. It is essential to have a wider vision, considering the organization as a complex system with multiple interacting variables, rather than a machine-type entity. Nowadays, companies face new realities, such as uncertainty, complexity, diversity, and transparency (Moss, 2010). As a consequence, "business processes have been expedited, marketing channels have become more diverse and product life cycles have been shortened" (Lee, Baker, & Jayaraman, 2012, p. 5615).

Thus, to ensure business growth, adaptability, competitiveness and sustainability, companies have to strengthen their positions by focusing on their core business¹ and progressively taking other activities handling outside the company (Núñez-Carballosa & Guitart-Tarrés, 2011) (Rahman, 2011). It is imperative for companies to know that individual businesses no longer compete as mere autonomous entities, but instead they compete as whole supply chains. It would be extremely difficult to achieve this without close collaboration with external partners; and so the concept of supply chain management (SCM) arises. Its main purpose is to effectively manage the flow of products, services, information and money among the different actors in a supply chain, achieving cost reductions and increasing the perceived value of goods and/or services (Aguezzoul, 2014). "Logistics management and supply chain management (SCM) have become important sources of sustainable competitive advantage" (Day, 1994; Olavarrieta & Ellinger, 1997), quoted by (Shang, 2009, p. 331).

¹ The Core Business of an organization is composed by activities that generate value for the company.

In continuance, multiple concepts have emerged following the circumstances mentioned above, such as logistics cooperation, logistics alliances, logistics service providers (LSP), and contract logistics. These describe the different organizational practices in which the company reassigns the logistics functions that were conducted internally by the own company, to an external entity (Meidutė, Litvinenko, & Aranskas, 2012), which is presumed to have more expertise and better capacity to perform those activities. Firms are now competing by developing different supply chain strategies which are effective to the extent that they focus on the importance of customer satisfaction in their business transactions (Lee, Baker, & Jayaraman, 2012).

Lee, Baker, & Jayaraman (2012, p.5616) sustain that “the market for 3PLs is growing by nearly 18% annually and involves services such as warehouse management, shipment tracking, transportation management and reverse logistics”. According to Wallenburg (2009), the number of competitors has increased at a constant rate in the logistics service industry over the past decades, due to the rising penetration of logistics markets. “Today, about 80 percent of industrial companies outsource logistics activities to logistics service providers (LSPs) accounting for an average of 60 percent of their total logistics costs” (Langley, et al., 2007), quoted by (Wallenburg, 2009, p. 75). As the Logistics Service Providers market grows, it becomes clear that outsourcing practices are being increasingly adopted by companies worldwide, which are getting more and more demanding with the services provided.

In its measurement of the Logistics Performance Index (LPI) in 2014, The World Bank revealed Colombia ranked 97th out of 160 countries in the sample (The World Bank, 2014). Given that Colombia is a country in the developing world, and that is one of the six emerging economies ‘CIVETS’ (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa), it is of interest to find alternatives for increasing the nation’s productivity and competitiveness. Colombia’s MSMEs (Micro, Small and Medium Enterprises) represent around 90% of all businesses which account for 73% of employment and 53% of the gross production of several economic sectors, such as the industrial, commercial and service sector. However, on the past years only 13% of MSMEs in Colombia has exported, and of the remaining 87% that have not, only 7% has tried. In addition to the high export costs, the reason for these numbers comes from the complexity of the logistics processes involved in exportation such as delays in processing and manipulation of merchandise (Rodríguez, 2003).

As if that were not enough, there is a great lack of knowledge about the benefits that result from engaging the services of a LSP (Logistics Service Provider), plus some fear on the part of companies to share valuable information to an external entity, and resistance to change, a common characteristic of Latin American culture. All of this restrains the potential growth of Colombian enterprises that could bring their products to multiple markets worldwide, exploiting productive and competitive practices.

In this way, there comes the need to find solutions to increase the performance of MSMEs in Colombia, encourage exportation and thus improve the competitive position of the country. In order to do so, the present study aims to understand the effect of the use of a LSP in organizational performance; these entities must handle the logistics processes in the best way possible having a greater capacity, experience and expertise than that of the contracting company. This will be developed by explaining why companies outsource their logistics processes, outlining the diverse services offered by LSPs and examining in detail the advantages and possible disadvantages of outsourcing logistics processes with them. In order to carry out a detailed analysis of these issues, a review of the literature discussing such topics was conducted.

1.2 Significance of the study

The results of this research will help answer questions about the outsourcing of logistics services, clarify the role of Logistics Service Providers (LSP) and their implications for the organizational performance of the contracting company, as well as contribute in the decision making of individuals or companies interested in contracting services with a LSP.

Additionally, this paper can increase the chance of Colombian companies to elevate their access to international markets, as the investigation shows real cases of Colombian companies that have worked with these logistics operators, who facilitate the export/import process. In this way, the author intends to provide the knowledge of how a LSP can help the company become more

competitive in a world with highly saturated markets where clients seek for the best. In this way, managers will have more information and will be motivated to give a step towards exportation, taking local products to international markets.

Thus, this study may have a significant impact, not only by encouraging exportation, but also by helping Colombian SMEs to grow and become more competitive with the use of Third Party Logistics (3PL) in markets where internationalization is present. Finally, this study will also provide knowledge to the logistics research area, where only recently the impact of 3PL on companies' supply chain is being studied.

1.3 Objectives

1.3.1 General objective

The general objective of this paper is to analyze the role of Third Party Logistics (3PL) operators as fosterers of organizational performance in Colombian companies, in order to inform MSMEs (micro, small and medium enterprises) about the benefits of working with Logistics Service Providers (LSP) as a means for the improvement of the country's competitive position.

1.3.2 Specific objectives

- A. Determine the reasons why companies consider outsourcing their logistics processes, sustained on established theories.

- B. Describe the different types of Logistics Service Providers (LSP), as well as the level of engagement that each one of them provides.
- C. Deepen the concept of Third Party Logistic (3PL), establishing the advantages and disadvantages for Colombian companies of working with operators of this type.
- D. State which factors are considered important by Colombian companies when deciding to work with a Logistics Service Provider (LSP).

1.4 Justification in relation to the line and program

Nowadays, logistics plays a significant role in business management. The supply chain management (SCM) has become a key factor in a company's strategy, if it wants to become and remain productive and competitive in the market. Thus, this investigation is part of the *Strategy and Business programme* (Programa de Estrategia y Empresa) in the *Strategy research line* (Línea de investigación en Estrategia) of the Universidad del Rosario, as it will determine how companies can become more competitive by including an adequate supply chain management in its strategy, engaging some of its processes with LSPs. This arises in order to increase the level of productivity and competitiveness of the company in the market, having a better management of the logistics processes as they are managed by third-party logistics. In this way, the ultimate goal is to contribute to business perdurability.

The aim is to understand how the outsourcing of logistics services can improve or negatively impact the organizational performance of the contracting companies, in order to help Colombian MSMEs (Micro, Small and Medium Enterprises) that want to improve in terms of productivity and competitiveness. It is important to note that in industrialized countries, the percentage of SMEs that export is considerably higher than the percentage of exporting SMEs in developing countries. Rodriguez (2003) illustrates an example of southwest Asia; its SMEs account for the 60% of the sales abroad, while these enterprises are in disadvantage down in Latin America as state policies

work in favor of large companies, avoiding the potential growth that SMEs can provide (Rodríguez, 2003).

This paper will contribute to the Logistics research, not only for Colombia, but also in benefit of all Latin American enterprises or individuals who want to become competitive by outsourcing logistics processes in order to focus in their core competences. This will be done by defining certain concepts parting from the revision of literature related to the outsourcing of logistics services, including different types of engagements of logistics service providers. An investigation will be conducted, where not only literature will be the source, but also some companies in the logistics sector in Colombia, in order to inquire and illustrate the Logistics Service Providers (LSP), establishing the effect on the organizational performance of the contracting firm.

2. METHODOLOGICAL FRAMEWORK

This paper aims to analyze the impact of Logistics Service Providers (LSP) on organizational performance of the contracting companies. To achieve this, a formal investigative process of qualitative nature was conducted, during which a revision and analysis of literature was done, based on reliable sources such as papers, published articles in indexed journals that address the issue of the outsourcing of logistics services, as well as publications of relevant authors in the research areas of logistics and management. Another important source was the World Bank, which publishes reports holding important data, specially 'Connecting to Compete', where the Logistics Performance Index (LPI) is shown, which will serve to check Colombia's position against other countries, in different aspects that impact the competitiveness of the country.

As research tools, the integrated search system and databases available on the virtual platform of the Universidad del Rosario, were used. In addition, the library of the School of Management of the University, where books concerning the subject specified above were found. The internet

was useful to find web versions of different Logistics Journals and Newspapers, where present cases and topics could be found.

For this paper, the literature review is essential, but it is also important to have another primary source as a complement to the investigation. On the one hand, it is important to have Logistics Service Providers' points of view and opinions, and on the other hand it is key to include the point of view of companies that outsource their logistics services to a LSP. Both represent two sides of the same coin, having the experience and knowledge in the subject being studied. In this way, Colombian companies provided primary sources of information, as some were personally interviewed by the author of this paper, whereas others were consulted in secondary sources, such as Logistics Journals, Economics Journals and Colombian Newspapers. This investigation includes companies that outsource their logistics processes, as well as companies providing logistics services, both in Colombia.

After consolidating the appropriate bibliographical sources and key information of particular enterprises in Colombia, an analysis of the information was conducted and then it was organized following an order previously established. The document was written intending to answer the central research question, subject to review by the author's tutor, in this case the professor Giancarlo Salazar, whose comments and suggestions were received. Finally, a formal document was constructed, where the relevant and appropriate information is presented to support the overall project objective: to analyze the role of Third Party Logistics (3PL) operators as fosterers of organizational performance in Colombian companies, in order to inform MSMEs (micro, small and medium enterprises) about the benefits of working with Logistics Service Providers (LSP) as a means for the improvement of Colombia's competitive position.

3. THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1. Why companies consider outsourcing their logistics services?

The outsourcing of logistics services, processes or activities to a logistics service provider (LSP) has become a common practice among companies that want to be productive, efficient, effective and competitive by focusing on their Core Business. One of the most important reasons for companies to consider outsourcing their logistics services is the high level of expertise and capacity of the LSP, which enables it to support its client's needs in the best way possible. The company that contracts a relationship with a LSP saves the need of acquiring such expertise and capacity, a very difficult process that would mean high costs to have in-house (Jharkharia & Shankar, 2007).

