



RESEARCH ARTICLE

CHARACTERIZATION OF THE SUPPLY CHAIN LOCAL SMEs (TULUÁ-BUGA) TO FACE THE CHALLENGE OF GLOBALIZATION

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ABSTRACT

This article highlights the increment in the level of importance in the supply chain that companies implement in the activities and processes that they constantly carry out inside themselves and through the adoption and good management of these methods to obtain better results and opportunities for growth and economic and business development of organizations to successfully meet the challenges of globalization. The main objective of the research project "characterization of the supply chain in local SMEs (Tuluá-Buga) to face the challenge of globalization" is to propose a diagnosis that shows the current situation of local SMEs (Tuluá-Buga) against the use of the supply chain as a fundamental factor in the search to improve business competitiveness in order to face the challenge of globalization, for which a descriptive-analytical methodology was employed. As the results of the research were obtained, the holdup the SMEs under study in terms of supply chain and the importance it has within the organization, was evidenced; being this a factor that contributes to competition in national and international spheres, concluding that improvement proposals that bring companies to levels of productivity and competitiveness are required and absolutely necessary in a globalized world.

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INTRODUCTION

As a result of the changes that have been constantly taking place on the world stage, due to the phenomenon of globalization, all organizations have been forced to be at the forefront and aim to improve their ability to compete with products and services that come from different regions of the world, causing many processes to begin to take force in the companies due to the benefits that they bring to the same; some of these processes are: the supply chain and logistics, as fundamental elements of the same entity. Today, the high levels of competition in international markets have led companies to conclude that in order to survive and succeed in these, it is no longer enough to improve their operations or integrate their internal functions, but rather the recent way of doing business entails an approach that goes beyond the boundaries of the company, which consists in teamwork, union and coordination from suppliers to final customers, that is to integrate all these agents with the purpose of developing

productive and commercial activities of the organization more efficiently. Therefore, several managers, entrepreneurs or chief executives of companies, businesses or organizations have discovered that they can achieve profitable economic and business growth, both now and in the long term, by treating supply chain management as one strategic variable and the key to acquiring a greater level of competitiveness and to face the rise of globalization, for which first all the links or agents that intervene within the chain must be integrated and in the background strategies must be created in order to maximize the benefits they generate to an organization. The above highlights the importance of this research topic, due to the fact that it is born from the need the SMEs of Tuluá and Buga have, as well as the need surrounding municipalities have to develop productive strategies that lead them to compete in international scenarios with differentiated products, that have a high percentage of added value, coupled with the good use of supply chains. It should be noted that for this research project the proposed by Porter (2009) is taken as the maxim, who refers that in the new world order competition will be flanked by supply chains which makes companies optimize all their processes related to this theme. A diagnosis of the local SMEs (Tuluá-Buga) was completed in order to show the reality of

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these, trying to establish how their knowledge and application on the subject of supply chain is; this will help to achieve business strengthening that will bring local SMEs (Tuluá-Buga) and surrounding municipalities to improve their activities both internal as well as external, specifically the ones related to supply chains, which will allow them to face a Globalized world in which they are immersed reasonably and thus grow to be more competitive in the national and international context.

MATERIALS AND METHODS

The research methodology that was used for this project can be considered mainly as a descriptive one, but it requires some analytical interventions to deepen the knowledge about selected SMEs in matters related to productivity and supply chain, as basis for formulating improvement proposals within their performance. Its development took place in 3 phases, which were:

Phase I: Diagnosis and characterization of the supply chain

In this phase different activities were carried out in the course of a descriptive methodology, among which are: (1) The analysis of the theories that supported the research; (2) The analysis of conceptual evolution; (3) Data processing; (4) analysis of the information and (5) elaboration of the document of the theoretical bases with which the project counts with. It should be noted that the development of this phase lasted 4 months. The theorists, who were taken as central references and their works, were respectively: Michel E. Porter in "Competitive strategy. Techniques for the analysis of the company and its competitors"; Ronald H. Ballou in "Logistics: Supply Chain Management"; Lee J. Krajewski; Manoj K. Malhotra; Larry P. Ritzman in "Operations Management: Processes and Supply Chain" and Jorge Chavez; Rodolfo Torres in "Supply chain management: concepts, models and good practices". This background permitted investigators to increase the knowledge about supply chains, as well as to secure the level of importance that it has within an organization.