As logistics outsourcing increases among companies all over the world, business-to-business relationships are created, "where not only the user is a critical stakeholder but also his customers who are directly affected by the quality of service of the provider" (Jharkharia & Shankar, 2007, p. 274) based on (Andersson & Norrman, 2002). This is why the company must carefully evaluate the criteria to choose a LSP, knowing exactly what does it need from the provider.

Other important reasons for considering outsourcing are reflected in many factors, along with costs reduction and improving the service provided. According to Rajesh, Ganesh, & Pugazhendhi (2013 p. 40), these factors are: Opportunities to focus on core competencies (Razzaque & Sheng, 1998), Improve productivity (Leahy, Murphy, & Poist, 1995), Upgrade information technology (IT) capabilities (Sink & Langley, 1997), Leverage supply chain management (Leahy, Murphy, & Poist, 1995), React to changes in the regulatory environment (Sink & Langley, 1997), A need for expertise (Razzaque & Sheng, 1998), Globalization of business (Razzaque & Sheng, 1998), Complexities of operating in a just-in-time (JIT) environment (Razzaque & Sheng, 1998), Rapid

growth (Van Damme & Ploos Van Amstel, 1996), and Limited resources to apply to logistics activities (Van Damme & Ploos Van Amstel, 1996).

Rajesh, Ganesh, & Pugazhendhi (2013) also discuss specific events within an organization that can ‘trigger’ the interest of outsourcing logistics services. Based on Sink & Langley (1997), they talk about: Changes in executive management, Corporate restructuring, Changes in logistics management, Corporate cost/headcount programmes, Increasing customer demands, Mergers and acquisitions, Market and product line expansions, New markets, Labor costs/problems, Customer use of just-in-time, Instituting a quality improvement programme, CEO directives to investigate the feasibility of outsourcing.

Additionally, surveys and studies have shown positive results of outsourcing logistics services: for example, “approximately 60% of the Fortune 500 companies in US reported having at least one 3PL [one type of LSP] contract, and that the market for logistics providers continues to grow” (Lieb & Bentz, 2005), quoted by (Aguzzoul, 2014, p. 69).

For a better understanding of how and why companies consider outsourcing their logistics services, it is necessary to review some theories that relate to the outsourcing of logistics processes, such as the resource-based view (RBV) theory, and the transaction-cost economics (TCE) theory.

3.1.1. The Resource-Based View theory (RBV)

The concept of ‘organizational resources’ is broad in scope; it refers not only to physical resources, such as human resources, equipment, plants or locations, but also to intangible assets, such as knowledge, expertise, and organizational assets (Zacharia, Sanders, & Nix, 2011).

Analyzing different literature (Penrose, 1959; Rumelt, 1984; Wernerfelt, 1984; Barney, 1991; Nelson, 1991; Petaraf, 1993; Eisenhardt and Martin, 2000), the authors Zacharia, Sanders, & Nix (2011) state that, according to the RBV theory, “the firm can be viewed as a bundle of resources

that are heterogeneously distributed across firms, with differences between them that persist over time” (Zacharia, Sanders, & Nix, 2011, p. 41). Taking this into account, the companies might gain sustainable competitive advantages making sure there is a proper access to these resources, which are “valuable, rare, inimitable, and non-substitutable” (Penrose, 1959); (Wernerfelt, 1984); (Barney, 1991); (Eisenhardt & Martin, 2000), quoted by (Wong & Karia, 2010, p. 52), called strategic resources by Barney (1991) and core competencies by Prahalad and Hamel (1990). Edith Penrose was one of the first authors to identify resources as determinant factors in competitive advantage of a firm, explaining that an organization can only gain a competitive position through its resources by exploiting them and making their potentially valuable services available to the firm (Wong & Karia, 2010).

In his article “firm resources and sustained competitive advantage”, Barney (1991) states two essential suppositions for RBV theory: 1) Resources (and capabilities) are heterogeneously distributed among firms and 2) Resources are imperfectly mobile. Conjointly, these two suppositions “allow for differences in firm resource endowments to both exist and persist over time, thereby becoming a resource-based competitive advantage” (Barney, 1991), quoted by (Wong & Karia, 2010, p. 52). The business environment in the logistics service industry is reflected by the previous assumptions made by Barney (1991), as resources are distributed diversely through multiple logistics service providers (LSP), forwarders and users (Wong & Karia, 2010). Wong & Karia (2010) sustain that resources of this type, specifically knowledge resources, are tacit and imperfectly mobile, and “cannot be transferred from one LSP to another without cost” (Wong & Karia, 2010, p. 52), which explains how a firm maintains its competitiveness as it exploits the “right” resources.

For most firms, competency is critical in logistics, meaning a source of sustainable competitive advantage and this requires having big resources and a major capital investment. The company is able to have access to a variety of resources outside the entity, by outsourcing one or every logistics functions the firm used to manage. “Firms rely on outsourcing to gain access to other firms’ valuable resources in the competitive marketplace” (Madhok, 1997; Ramanathan et al. 1997), quoted by (Zacharia, Sanders, & Nix, 2011, p. 42).

On the other hand, resources are not very useful by themselves. Rubin (1973) stated that firms must make resources useful by processing them from their raw state (Wong & Karia, 2010).

Mahoney & Pandian (1992) argued that “a firm may achieve rents (advantages) not because it has better resources, but rather the firm’s distinctive competence involves making better use of its resources” (Mahoney & Pandian, 1992), quoted by (Wong & Karia, 2010, p. 52). Tangible resources, such as machinery, people, infrastructure, among others, are useless without an effective utilization (Rubin (1973); Mahoney & Pandian (1992)) and are often imitable. On the contrary, intangible resources, such as knowledge, experience, information and relational resources (Lewis (1995); Hunt (2001); Mills, Platts, & Bourne (2003); Itami & Roehl (1987); Panayides M.P. (2007); Panayides & So (2005)) are used to take advantage of tangible resources, in order to achieve competitive advantage (Wong & Karia, 2010).

In summary, the Resource-Based View (RBV) theory sustains that firms outsource logistics services to increase access to a wider range of resources and, in consequence, gain competitive advantage in the marketplace.

3.1.2. The Transaction-Cost Economics theory (TCE)

Firstly, an understanding of the term ‘transaction cost’ is necessary to fully comprehend the transaction-cost economics theory. In his paper ‘Supply management: a transaction cost economics framework’, Garfamy (2012) defines ‘transaction costs’ as “the costs of creating, using, maintaining, changing and governing the organization of economic activity within a vertically integrated firm or in a market” (Garfamy, 2012, p. 141).

This theory is significant for this study, and is relevant for outsourcing logistics services as “the framework of TCE is frequently used to determine the proper governance structure of corporate transactions and what activities should be internalized versus purchased” (Williamson, 2008), quoted by (Yang, Wacker, & Sheu, 2012, p. 4463). Considering the firm as a linkage of contracts, the purpose is to stipulate “the best governance structure between the firm and its suppliers, customers, workers, etc.” (Garfamy, 2012, p. 142). Additionally, “TCE theory states that a firm’s ownership decision is based on minimizing the sum of its transaction and production costs” (Coase

(1937); Williamson (1985)), quoted by (Zacharia, Sanders, & Nix, 2011, p. 41). According to Cheng & Tang (2014), TCE emphasize collaboration as a means of minimizing transaction costs, assuming that efficiency is the reason for inter-organizational behavior (Williamson, 1985).

TCE's main objective is "to explain why transactions in certain institutional arrangements operate with different degrees of efficiency. TCE posits that the alignment of transaction attributes (asset specificity, uncertainty, frequency of transaction, ease of performance assessment) and institutional structure leads to higher transactions efficiency" (Yang, Wacker, & Sheu, 2012, p. 4463).

This theory states that outsourcing logistics services to LSPs will occur "when there is an opportunity to reduce transaction costs" (Zacharia, Sanders, & Nix, 2011, p. 41). These costs are generally reduced when the firm outsources logistics activities; these costs include "centralized order processing, efficient use of assets, and consolidation of overhead by a third-party" (Zacharia, Sanders, & Nix, 2011, p. 41).

Although the contract between the firm and the LSP will incur in transaction costs, handling one relationship demands less resources than managing various relationships without a LSP (Zacharia, Sanders, & Nix, 2011). The transaction costs are much lower because of the level of standardization of processes, level of capacity and expertise of the LSP, which improves coordination. Some authors (Ellram (1991); Ellram & Maltz (1995); Hobbs (1996)) expose evidence of the lower transaction cost as a consequence of a greater consolidation of services provided by the LSP.

In summary, the Transaction Cost Economics (TCE) theory sustains that firms outsource logistics services in order to minimize their transaction costs; "as long as there are cost advantages, it makes economic sense to outsource more activities to 3PLs which enable 3PLs to orchestrate more activities in the supply chain" (Zacharia, Sanders, & Nix, 2011, p. 41).

3.2. The logistics service providers (LSP)

As from the analysis of literature from the past recent decades, an evolution in logistics outsourcing has been identified. In the 1950s and 1960s, the outsourcing of logistics services was limited to warehousing and transportation only, with short-term transactions. In the 1970s, this evolved to an emphasis on cost reduction and improved productivity, along with long-term contracts. By the 1980s, value-added services are added to the equation, such as labeling, packaging, system support and inventory management. Starting from the 1990s, outsourcing has rapidly evolved assuming a supremely important role in the business world, including a wide offering of value-added services, such as import/export management, distribution, order fulfillment, reverse logistics, customs clearance, freight forwarding, customer service, rate negotiation, order processing, assembly/installation, consulting services (site selection for facility location, distribution network planning, fleet management, freight consolidation, logistics audit, among others.) (Rajesh, Ganesh, & Pugazhendhi, 2013).

Hence, there are companies which provide the services mentioned above for the user company demanding them. A Logistics Service Provider (LSP) is “an external supplier that performs either all or part of the company’s logistics function” (Kisperska-Morón & Krzyzaniak, 2009, p. 218), quoted by (Zowada, 2013, p. 112). Some authors differentiate layers of LSPs (1PL, 2PL, 3PL, 4PL) according to their level of engagement to the contracting company. In continuance, each layer of LSP, also known as party-logistics (PL), will be explained:

First is the 1PL (First-party Logistics), which is the most basic type of LSP. It is a single service provider, set in a specific geographic area which provides just one of the following logistics services which are inherent to the business: storage, transportation, packaging, or maquila (WILABR, 2009). If a logistics area of a manufacturing company has its own transport vehicles and warehouses, it would be a first-party logistics provider.

Next, there is the 2PL (Second-party Logistics) operator, which focuses on basic standardized logistics activities providing its services in a larger geographical area than the 1PL. It provides services related to transportation, warehousing, and transshipment with its own or external resources. This LSP has a narrow scope, and companies work with them, mostly to avoid expensive

capital investment and to minimize operational costs of a logistic system (Hanus, 2013). Generally, they work with frame contracts regulating the conditions of the service provided, which is mostly short-term. 2PL emerged when globalization and lean management were highly present, as companies decided to focus on their core competencies and outsource their logistics processes.

On the other hand, the 3PL (Third-Party Logistics) operator focuses on providing integrated logistics services to its customer; the customer outsources a function or process to the 3PL, generally with a long-term contract, preferably having a new partner sharing a long-term relationship. This operator customizes the services for each specific firm, integrating and bundling them together. In addition to transportation, warehousing and transshipment, the 3PL provides much more services, such as cross docking, inventory management, packaging, tagging services, import/export management, reverse logistics, order processing, customer service, and more. The services provided to the user go beyond mere logistics activities; the operator might act as a consulting company offering information services and optimizing or planning of logistics activities. The 3PL operators use advanced information technology that enables them to coordinate and manage effectively the logistics processes throughout the supply chain, having efficient total logistical costs (Hanus, 2013). One of the most significant difference between a 2PL and a 3PL is the fact that a 2PL is not integrated in the customer's system, being only an outsourced company, while 3PL has a system integration, enabling it to have a much greater visibility of the business.

Finally, the 4PL (Fourth-party Logistics) operator acts as an integrator of the supply chain (Hanus, 2013). The performance of all the operations is concentrated on a central entity (4PL), being:

[...] responsible for the planning, construction, and integration of operations while controlling and optimizing physical, financial, information and knowledge flows in the delivery, manufacturing and distribution processes and performing all the necessary activities, which are usually carried out by several 3PL providers. (Meidutė, Litvinenko, & Aranskas, 2012, p. 344).

Kurt Schosinsky, current general manager at DHL Global Forwarding Colombia, refers to 4PL as offering “greater logistics and services for the supply chain, gathering own resources,

capabilities and technology together with those of other organizations. This means to design, build and execute more integral supply chains” (Magri, 2015), quoted from Kurt Schosinsky.

In his work, Hanus (2013) states that there are some main factors that can help identifying 4PL firms. These are: Coordination of all the activities of 3PL operators present within the supply chain: it acts as a “virtual coordinator” of the supply chain, by planning and managing the diverse functions. 4PL operators are “non-asset based logistics providers” (Hanus, 2013, p. 7), they have no transport or storage assets of their own: they focus on virtual planning of operations and in their optimization, through advanced software and information technology. Their main objective is the optimization of the whole network: flow of goods, services, real-time information, and money (Hanus, 2013). The concept of 4PL came from the consulting firm Accenture in the 1970s, stating the need of firms to outsource an intermediary whose work is to select and optimize the integration of the best 3PL for the contracting company.

After differentiating between the different LSP, this paper focuses on examining the concept of third-party logistics (3PL/TPL) which is the most common and generally used by companies outsourcing their logistics services. Some aspects will be examined in detail, such as its concept, functions, outsourcing engagements, advantages and disadvantages of outsourcing logistics services with 3PL.

3.3. The Third-Party Logistics (3PL)

3.3.1. Concept

Businesses face a constant challenge of achieving improved efficiency performance in logistics operations (Bowersox, Closs, & Cooper, 2007). Nowadays, companies are able to concentrate on their core competencies by outsourcing their logistics functions to other entities, known as third-

party logistics (3PL) providers, proved to be a productive practice (Hong, Chin, & Liu, 2004; Lieb & Bentz, 2005).

Most authors agree that there is not a commonly accepted consistent definition of third-party logistics (3PL). According to Van Laarhoven, Berglund, & Peters (2000),

the terminology in this field is not always consistent; in some cases, 3PL is used as a label for traditional ‘arm’s length’ sourcing of transportation and/or warehousing, whereas in other instances the term is used to describe an outsourcing of a more complex character that can encompass the entire logistics process. (Marasco, 2008, p. 128).

Some authors suggest very broad definitions for 3PL as a concept. Stank & Maltz (1996) defined 3PL as “any firm providing a good or service that is not owned by the purchaser of the good or service” quoted by (Yeung A. C., 2006, p. 123); Coyle, Bardi, & Langley (2003) suggested that “3PL involves an external organization that performs all or part of a company’s logistics functions” quoted by (Marasco, 2008, p. 128). These definitions are valid in the context of the 1980s, when 3PL services were quite limited in scope (Maloni & Carter, 2006). Nonetheless, today a narrower definition is required as 3PL providers are offering much more logistics activities and integrated services to the companies demanding them. Its role changed over the decades; at first, 3PL meant providing transportation or warehousing services only, and now it means “offering a broad array of bundled services that also includes warehousing, inventory management, packaging, cross docking, and technology management” (Zacharia, Sanders, & Nix, 2011, p. 43), even assuming a strategic role (Vaidyanathan G. , 2005) knowing that logistic activities are each time more critical to the business.

Moreover, other authors distinguish the role of the 3PL providers from that of the other LSPs. For example, Prockl, Pflaum, & Kotzab (2010) outline general aspects that differentiate 3PL from habitual transportation and warehousing: “complex, individually designed bundles of services; long-term contracts, usually at least two or three years; and significant volume in terms of service costs” quoted by (Soinio, Tanskanen, & Finne, 2012, p. 33). Berglung, Van Laarhoven, Sharman, & Wandel (1999) defined 3PL very specifically as:

[...] activities carried out by a logistics service provider on behalf of a shipper and consisting of at least management and execution of transportation and warehousing. In addition, other activities can be included, for example inventory management, information related activities, such as tracking and tracing, value added activities, such as secondary assembly and installation of products, or even supply chain management. Also, the contract is required to contain some management, analytical or design activities, and the length of the cooperation between shipper and provider to be at least one year, to distinguish third-party logistics from traditional “arm’s length” sourcing of transportation and/or warehousing. (Berglung, Van Laarhoven, Sharman, & Wandel, 1999, p. 59), quoted by (Marasco, 2008, p. 128).

In his work, Yeung, A. C. (2006) supports the definition, given by (Africk & Calkins, 1994), which focuses on the length, the win-win character of the relationship, and the diverse offerings: a 3PL is “a relationship between a shipper and a third party which, compared with basic services, has more customized offerings, encompasses a broader number of service functions and is characterized by a longer-term, more mutually beneficial relationship” (Africk & Calkins, 1994), quoted by (Yeung A. C., 2006, p. 123). Instead, Bottani & Rizzi (2006) define 3PL as “a non-transactional partnership between a buyer and a seller of logistics services, where bundled logistics activities, which could encompass the whole supply chain management, are outsourced from the buyer to the seller” (Bottani & Rizzi, 2006, p. 295), saying it makes sense as it includes the double essence of 3PL, which is “the non-transactional nature of a partner relationship and the outsourcing of bundle logistic activities” (Sink & Langley, 1997).

So far, the different definitions cover important factors such as: providing a broad range of services, customizing the logistics service offerings, a long-term relationship between the user and the 3PL, a fair sharing of benefits and risks, cooperation between the two parts, and 3PL developing not only tactical work, but more important strategic work (Skjoett-Larsen, 2000).

In this paper it is important to have a definition that has the real essence of the 3PL concept, stating the B2B relationship where the 3PL manage to efficiently perform their work within a supply chain, accomplishing the different logistics needs of the company with whom they contract (Berglund, 2000). The definition also has to recognize the broad range of services offered, and the

degrees of scope, length and content of the relationships made. These aspects are met by the definition offered by Bask (2001), who portrays 3PL as “relationships between interfaces in the supply chains and third-party logistics providers, where logistics services are offered, from basic to customized ones, in a shorter or longer term relationship, with the aim of effectiveness and efficiency” (Bask, 2001, p. 474), quoted by (Marasco, 2008, p. 128).

3.3.2. Functions

Third-party logistics services may be extremely integrated logistics activities, or they can be sort of limited. In his work, Vaydianathan (2005) proposed a framework of 3PL functions, based on two surveys (Rabinovich, 1999; Sink & Langley, 1997), outlining the significant outsourcing functions. The following were identified:

Table 1.

3PL Outsourcing Functions

3PL FUNCTIONS	
Transportation	Freight payments and auditing
Warehousing	Cross docking
Freight consolidation and distribution	Product returns/ reverse logistics
Product marketing	Order management
Product labeling	Carrier selection
Product packaging	Rate negotiation
Inventory management	Logistics information system
Traffic management and fleet operations	

Source: Made by the author based on (Vaidyanathan G. , 2005)

Vaidyanathan (2005) divides all of these functions into four big categories, as show below:

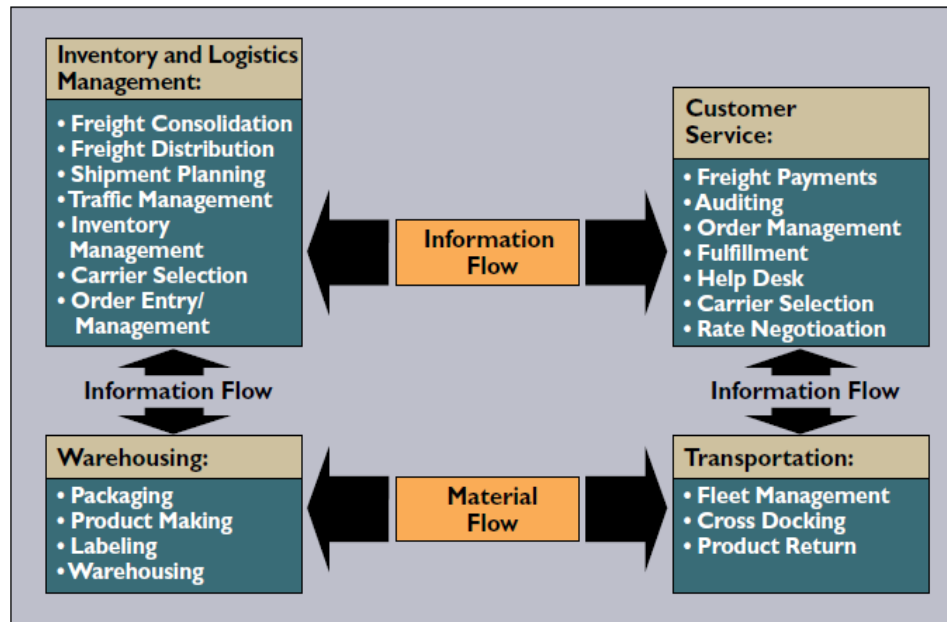


Figure 1. Categorization of Logistics Functions.