Phase II: Application and Evidence

For the fulfillment of this phase, several activities were carried out, among which are disregarded: (1) the identification of SMEs under study; (2) definition of the sample; (3) design and testing of information collection instruments; (4) the application of data collection instruments; (5) processing and analysis of the information and (6) preparation of the final report of the respective phase. This phase was carried out in a 4 months period. It is also necessary to say that in order to achieve the intended objective for this phase the Chambers of Commerce, both, of Tuluá and Buga, and from other municipalities that are part of the respective jurisdictions were the main allies since, by means of the information they hold on the SMEs that develop activities related to international trade, whether imports or exports, the application of surveys and interviews could be carried out; For the study no statistical formula was used for the definition of the sample, given that it is difficult to achieve these objectives; not all companies were willing to participate in the study. Based on the above, having the list of companies provided by the respective Chambers of Commerce, 92 companies were obtained in Tuluá and 27 companies in Buga, a total of 119 companies adding the lists of

the jurisdictions of both chambers of commerce; those belonging to the range of large companies were excluded, leaving only 104 companies with the characteristics of SMEs.

Subsequently, contact via telephone and e-mails were made. Direct information was obtained from 54 companies, that is to say, it was possible to make contact with them, although not all of them provided a positive response to our request, because a lot of them said they did not have time or that they could not give us information because of confidentiality, or some others simply claimed to have no interest in the subject under study; Even though most companies did not participate it was possible to successfully complete both the survey and interview process for 13 companies which their conditions applied for our purpose of study. On the other hand, it must be said that the other 50 companies that met the characteristics for the study, did not have reliable information, or updated data and therefore could not be contacted, or in some cases had no activities directly related with International Trade. In order to accomplish this phase of the research project, the following materials were required:

Materials

ITEM	QUANTITY
Minutes to make appointments with businessmen.	200 minutes to make calls to landlines and cell phones.
Paper for printing surveys and interviews.	1 ream of letter size paper
Transport	Round-trip for the visit to the 13 companies

Phase III: Work tables for the Academy - Companies cooperation and socialization of results gotten from the research project

For the development of the research project last phase, the following activities were carried out: (1) definition with the Chamber of Commerce of Tuluá, of the meeting dates with the representatives of SMEs belonging to its jurisdiction; (2) definition with the Chamber of Commerce of Buga, the meeting dates with representatives of SMEs belonging to its jurisdiction; (3) announcement to the representatives of the SMEs about the meetings in the determined venues; (4) setting up of meetings or workshops with employers; (5) preparation of the report on the achievements of the working groups; (6) Design of workshops and seminars; (7) announcement of workshops in accordance with the Chambers of Commerce of Tuluá and Buga and (8) scheduling, convening and socialization of results meetings. All of the activities listed above were developed within a 4 months period. It is important to clarify that for the project results socialization phase as such, the objectives initially expected were not achieved, due to the limited participation and acceptance of the entrepreneurs who were supporters at the beginning of the survey process and interviews that were carried out in the previous phase and that allowed to obtain key and truthful information for the development and conclusion of this research project.

RESULTS

The results obtained during the research project were based on what was set out in the specific objectives of the project, which are 3 and adjust to each of the phases that were developed based on these same; the research generated the following results:

Documentation of the bases and the theoretical and conceptual elements on productivity, competitiveness and supply chain:

This result meets the objective II, *"To establish the importance of Supply Chain for the development of businesses in the area under study and their efficiency in the different economic scenarios"*; it was at this point where the prior research on Supply Chains was developed, between which there are different concepts, theories, benefits or disadvantages that can generate is to the companies. Furthermore, in this first result obtained from the investigation, the consultation of diverse sources of information was vital, books and articles of magazines, documents related to the subject among others allowed to consolidate the objective of the investigation that is, to demonstrate the importance that the supply chain has in companies, especially in a world of constant changes for which it is crucial to be at the forefront, for what it is necessary in the first place, to develop characteristics which allow businesses to be more competitive not only with regard to national but international parameters.

Consequently, the result obtained in first place was the document of the bases and theoretical and conceptual elements on productivity, competitiveness and supply chain; it was necessary to look into several bibliographical sources, where it is possible to emphasize the theorist Michael Porter, who with his theories and thoughts allowed the development of a large extent of this document. Based on the above, as a result we obtained a document that consists of 69 pages, which highlights facts such as history, concept and characteristics of the supply chain, as well as its relationship with logistics, such as stock and resource projection, their application in general, among other interesting aspects that make the document useful when demonstrating the importance of the supply chain. Likewise, one of the objectives of this document is to support future research, as well as to be used as basis for enriching the material on the subject of research available in the library of the Central Unit of Valle del Cauca-UCEVA and that can be taken advantage of by the International Trade students or from other careers that have relation with the subject of investigation; This document will also be very useful for entrepreneurs who want to improve their skills through suitable use of a well-organized supply chain within the organization; In addition, to be clear about the convenience of this business component, and how they can take advantage of the multiple improvement opportunities that entails accessing a supply chain.