Source: (Vaidyanathan G. , 2005, p. 91)

Moreover, Aguezoul (2014) describes the different logistics processes and the activities related to them, based on Bottani & Rizzi (2006). These are shown in the following table:

Table 2.

Activities associated with contract logistics.

Logistics processes	Activities
Transportation	Road rail air sea, intermodality management, shipping forwarding, package express carrier, customs brokering, (de) consolidation, perishable/hazardous goods management, freight bill payment/audit.

Outbound (Distribution)	Merge in transit, order fulfillment/processing, picking, sorting, dispatching, post-production configuration, installation of products at the customer's site.
Warehousing	Storage, receiving, cross-docking, (de) consolidation, perishable/hazardous goods.
Inventory management	Forecasting, slotting/lay out design, location analysis, storage/retrieval management.
Packaging	Design, labeling, assembly/packaging, palletizing.
Reverse logistics	Pallets flows management, recycling, reuse, remanufacturing disposal management, repair, testing/products serving, return shipment management.

Source: (Aguzezoul, 2014, p. 70)

3.3.3. Outsourcing engagements

There are multiple types of outsourcing degrees or engagements that a company may establish with the 3PL. According to Zacharia, Sanders, & Nix (2011), some authors (Sanders, Locke, Autry, & Moore, 2007) identify two dimensions that split outsourcing engagements: “the scope of the outsourcing engagement and the criticality of tasks outsourced”.

The first one refers to “the breadth or degree of responsibility assigned to the 3PL” (Zacharia, Sanders, & Nix, 2011, p. 43). On the one hand, the outsourcing may imply assigning just one task to the 3PL, from multiple possible tasks that the company handles (ex. Outsourcing the packaging of goods). On the other hand, a full outsourcing means that a company can hand over from the management to the strategic direction of an entire process or operation to the 3PL (ex. Outsourcing of all aspects of the transportation function) (Zacharia, Sanders, & Nix, 2011).

Based on the first dimension (the scope of the outsourcing engagement), Zacharia, Sanders, & Nix (2011) managed to identify four types of outsourcing engagements, which are: 1) Out-tasking,

2) Co-managed services, 3) Managed services, and 4) Full outsourcing. Each one of them is explained below.

Out-tasking: represents the lowest level of outsourcing engagement from the company to the 3PL; it involves outsourcing only a specific task (ex. Packaging of goods). It provides standardization for repetitive activities among supply chain actors and has cost advantages.

Co-managed services: compared to out-tasking, the company assigns a larger scope of the activity to the 3PL; nevertheless, the firm has direct control. Both, the company and the 3PL work collaboratively, both responding for the managing of the logistics activities.

Managed services: a larger scope of responsibility is assigned to the 3PL, compared to the previous engagements; the firm gives its logistics service provider the duty of designing, implementing and managing a complete solution for a whole function (for example, the 3PL assumes the management of the company's transportation systems). "The 3PL is seen as providing the firm with the ability to tap into the unique talent and skills of the 3PL and be a neutral party that works with other entities of the supply chain on behalf of the firm" (Zacharia, Sanders, & Nix, 2011, p. 43).

Full Outsourcing: represents the highest level of outsourcing engagement from the firm to the 3PL; total responsibility is assigned to the 3PL, from designing, implementing and managing, to the strategic decisions of the outsourced process. The 3PL customizes the services for the specific business; it develops tools and human resources supporting the business process. "This type of outsourcing engagement can serve as a source of competitive advantage through process transformation and strategic differentiation and, as a result, can provide many strategic benefits to the firm" (Lindner, 2004), quoted by (Zacharia, Sanders, & Nix, 2011, p. 43).

The second dimension of outsourcing engagements (criticality of tasks outsourced), represents the importance of the outsourced logistic activity to the firm (Zacharia, Sanders, & Nix, 2011). When analyzing out-tasking, the outsourced tasks are generally of low criticality to the company, on the other hand, when firms have full outsourcing, they outsource a more critical responsibility with strategic functions. However, the task scope is not always correlated to the criticality of the activity; it is possible for the company to outsource a full logistic process with a low level of criticality for the firm, or to outsource one task with an extremely high level of criticality.

In their work, Zacharia, Sanders, & Nix (2011) combine both dimensions (task scope and criticality) explaining how “this forms the basis of an outsourcing framework that shows differences in the nature of the outsourcing relationship and the responsibilities of the 3PL” (Zacharia, Sanders, & Nix, 2011, p. 43). This way, they propose four categories of relationships: 1) Non-Strategic Transactions, 2) Contractual Relationships, 3) Partnerships, 4) Strategic Relationships. Additionally, these are shown in a figure that relates levels of scope and criticality:

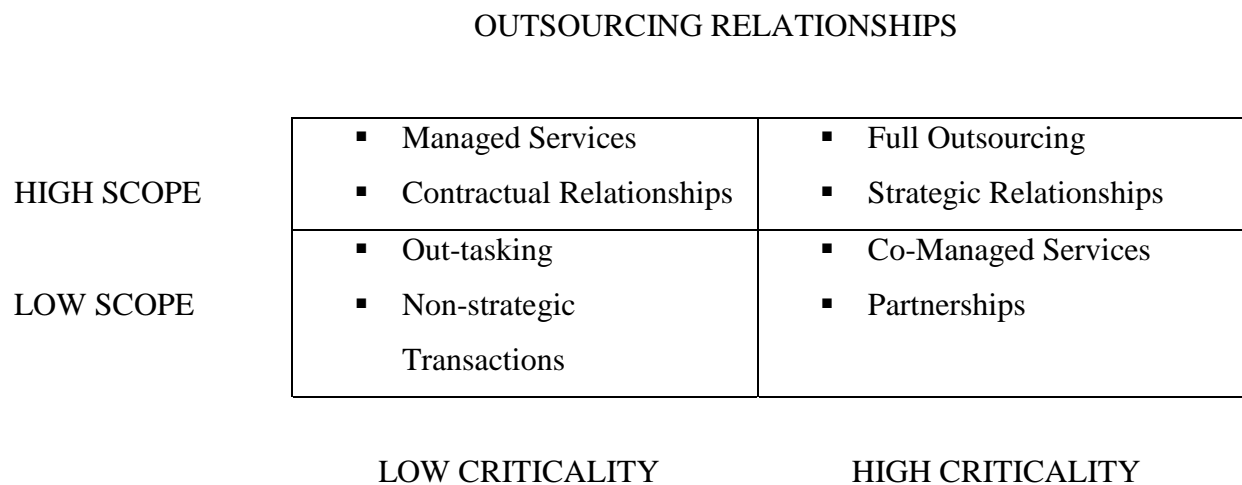


Figure 2. Outsourcing Relationships.

Source: (Zacharia, Sanders, & Nix, 2011, p. 45) *Note:* Adapted from (Sanders, Locke, Autry, & Moore, 2007)

3.3.4. Third Party Logistics (3PL) in Colombia

As stated earlier in this paper, Colombia ranked 97th out of 160 countries in the sample of the Logistics Performance Index (LPI) in 2014, developed by The World Bank (The World Bank, 2014). Colombia, as one of the six emerging economies ‘CIVETS’ (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa), is constantly seeking for alternatives that can help increase its productivity and competitiveness.

According to the Agencia Nacional de Infraestructura (ANDI), in 2015 the construction of seven new ports was approved, having the nation's trade increase as the main reason, resulting from FTA (Free Trade Agreements) and from the increased confidence of foreign investors over the past years. This new infrastructure will expand the logistics business for both companies offering logistics services operations, as for companies that import and/or export any type of merchandise. Four of the seven ports, will be located at the Caribbean (Cartagena) and the remaining three will remain in the Pacific (Tumaco and Buenaventura) (Magri, 2015).

In accordance with data from ANDI (Asociación Nacional de Empresarios de Colombia), the outsourcing industry has grown over 60% in the last five years. By the end of 2012, the BPO (Business Process Outsourcing), ITO (Information Technology Outsourcing), and KPO (Knowledge Process Outsourcing) sectors in Colombia reached an income of more than 5,244 million dollars (Magri, 2015). In Colombia, 263 companies providing logistics services were detected, which perceived around COP 629 billion for their operations, and projections showed that between 2013 and 2014 this would increase from 8% to 15% because of the growing demand for outsourced logistics services (Magri, 2015).

MSMEs (Micro, Small and Medium Enterprises) in Colombia represent around 90% of all businesses which account for 73% of employment and 53% of the gross production of several economic sectors, such as the industrial, commercial and service sector (Rodríguez, 2003). People in Colombia have to face and overcome a common characteristic of Latin American culture, which is resistance to change or fear to what is different or unknown. People has to understand that if they want their businesses to evolve and become competitive, they must face new realities and challenges.

A clear example can be observed with a Colombian entrepreneur called Luis, who started a business of purchase, sales and repair of appliances more than a decade ago, having only three employees and directly buying from large national suppliers. Nevertheless, due to the success he was having, a couple of years later he was forced to extend the company's presence by hiring more people, expanding its locations and becoming a direct importer. At first, this favored his incomes radically, but later on, as the business kept growing, he found out that he was spending too much money travelling to ports, in employees who worked in customs procedures, and in different carriers that moved the merchandise to Bogota, where he had his sales stores. "It was an exhausting

task. I had to be aware of the arrival of the appliances, search how to fix the issue of storage in warehouses, bearing in mind the nationalization processes. And actually, besides the stress levels I had, I began to realize that I needed to organize myself because I was not having the expected profitability” (Magri, 2015). Luis decided to work with a third party, giving away the logistics management. At first, he was very reluctant to the idea of a Third Party Logistics (3PL), as his was not a big company; they did not handle merchandise in very high volumes, and he thought he could handle everything from one place. “But if I really wanted to have an evolution, I could not continue as I was” (Magri, 2015), Luis now recognizes his good decision, after watching the positive outcomes of working with a good 3PL.

Another case is Tecnoquímicas S.A., a large Colombian manufacturer and marketer of products and services in the areas of health, personal care, household cleaning, industrial and commercial adhesives, and agricultural and veterinary products. With over 80 years of experience (founded in 1934), Tecnoquímicas has managed to work internationally having its own operations in Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panamá and the Dominican Republic, and exporting to more than 17 countries in North, Central and South America and the Caribbean (Tecnoquimicas S.A., 2014). Jorge Ariza, Tecnoquímicas’ Operations and Logistics Vice-president, was interviewed by the author of this paper. He talked about the logistics services the company outsources and the reasons why they do so (Ariza, 2016):

- **Storage services** (when the inventory exceeds the capacity of their own warehouses): The company has breakeven models which define when to build own storage capacity vs the cost of external storage. They make projections of when the breakeven point is reached, that is where the total cost of the storage portion is greater than the fixed cost of the own structure, and given that the implementation of a project lasts a whole year, the construction stage begins.
- **Redistribution platforms:** Tecnoquímicas has some of their own platforms where there is critical mass, and the others are outsourced.
- **Transportation services** (when its own fleet has not the capacity to meet the demand): The company has a transport fleet of its own that ensures freight compensation with returns to suppliers, and Clorox that makes profitable the own operation. To the extent

that there is more freight compensation, it is justified an increase of the company's fleet. Today, Tecnoquímicas has about 30% of the transport with own operation.

- **Courier services:** The company uses these services when deliveries with very short time are required for specific products.
- **Customs agency and Foreign trade activities:** Tecnoquímicas does not have the knowledge to manage it itself. For this, it would require high investments and demonstrated competence.

In addition, the author interviewed Santiago Restrepo, general manager of Duvero SAS, a small Colombian enterprise which imports and wholesales women's clothing nationwide. This company works with a Logistics Service Provider (3PL), which manages the business' importation process, including the transportation needs in the origin to deliver the goods to the airport, air and ground transportation, and its storage needs inside a free zone. Santiago sustains they work with a 3PL "because of the impossibility of doing it [manage logistics services] ourselves, and also we knew we had to work with a specialized company" (Restrepo Orozco, 2016).

On the other hand, there are the Third Party Logistics (3PL) operators in Colombia, which are gaining space in the market over the last years, because of the constant increment of foreign and national trade. Kurt Schosinsky is the current general manager of DHL Global Forwarding Colombia, a Logistics Service Provider (LSP), who has worked in different sectors of supply chain for over a decade. He sustains that "an integral service" is an imposing trend in the logistics industry (Magri, 2015).

"Today, customers demand customized solutions that support their growth and expansion plans. They ask their logistics partner an integral support in foreign trade, customs, national and international logistics, air and sea transport, storage and distribution, and management of their supply chain from and to various regions of the world, in order to have less complex operations, improve quality and reduce costs" (Magri, 2015), quoted from Kurt Schosinsky.

Magnum Logistics S.A. is a Colombian LSP with nineteen years of experience (founded on 1997), with offices on the main cities (Bogotá, Medellin, Cali and Pereira) and branches in the ports of Barranquilla, Cartagena and Buenaventura. José Cataño, its Co-founder and Regional

Manager, was also personally interviewed by the author of this paper. The company mostly acts as international freight forwarders, customs agents, and industrial users of service on free zone; he gave a simple explanation of what they do, “if a customer wants to import from point A to point B, we handle the whole operation until we deliver the merchandise where the customer requires it to be” (Cataño, 2015).

According to Cataño, Magnum Logistics can manage Third-Party Logistics (3PL) services. He sustains they have the technology and information system that enables them to integrate the different logistics services and act as a 3PL operator. He says “we manage and integrate services from freights to the delivery at the customer’s door. [...] We can manage customers’ whole inventory and from that point, make delivery to their own clients” (Cataño, 2015). This LSP acts as a consultant, advising their clients in terms of which is the best way to handle their type of merchandise, according to their needs, urgencies and the cost of the goods. “No every load can be handled by air, not every load can be handled by sea. That is our part; telling our client what is the best way to handle the merchandise” (Cataño, 2015).

3.3.4.1. Important factors that Colombian companies consider in order to work with Third Party logistics (3PL) operators

One of the objectives of this investigation is to state which factors are considered important by Colombian companies when deciding to work with an LSP.

DHL logistics expert and executive, Schosinsky, points out there are at least five important aspects when a company chooses a logistics operator: "Experience and leadership, having a national and international network to achieve full coverage in markets that the user wants to reach, having its own resources and financial strength that enables it to answer for the services for which it was hired, and a high knowledge of global and local markets" (Magri, 2015), quoted from Kurt Schosinsky. He also refers to specific logistics services that represent an added value that the user company has to take into account when deciding to work with a 3PL: “storage solutions,

distribution and customs agency, transport and delivery timing with efficient operations at competitive costs, a high understanding of the user's logistical needs, in order for the firm to receive the correct solutions, and possess a technology platform that integrates the customer" (Magri, 2015), quoted from Kurt Schosinsky.

In the interview, Magnum Logistics' regional manager was asked if the company's sector represents a factor that can determine the type of outsourcing used by itself. His answer was clear; the type of outsourcing is not influenced by the company's sector. "Any business [that imports/exports] in any sector has to make the entire process. From the freight, to the nationalization process and having the merchandise at the business' door" (Cataño, 2015). Again, he was asked if the business' size could be a determining factor for the outsourcing, and again he said no, explaining:

"We like to serve customers who are just going to start in business. Those companies that start small become large if they are properly accompanied and well advised, and if they do well in business, for surely they will grow. And if they grow, it is also a benefit for us, because they will have more imports, I will have greater businesses and the benefit is mutual" (Cataño, 2015).

However, Cataño points out two factors he considers important when referring to the type of outsourcing a company uses: the level of confidence a serious and well-established company generates in the LSP, and the geographical location of the business (Cataño, 2015). On the other hand, Tecnoquimicas' Operations and Logistics VP referred to costs, service levels and also geographical location of the business (Ariza, 2016). For Duvero's general manager, important factors to evaluate when searching for a 3PL to work with are the contracting company's geographical location and the level of logistics expertise from the logistics operator, including foreign trade and customs (Restrepo Orozco, 2016).

For the first factor (level of confidence the user generates in the LSP), José Cataño sustains he prefers to avoid offering the complete package of services to companies that do not generate trust to Magnum Logistics, instead they offer only one part of the business. He believes every other LSP takes this factor into account when offering their services.

When referring to the geographical location of the user company, it is important to note that when companies are located within a free zone, they do not need the whole integral process, meaning they have no need for a 3PL operator. Magnum Logistics' manager sustains that services such as storage and nationalization are no longer needed by these companies as the product may be for manufacturing inside the free zone. "Depending where it is located, the client needs everything integrated by a 3PL or it does not need it" (Cataño, 2015). For Tecnoquímicas, both cases apply, as its manufacturing factories are both located in free zones and out of them; they have to engage a more integral package with a 3PL for the imports of raw materials and packaging materials that are destined for production in factories outside a free zone. Instead, there is no need of a nationalization process for the same materials that are needed to manufacture within a free zone.

However, Alejandro Adelsohn, commercial director in DHL Global Forwarding Colombia, states Third Party Logistics (3PL) is not a logistics trend suitable for all types of business. "Opting for this solution depends on the business model and the industry in which the company stands. For example, companies in electronics, pharmaceutical or high volume consumption products, are perfect, for managing a supply chain is not the business' focus" (Dinero, 2008), quoted from Alejandro Adelsohn. According to Adelsohn, the decision of working with a determined 3PL, should come from a consensus among all the areas of the company, in order for the alliance to respond to both global and individual expectations. For Miguel Becerra, CTN Global Infor product manager, the main problem with companies that want to work with 3PL or 4PL has a cultural nature. He refers to resistance to change, as the people is used to work in a certain way with specific tools, "and even if the information system necessary to integrate the logistics operator and the user company is simple, it might be different from the company's tools, requiring a cultural change" (Dinero, 2008), quoted from Miguel Becerra.

3.3.5. Advantages of working with a 3PL

Bearing in mind the multiple factors that affect business competitiveness in today's globalized world (uncertainty, turbulence, fierce competition, complexity, diversity), it becomes imperative for companies to be more productive, effective and efficient, in order to satisfy the increasing customers' needs and expectations; for firms, a way to achieve this is by focusing on their Core Business. This is the main advantage of contracting a relationship with a 3PL, as the company hands over the managing of its logistics processes to a partner, which are activities that do not generate any value for the firm, enabling it to concentrate in the activities that do generate value to the business. "Firms that used to adopt the 'do it all' approach are beginning to realize that having a 3PL provider take charge of the company's overall supply chain presents a more effective and efficient way of running the logistics of the business" (Lim, 2000), quoted by (Yeung A. C., 2006, p. 124).

In 3PL outsourcing, the companies generally establish a real partnership. Primarily, this is necessary as the services provided by the 3PL are of strategic nature. Secondly, firms outsource logistics processes knowing that they can achieve competitive advantage by "exploiting synergies and leveraging the logistics provider distinct competencies" (Frazier, Spekman, & O'Neal, 1988), quoted by (Bottani & Rizzi, 2006, p. 295). The LSP, in this case the 3PL, turns out to be a major actor in the supply chain process, integrating firms corporate strategy and share values for mutual benefits (Bottani & Rizzi, 2006), based on (Bowersox, 1990; Ellram, 1990). "[...] By joining forces the partners improve the efficiency of operations, work out together to take costs out of the logistics system, mutually boost profitability and improve service to end customer. Such partnership, when successful, gives both parties a competitive edge in the marketplace" (Tate, 1996), quoted by (Bottani & Rizzi, 2006, p. 295). Gentry (1996) exemplified that a tighter relationship between the different players in the supply chain, causes operational improvements, which can cause an increased efficiency in the supply chain, improving its competitive advantage in the marketplace (Marasco, 2008).

Marasco (2008) points out really interesting facts about outsourcing logistics services to a 3PL; she analyses literature and concludes that participating in 3PL relationships, most likely in cooperative relationships, can cause:

[...] multiple economic, organizational and financial benefits for shippers such as reduced logistics cost, improved service levels and end-customer satisfaction, improved access to an application of technology, reduced capital investment in facilities, equipment and manpower, increased flexibility and productivity, improved employee morale, increased access to wider markets and new competencies (e.g. Bowersox, 1990; Daugherty et al., 1996; Ellram and Cooper, 1990). (Marasco, 2008)

Moreover, companies decide to outsource their logistics operations in order to have benefits in relation to “reduced inventories, increased productivity, improved service levels, enhanced customer satisfaction, and reduced transportation and other logistics costs” (Lim, 2000; Bhatnagar, Sohal, & Millen, 1999; Sohail & Sohal, 2003), quoted by (Yeung A. C., 2006, p. 124). Other positive effects may include a more effective utilization of staff, faster and more reliable services, better delivery and handling of load, higher availability of transportation, an improvement of IT systems, a higher level in expertise, flexibility and access to markets, along with minimized capital requirements (Dapiran, Lieb, Millen, & Sohal, 1996; Sohail & Sohal, 2003), quoted by (Yeung A. C., 2006, p. 125).

Taking a closer look to 3PL, Yeung, Selen, Chee-Chuong, & Huo (2006) and Meidutė I. (2007) sustain that companies prefer contracting with 3PLs rather than considering other LSP. The reason for this lays in the fact that “logistics service consumers demand more than just the delivery of basic and low-cost services” (Meidutė, Litvinenko, & Aranskas, 2012, p. 345), they demand specialized, customized and value adding logistics services, which 3PL are willing to provide. One example of an effective 3PL is UPS, a US company that started by offering just delivery services, and now they offer their clients the possibility of completely manage their distribution operations and design the networks. They give their customers great importance; they say that for their clients they will “act as eyes and ears around the world” (<http://www.ups.com>), quoted by (Zacharia, Sanders, & Nix, 2011, p. 40).

Jorge Ariza, Tecnoquímicas' Operations and Logistics VP, sustains that the advantages of working with 3PL are having competitive costs and having access to services that are not mounted in the company because it does not have the critical mass or the knowledge of the specific service (Ariza, 2016). José Cataño, Magnum Logistics' Co-Founder and Regional Manager, talks about benefits related to fixed costs, as 3PLs absorb those costs. "If the company does not use a high percentage of the production capacity, the fixed costs exceed the profit so it is not proper for the company to assume these" (Cataño, 2015). He believes the costs are the backbone of any business; "if there are not favorable costs, the business does not work" (Cataño, 2015). Additionally, he sustains each one should focus on their know-how, saying the company that manufactures, should worry about manufacturing, and it should give the logistics operation management to the 3PL (Cataño, 2015). He also refers to time efficiency, as the processes are done better and faster with a 3PL than if it was done separately or by the own client. Finally, Cataño mentions the facility of having just one company (3PL operator) in charge of the entire logistics operation; the client will not have to worry about different entities and linking information between them. The responsibility lays on one: the 3PL.

Duvero SAS works with Magnum Logistics S.A. as its 3PL, where it manages the complete import process of merchandise all the way from Italy to the customer's door in Cali, Colombia. Santiago Restrepo, its general manager, highlights the high level of specialization in logistics processes and customs as an advantage of working with this LSP (Restrepo Orozco, 2016).

A survey made by (Lieb, Miller, & Van Wassenhove, 1993) to US and European manufacturer companies about their use of 3PL, showed that certain firms reach up to a 30%-40% reduction in costs related to logistic functions and have been able to make more efficient all of their logistic processes thanks to outsourcing (Yeung A. C., 2006). Again, in 2000, Lieb & Miller (2002) surveyed Fortune 500 manufacturers and found that 70% of the companies surveyed indicated that contracting with a 3PL "has had a positive or very positive impact on their logistics costs and service levels" (Lieb & Miller, 2002), quoted by (Yeung A. C., 2006, p. 124), and two-thirds answered that the 3PL relationships "has had a positive or very positive impact on customer satisfaction" (Lieb & Miller, 2002), quoted by (Yeung A. C., 2006, p. 124).

To point out, third-party logistics-client true and strong relationships are able to improve the performance of the entire supply chain, fostering innovation and learning, according to Panayides & So (2005) (Marasco, 2008).

3.3.6. Possible disadvantages of working with a 3PL

Now, it is important to look at the other side of the coin when considering outsourcing logistic services to a Third-party Logistics (3PL). In the real world, not every LSP manages to be competitive, taking into account that there is an increasing number of 3PL in the industry and it becomes really difficult to compete in a globalized, uncertain, and turbulent environment. Wong & Karia (2010) state:

A recent survey conducted by Langley, et al. (2007) indicates that many users are, overall, dissatisfied with services provided by their LSPs. The survey reported that many LSPs failed to deliver the expected cost reduction, trustworthy relationship, and increasing needs for wider portfolio of logistics services and geographical coverage and advanced information technology. (Wong & Karia, 2010, p. 51), based on (Langley, et al., 2007)

Unfortunately, logistics services contracts between firms and LSP usually change hands every two years, and lots of them are limited only to transportation and warehousing services (Wong & Karia, 2010), based on (Langley, et al., 2007).

Besides, opportunism is a factor that can occur in relationships between companies and a 3PL; partners are “not all part of the same organization” (Hult, Ketchen, & Slater, 2004, p. 241), quoted by (Lai, Tian, & Huo, 2012, p. 2501), as one of them may behave opportunistically, harming the interests of the other part. “According to transaction cost theory, opportunistic behavior occurs when the benefits of such behavior exceed its cost” (Lai, Tian, & Huo, 2012, p. 2501). This may occur before or after ‘the firms transact’, “known as ex ante and ex post opportunism” (Jap &

Anderson, 2003, p. 1686), quoted by (Lai, Tian, & Huo, 2012). In accordance with Anderson (1988), opportunism in trading relationships is increased by uncertainty, which is a present and escalating factor nowadays (Lai, Tian, & Huo, 2012).

Magnum Logistics' co-founder, mentions customer service as a weakness from the LSPs. He says there may not always be a full communication and/or response from a LSP to its client. Every entity should have a clear and solid structure of a customer service department, in order to generate confidence and visibility of the logistics services being outsourced (Cataño, 2015).

Another possible disadvantage is the alleged loss of control of the tasks or processes being outsourced. It is true that when a service is outsourced, the company shifts its attention to other processes or services that will generate greater value for the organization and, therefore, the firm will cease to fully manage the process previously handled. Tecnoquimicas' VP agrees, stating the disadvantage of the loss of "operation control in some critical aspects of the business. Sensitivity of the organization in relation to management is lost and no internal competence is developed, remaining only in the hands of the supplier" (Ariza, 2016).

However, the company may be aware of the process through an information system (SCM) that links the firm with the other actors in the supply chain, or the company may request information about the logistic process to the 3PL when required. If this is not the case, then the company does not have a well-integrated SCM system with its partners in the supply chain, or the firm fails to choose a correct partner to be its 3PL. Some companies are very resistant to change, and fear handing over the control of some of their processes to another entity; processes which seem to be managed just fine. This is when companies have to consider the increasing competition in the industry and how customers' expectations are each time higher, being imperative to concentrate on their Core Business (Vaidyanathan G. , 2005).

4. CONCLUSIONS AND RECOMENDATIONS

Nowadays, there are multiple factors that affect business competitiveness such as uncertainty, turbulence, fierce competition, complexity, diversity, among others, in a world where globalization and internationalization are present. Taking this into account, and in order to satisfy the increasing customers' needs and expectations, it becomes imperative for companies to evolve, being more productive, efficient and effective, for businesses to remain in a strong competitive position in the market. Today, "logistics service consumers demand more than just the delivery of basic and low-cost services" (Meidutė, Litvinenko, & Aranskas, 2012, p. 345). Companies are increasingly demanding specialized, customized and value-adding logistic services.

The investigation's general objective was reached, as this paper manages to analyze the role of Third Party Logistics (3PL) operators as fosterers of organizational performance in Colombian companies, in order to inform MSMEs (micro, small and medium enterprises) about the benefits of working with Logistics Service Providers (LSP) as a means for the improvement of the country's competitive position. Taking into account that Colombia ranked 97th out of 160 countries in the World Bank's Logistics Performance Index (LPI) (The World Bank, 2014), and that is one of the six emerging economies 'CIVETS' (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa), it is of interest to find alternatives for increasing the nation's productivity and competitiveness.

As this paper demonstrates, outsourcing has become a practice that optimizes the efficiency of the supply chain, positively impacting organizational performance, as companies have the opportunity to focus more on their primary activities. After conducting a thorough investigation by consulting primary and secondary sources, such as books, papers, databases, articles published in indexed journals concerning logistics and management, reports from the World Bank, and having done interviews to influential characters in the discussed matter, it can be concluded that for Colombian MSMEs, a way to remain competitive and productive is by outsourcing its logistics activities to an external entity: Third-Party Logistics (3PL) operators. This enables the company to focus on its Core Business (activities that generate value to the business), as it hands over the

managing of its logistics processes to a partner, which are activities that do not generate any value for the firm.

These Logistics Service Providers (LSP) are able to offer services the companies are demanding in a more effective and efficient way than if the own company decided to manage them itself. Moreover, the companies will perceive benefits in relation to “reduced inventories, increased productivity, improved service levels, enhanced customer satisfaction, and reduced transportation and other logistics costs” (Lim, 2000; Bhatnagar, Sohal, & Millen, 1999; Sohail & Sohal, 2003), quoted by (Yeung A. C., 2006, p. 124).

It is important to note that there are at least five important factors that a company must consider when choosing to work with a 3PL: "Experience and leadership, having a national and international network to achieve full coverage in markets that the user wants to reach, having its own resources and financial strength that enables it to answer for the services for which it was hired, and a high knowledge of global and local markets" (Magri, 2015), quoted from Kurt Schosinsky. In this investigation most of the Colombian companies' executives agreed that the geographical location of the user company is an important factor to take into account. Additionally, the logistics operator's level of expertise must be examined carefully before establishing the relationship.

Moreover, the co-founder and regional manager of a Logistics Service Provider in Colombia: Magnum Logistics, the Operations and Logistics Vice-president of a Colombian manufacturing and marketing company: Tecnoquímicas S.A., and the general manager of a small enterprise: Duvero S.A.S., all agreed on the benefit in costs for the company, and the clear opportunity to focus on the know-how of the business when outsourcing the logistics operation to a 3PL. Being a general manager of a small enterprise in Colombia that works with a 3PL operator, Santiago Restrepo believes that it is favorable for MSMEs to work with logistics operators, “because if they do so [manage logistics services] themselves, they would incur in very high costs, by hiring trained personnel, and implementing the necessary logistics capacity” (Restrepo Orozco, 2016). In Colombia, there are Logistics Service Providers (LSP) with the integral structure, high knowledge of best practices in the market, and traceability systems, so that users can have reports and can have control of their inventory online. Some examples of these operators are UPS Supply Chain Solutions, Blu Logistics, Damco, DHL Global Forwarding, Magnum Logistics, Panalpina, among others.

As in all respects, the disadvantages should be considered, and these refer to the possible loss of control of the operation being outsourced, having a partnership with a 3PL with poor performance, or even having an opportunistic logistics provider. The companies talked about the high costs they face when they start working with these logistics operators, underlining that good performance may be expensive at first. However, these aspects can be prevented or diminished with the careful evaluation of the Logistics Service Provider being contracted, and by including an appropriate and integrated Supply Chain Management (SCM) information system in order to have visibility on the outsourced activities. Colombian companies that want to grow, be competitive and even expand across borders, must overcome resistance to change and fear of the unknown; only after giving it a try, they will realize how beneficial it is for their business to work with 3PL operators.

Finally, after learning about why companies consider outsourcing their logistics services, the different types of Logistics Service Providers (LSP), the Third-Party Logistics (3PL) operators in Colombia, their outsourcing engagements, advantages and disadvantages, it can be concluded that a well-established 3PL, together with an integrated SCM information system between the provider and the firm, has positive implications on the organizational performance of the contracting company, mainly as it enables the firm to focus on its Core Business. This investigation should help Colombian MSMEs (Micro, Small and Medium Enterprises) that want to improve in terms of productivity and competitiveness, hopefully encouraging exportation and thus, improving the current competitive position of the country.

5. BIBLIOGRAPHIC REFERENCES

- Africk, J., & Calkins, C. (1994). Does asset ownership mean better service? *Transportation and Distribution*, 35, 49-61.
- Aguezzoul, A. (2014). Third-party logistics selection problem: A literature review on criteria and methods. *Omega The International Journal of Management Science*, 49, 69-78.
- Aguilar Santamaría, P. A. (n.d.). Grandes Retos en Logística para la Competitividad. *Revista de Logística*. Retrieved from http://www.revistadelogistica.com/grandes_retos_en_logistica_para_la_competitividad.asp
- Anderson, E. (1988). Transaction costs as determinants of opportunism in integrated and independent sales forces. *Journal of Economic Behavior and Organizations*, 9(3), 247-264.
- Andersson, D., & Norrman, A. (2002). Procurement of logistics services- a minutes work or a multi-year project? *European Journal of Purchasing and Supply Management*, 8, 3-14.
- Ariza, J. E. (2016, May). Entrevista a Vicepresidente Senior Operaciones y Logística TECNOQUIMICAS S.A. (J. Restrepo Orozco, Interviewer) Cali, Colombia.
- Ballou, R. H. (2004). *Logística. Administración de la cadena de suministro* (Quinta ed.). México: Pearson Educación.
- Barney, J. B. (1991). Firm resource and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Bask, A. H. (2001). Relationships among TPL providers and members of supply chains - A strategic perspective. *Journal of Business & Industrial Marketing*, 16(6), 470-486.

- Berglund, M. (2000). Strategic positioning of the emerging third-party logistics providers. *Department of Management and Economics, Linköping Studies in Management and Economics*, Dissertation no. 45.
- Berglund, M., Van Laarhoven, P., Sharman, G., & Wandel, S. (1999). Third-party logistics: Is there a future? *The International Journal of Logistics Management*, 10(1), 59-70.
- Bettis, R. A., & Hott, M. A. (1995). The new competitive landscape. *Strategic Management Journal*, 16, 7-19.
- Bhatnagar, R., Sohal, A., & Millen, R. (1999). Third party logistics services: A Singapore perspective. *Journal of Physical Distribution and Logistics Management*, 29, 569-587.
- Bottani, E., & Rizzi, A. (2006). A fuzzy TOPSIS methodology to support outsourcing of logistics services. *Supply Chain Management: An International Journal*, 11(4), 294-308.
- Bowersox, D. J. (1990). The strategic benefits of logistics alliances. *Harvard Business Review*, July-August, 36-45.
- Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2007). *Supply Chain Logistics Management*. New York: McGraw-Hill/Irwin.
- Carlson, B. (1989). Flexibility and theory of the organization. *International Journal of Industrial Organization*, 7(1), 189-203.
- Cataño, J. (2015, July). Entrevista a Gerente Regional MAGNUM LOGISTICS S.A. (J. Restrepo Orozco, Interviewer) Cali, Colombia.
- Chase, R. B., Jacobs, F. R., & Aquilano, N. J. (2009). *Administración de Operaciones. Producción y Cadena de Suministros* (duodécima ed.). México D.F.: McGraw Hill.
- Cheng, J. H. (2011). Inter-organizational relationships and information sharing in supply chains. *International Journal of Information Management*, 31(4), 374-384.
- Cheng, J.-H., & Tang, C.-H. (2014). Interorganizational cooperation and supply chain performance in the context of third party logistics services. *Asia Pacific Management Review*, 19(4), 375-390.

- Chopra, S., & Meindl, P. (2008). *Administración de la Cadena de Suministro. Estrategia, planeación y operación* (Tercera ed.). México: Pearson Education.
- Coyle, J. J., Bardi, E. J., & Langley, C. J. (2003). *The Management of Business Logistics - A Supply Chain Perspective*. Mason: South-Western Publishing.
- Dapiran, P., Lieb, R., Millen, R., & Sohal, A. (1996). Third party logistics services usage by large Australian firms. *International Journal of Physical Distribution and Transport Logistics*, 26, 36-45.
- Day, G. S. (1994). The capabilities of market-driven organisations. *Journal of Marketing*, 58(4), 37-52.
- de Boer, L., Gaytan, J., & Arroyo, P. (2006). A Satisficing Model of Outsourcing. *Supply Chain Management: An International Journal*, 11, 444-455. Retrieved from <http://dx.doi.org/10.1108/13598540610682462>
- del Castillo, C., & Vargas, B. (2009). El proceso de gestión y el desempeño organizacional. Una aproximación a la nueva gestión pública desde el ámbito de los gobiernos locales. *Cuadernos de difusión*, 14(26), 57-80.
- Dinero. (2008, October 10). *Los nuevos socios estratégicos*. Retrieved June 15, 2016, from Dinero.com: <http://www.dinero.com/edicion-impresia/tecnologia/articulo/los-nuevos-socios-estrategicos/69256>
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, 21((10/11)), 1105-1121.
- Ellram, L. M. (1990). The supplier selection decision in strategic partnership. *Journal of Purchasing and Materials Management*, 26(3), 8-15.
- Farahani, R. Z., Rezapour, S., & Kardar, L. (2011). *Logistics Operations and Management*. London: Elsevier.
- Frazier, G. L., Spekman, R. E., & O'Neal, C. R. (1988). Just-in-time exchange relationships in industrial markets. *Journal of Marketing*, 52(4), 52-67.

- Garfamy, R. M. (2012). Supply Management: A Transaction Cost Economics Framework. *SEE Journal*, 139-147.
- Gentry, J. J. (1996). The role of carriers in buyer-supplier strategic partnerships. A supply chain management approach. *Journal of Business Logistics*, 17(2), 35-55.
- Geyskens, I., Steenkamp, J. B., & Kumar, N. (2006). Make, buy, or ally: A transaction cost theory meta-analysis. *Academy of Management Journal*, 49(3), 519-543.
- Gligor, D. M., & Autry, C. W. (2012). The role of personal relationships in facilitating supply chain communications: A qualitative study. *Journal of Supply Chain Management*, 48(1), 24-43.
- Halldórsson, Á., & Skjoett-Larsen, T. (2004). Developing logistics competencies through third party logistics relationships. *International Journal of Operations & Production Management*, 24(2), 192-206.
- Hanus, P. (2013). The business profile shaping and the logistics information systems of 2PL, 3PL, 4PL operators. *Journal of Economics & Management*, 12, 5-21.
- Hong, J. J., Chin, A. T., & Liu, B. L. (2004). Logistics outsourcing by manufacturers in China: a survey of the industry. *Transportation Journal*, 43(1), 17-25.
- Hult, G. T., Ketchen, D. J., & Slater, S. F. (2004). Information processing, knowledge development, and strategic supply chain performance. *Academy of Management Journal*, 47(2), 241-253.
- Hunt, S. D. (2001). Commentary: general theory of competition: issues, answers and an invitation. *European Journal of Marketing*, 35((5/6)), 524-548.
- Itami, H., & Roehl, T. W. (1987). *Mobilizing Invisible Assets*. Cambridge: Harvard University Press.
- Jap, S. D., & Anderson, E. (2003). Safeguarding interorganizational performance and continuity under ex post opportunism. *Management Science*, 49(12), 1684-1701.

- Jayaram, J., & Tan, K.-C. (2010). Supply chain integration with third-party logistics providers. *International Journal of Production Economics*, 125, 262-271.
- Jharkharia, S., & Shankar, R. (2007). Selection of logistics provider: An analytic network process (ANP) approach. *The International Journal of Management Science*, 35, 274-289.
- Kisperska-Morón, D., & Krzyzaniak, S. (2009). *Logistyka*. Poznan: ILiM.
- Knemeyer, M., & Murphy, P. (2004). Evaluating the performance of third-party logistics arrangements: A relationship marketing perspective. *Journal of Supply Chain Management*, 40, 35-51.
- Lai, F., Tian, Y., & Huo, B. (2012). Relational governance and opportunism in logistics outsourcing relationships: empirical evidence from China. *International Journal of Production Research*, 50(9), 2501-2514.
- Langley, C. J., Van Dort, E., Morton, J., Hoemmken, S., Goh, A., Zabawa, M., . . . Riegler, M. (2007). *The State of Logistics Outsourcing: 2007 Third Party Logistics - Results and Findings of the 12th Annual Study*. Atlanta.
- Leahy, S. E., Murphy, P. R., & Poist, R. F. (1995). Determinants of successful logistical relationships: a third-party provider perspective. *Transportation Journal*, 35(2), 5-13.
- Lee, Y. J., Baker, T., & Jayaraman, V. (2012). Redesigning an integrated forward-reverse logistics system for a third party service provider: an empirical study. *International Journal of Production Research*, 50(19), 5615-5634.
- Lewis, M. A. (1995). *Competence analysis and the strategy process*. PhD Thesis. Cambridge: University of Cambridge.
- Liang, C. J., & Wang, W. H. (2006). The behavioural sequence of the financial services industry in Taiwan: Service quality, relationship quality and behavioural loyalty. *Service Industries Journal*, 26(2), 119-145.

- Lieb, R. C. (1992). The use of third-party logistics services by large American manufacturers. *Journal of Business Logistics*, 13(2), 29-42.
- Lieb, R., & Bentz, B. A. (2005). The North American third party logistics industry in 2004: the provider CEO perspective. *International Journal of Physical Distribution & Logistics Management*, 35, 595-611.
- Lieb, R., & Miller, J. (2002). The use of third-party logistics services by large US manufacturers, the 2000 survey. *International Journal of logistics: Research and Applications*, 5, 1-12.
- Lieb, R., & Randall, H. (1996). A comparison of the use of third-party logistics services by large American manufacturers, 1991, 1994, and 1995. *Journal of Business Logistics*, 7, 305-320.
- Lieb, R., Miller, R., & Van Wassenhove, L. (1993). Third-Party Logistics: A comparison of experienced American and European manufacturers. *International Journal of Physical Distribution and Transport Logistics*, 23, 35-44.
- Lim, W. (2000). A lemons market? An incentive scheme to induce truth-telling in third party logistics providers. *European Journal of Operational Research*, 125, 519-525.
- Lindner, J. C. (2004). Transformational Outsourcing. *Sloan Management Review*, 45(2), 52-8.
- Liu, C.-L., & Lyos, A. C. (2011). An analysis of third-party logistics performance and service provision. *Transportation Research Part E*, 47, 547-570.
- Logan, M. S. (2000). Using agency theory to design successful outsourcing relationships. *International Journal of Logistics Management*, 11(2), 21-32.
- Magri, A. (2015, December 28). *En tus manos encomiendo mi logística*. Retrieved June 15, 2016, from Revista de logística: <http://revistadelogistica.com/actualidad/en-tus-manos-encomiendo-mi-logistica/>
- Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13, 363-380.

- Maloni, M. J., & Carter, C. R. (2006). Opportunities for Research in third-party logistics. *Transportation Journal*, 45, 23-39.
- Maltz, A. (1994). Outsourcing the warehousing function: Economic and strategic considerations. *Logistics and Transportation Review*, 30(3), 245-265.
- Marasco, A. (2008). Third-party logistics: A literature review. *International Journal of Production Economics*, 113, 127-147.
- Meidutė, I. (2007). Economical evaluation of logistics center establishment. *Transport*, 22, 111-117.
- Meidutė, I., Litvinenko, M., & Aranskas, A. (2012). Logistics cooperation: Integrated logistics services. *Business: Theory and Practice*, 13(4), 343-351.
- Miller, D., & Shamsie, J. (1996). The resource-based view of the firm in two environments: the Hollywood film studios from 1936 to 1965. *Academy of Management Journal*, 39, 519-543.
- Mills, J., Platts, K., & Bourne, M. (2003). Applying resource-based theory: methods, outcomes and utility for managers. *International Journal of Operations & Production Management*, 23(2), 148-166.
- Moss, R. (2010). Leadership in a globalizing world. In N. Nohria, & R. Khurana (Eds.), *Handbook of Leadership Theory and Practice* (pp. 569-609). Boston, MA: Harvard Business Press.
- Murphy, P. R., & Poist, R. F. (1998). Third-party logistics usage: An assessment of propositions based on previous research. *Transportation Journal*, 37(4), 26-35.
- Neubauer, R. M. (2011). Business models in the area of logistics. In G. Verlag, *In search of hidden champions, their business principles and common industry misperceptions*.
- Niebel, B. W., & Freivalds, A. (2009). *Ingeniería Industrial: Métodos, estándares y diseño del trabajo* (duodécima ed.). México D.F.: McGraw Hill.

- Núñez-Carballosa, A., & Guitart-Tarrés, L. (2011). Third-party logistics providers in Spain. *Industrial Management & Data Systems*, 111(8), 1156-1172.
<http://dx.doi.org/10.1108/02635571111170749>.
- Olavarrieta, S., & Ellinger, A. E. (1997). Resource-based theory and strategic logistics research. *International Journal of Physical Distribution and Logistics Management*, 27((9/10)), 559-587.
- Panayides, M. P. (2007). Effects of organizational learning in third-party logistics. *Journal of Business Logistics*, 28(2), 133-159.
- Panayides, P. M., & So, M. (2005). Logistics service provider-client relationships. *Transportation Research Part E*, 41, 179-200.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: Wiley.
- Persson, G., & Virum, H. (2001). Growth strategies for logistics service providers: a case study. *International Journal of Logistics Management*, 12(1), 53-64.
- Portafolio. (2011, May 11). *El 3PL, una tendencia útil para cualquier empresa*. Retrieved 06 20, 2016, from Portafolio.com: <http://www.portafolio.co/negocios/empresas/3pl-tendencia-util-empresa-129348>
- Porter, M. (1985). *Competitive Advantage*. New York: Free Press.
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68, 79-91.
- Prockl, G., Pflaum, A., & Kotzab, H. (2010). What is the right value creation model for 3PL services? - 3PL as factory or Lernstatt. *22nd NOFOMA Conference on "Logistics and Supply Chain Management in a Globalized Economy"*. Kölding, June 10-11.
- Rabinovich, E. (1999). Outsourcing of integrated logistics functions. *International Journal of Physical Distribution and Logistics Management*, 26(6), 353-373.
- Rahman, S. (2011). An exploratory study of outsourcing 3PL services: an Australian perspective. *Benchmarking: International Journal*, 18(3), 342-358.

- Rajesh, R., Ganesh, K., & Pugazhendhi, S. (2013). Drivers for logistics outsourcing and factor analysis for selection of 3PL provider. *International Journal of Business Excellence*, 6(1), 37-58.
- Razzaque, M. A., & Sheng, C. (1998). Outsourcing of logistics functions: a literature survey. *International Journal of Physical Distribution & Logistics Management*, 28(2), 89-107.
- Restrepo Orozco, S. (2016, 06 25). Entrevista a Gerente General de DUVERO SAS. (J. Restrepo Orozco, Interviewer) Cali, Colombia.
- Rivera Rodriguez, H. A. (2012, Enero-Junio). Cuadernos de Administración. *Perdurabilidad Empresarial: Concepto, estudios, hallazgos, Volumen 28. No.47*. (U. d. Valle, Ed.) Cali, Valle, Colombia.
- Rodríguez, A. G. (2003). *La realidad de la pyme colombiana: desafío para el desarrollo*. Colombia: Programa Mejoramiento de las Condiciones de Entorno Empresarial, FUNDES.
- Rubin, P. H. (1973). The expansion of firms. *Journal of Political Economy*, 84, 936-949.
- Sanders, N. R., Locke, A., Autry, C., & Moore, C. (2007). A Multi-Dimensional Framework for Understanding Outsourcing Arrangements. *Journal of Supply Chain Management*, 43(4), 3-15.
- Sarache, W. A., Hoyos Montoya, C., & Burbano J., J. C. (2004, Mayo). Procedimiento para la evaluación de proveedores mediante técnicas multicriterio. Manizales, Colombia.
- Schneider, B. (2004). *Outsourcing: la herramienta de gestión que revolucionó el mundo de los negocios*. Bogotá, Colombia: Norma.
- Shang, K.-C. (2009). Integration and organisational learning capabilities in third-party logistics providers. *The Service Industries Journal*, 29(3), 331-343.
- Sink, H. L., & Langley, C. J. (1997). A managerial framework for the acquisition of third-party logistics service. *Journal of Business Logistics*, 19(1), 121-136.

- Skjoett-Larsen, T. (2000). Third party logistics - From an inter-organizational point of view. *International Journal of Physical Distribution & Logistics Management*, 30(2), 112-127.
- Sohail, M., & Sohal, A. (2003). The use of third party logistics services: a malaysian perspective. *Technovation*, 23, 401-408.
- Soinio, J., Tanskanen, K., & Finne, M. (2012). How logistics-service providers can develop value-added services for SMEs: a dyadic perspective. *The International Journal of Logistics Management*, 23(1), 31-49.
- Stank, T. P., & Daugherty, P. J. (1997). The impact of operating environment on the formation of cooperative logistics relationships. *Transport Research Part E: Logistics and Transportation Review*, 33(1), 53-65.
- Stank, T., & Maltz, A. (1996). Some propositions on third-party choice: Domestic vs international logistics providers. *Journal of Marketing Theory and Practice*, 4, 45-54.
- Tate, K. (1996). The elements of a successful logistic partnership. *International Journal of Physical Distribution & Logistics Management*, 26(3), 7-13.
- Tecnoquimicas S.A. (2014). *tqconfiable.com*. Retrieved Mayo 22, 2016, from <http://www.tqconfiable.com/>
- The World Bank. (2014). *Connecting to Compete 2014. The Logistics Performance Index and its Indicators*. Washington DC.
- Vaidyanathan, G. (2005). A Framework for Evaluating Third-Party Logistics. *Communications of the ACM*, 28(1), 89-94.
- Van Damme, D. A., & Ploos Van Amstel, M. J. (1996). Outsourcing logistics management activities. *International Journal of Logistics Management*, 7(2), 85-95.
- Van Laarhoven, P., Berglund, M., & Peters, M. (2000). Third-party logistics in Europe - Five years later. *International Journal of Physical Distribution & Logistics Management*, 30(5), 425-442.

- Wallenburg, C. M. (2009). Innovation in logistics outsourcing relationships: Proactive improvement by logistics service providers as a driver of customer loyalty. *Journal of Supply Chain Management*, 45(2), 75-93.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 171-180.
- WILABR. (2009, Agosto 25). Un matrimonio que no tiene divorcio. *Portafolio*. Retrieved Mayo 9, 2016, from <http://www.portafolio.co/economia/finanzas/matrimonio-divorcio-186732>
- Williamson, O. E. (1985). *The economic institutions of capitalism: Firms, markets, relational contracting*. London: The Free Press.
- Wong, C. Y., & Karia, N. (2010). Explaining the competitive advantage of logistics service providers: A resource-based view approach. *International Journal of Production Economics*, 128, 51-67.
- World Economic Forum. (2013). *The Global Competitiveness Report 2013-2014*. Retrieved Marzo 23, 2014, from World Economic Forum: <http://www.weforum.org/issues/global-competitiveness>
- Yang, C., Wacker, J. G., & Sheu, C. (2012). What makes outsourcing effective? A transaction-cost economics analysis. *International Journal of Production Research*, 50(16), 4462-4476.
- Yeung, A. C. (2006). The Impact of Third-Party Logistics Performance on the Logistics and Export Performance of Users: An Empirical Study. *Maritime Economics & Logistics*, 8, 121-139.
- Yeung, J. H., Selen, W., Chee-Chuong, S., & Huo, B. (2006). Linking financial performance to strategic orientation and operational priorities: An empirical study of third-party logistics providers. *International Journal of Physical Distribution & Logistics Management*, 36(3), 210-230.
- Zacharia, Z. G., Sanders, N. R., & Nix, N. W. (2011). The emerging role of the third-party logistics provider (3PL) as an orchestrator. *Journal of Business Logistics*, 32(1), 40-54.

Zowada, K. (2013). Business cooperation of logistics companies with small and medium enterprises - Research report. *Journal of Economics & Management*, 12, 111-120.