Diagnostic document on factors and characteristics that affect productivity, competitiveness and supply chain in local SMEs (Tuluá-Buga)

This second result obtained meets the objective I: *"To design and implement a diagnostic study of the reality of various aspects related to the supply chain that affect the productivity of local SMEs (Tuluá-Buga)"*. To be able to carry out this objective, it started based on the results obtained through the development of the process of survey application and interviews, and the subsequent tabulation and analysis of the results the process yielded when applied in the companies of Tuluá, Buga and the neighboring municipalities that also participated to perform this diagnosis. It is worth to mention that the Chambers of Commerce from Tuluá and Buga were the agents for the effective linkage with the SMEs that were

the object of study and with which the analysis process was done in order to promote an improvement in key factors of organizations such as productivity and competitiveness. In the process of designing the surveys, 12 descriptive questions were carried out, structured with multiple-choice and open-ended responses, all related to the level of knowledge that companies have regarding supply chains and other related issues; The survey was also applied to the 13 companies that participated in the information gathering process. As for the interview, it is semi-structured and only managed to coordinate 6 of the 13 companies that were the subject of study, these companies were guided in an interview through 8 questions; where can be highlighted, how the operation of the supply chain in their business is, which they believe would be the most important link in the chain be; There were other questions that had the objective to knowing how the internal operation related to the supply chain is and from there, be able to structure the diagnosis that is fundamental part of the reason of being of this investigation. Based on the above, the diagnostic document was obtained on factors and characteristics that affect productivity, competitiveness and supply chain in the SMEs that were the object of study, yielding results on the weaknesses and strengths in terms of knowledge and application of the supply chain within each of the companies, how it can boost the competencies of organizations, as long as it is well structured and organized; In addition, it was possible to establish that companies recognize the level of importance that this issue has within the organization because of the multiple benefits of cost reduction, time, and greater customer satisfaction.

Support document of socialization of obtained results and work tables for Academy - Company cooperation

In order to fulfill the objective III *"To analyze the use of approach mechanisms between academia and the productive sector, to bring about significant improvements in its evolution"* all these in terms of the use of supply chains to face the challenge of globalization and international trade, it was agreed with the Tuluá and Buga Chambers of Commerce, socialization meetings, work tables, workshops and seminars including the participation of the people in charge of the research, the accompanying teachers and the entrepreneurs who participated of the research process through the collaboration in the surveys and interviews that were carried out in this project and other population interested in the same. Based on the above and based on the results obtained through the surveys and interviews that were carried out to the Tuluá and Buga SMEs and in neighboring municipalities in the second phase of the research project, it was taken as a key point for the development of the last phase of the project, a presentation in order to socialize the general and most important aspects of the project approach and also to show what the results obtained in the course of the research in each of their respective phases were.

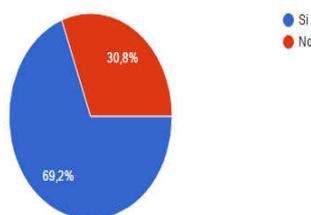
Hence, in the first place, the entrepreneurs who involved in the surveys and interviews in the municipality of Tuluá and the municipalities surrounding it were contacted in order to invite them be present at the time of the socialization of the last phase of the research project and thus could observe the documents and reports obtained, how their participation in obtaining the final results had been taken into account and finally to be able to participate in the work tables, workshops and seminars that were the result of this first encounter between the actors.

Finally, the socialization of results it was realized only in the Chamber of Commerce of Tuluá, and this was done in order to create a favorable environment between the academy and productive sector so that both parties nourished from the results acquired from the realization of this research project where the productive sector is the biggest beneficiary in recognizing the strengths of an excellent implementation of a supply chain within the organization. Unfortunately, the entrepreneurs invited did not attend the socialization, but it was attended by officials from the Tuluá Chamber of Commerce, which highlighted the research project and encouraged further development of research projects of this kind, through which all the region will benefit besides, strengthening the academy in knowledge.

It is noteworthy that the development of research activities demonstrated the behavior of the variables treated throughout the project with the entrepreneurs who provided not only their time but valuable information for the development of this one among which the following can be highlighted:

Do you have knowledge about the basic concepts and applications of the supply chain?

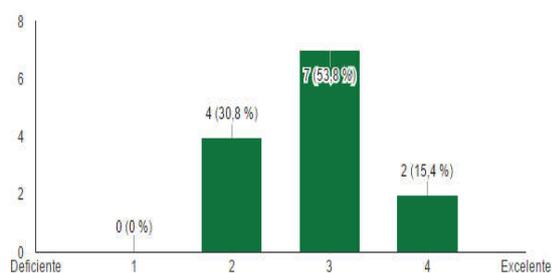
¿Tiene conocimiento acerca de los conceptos y aplicaciones básicas de la Cadena de Suministros?
(13 respuestas)



Source: Authors

How do you qualify the supply chain within your company?

Califique la cadena de suministro de su empresa: (13 respuestas)



Source: Authors

DISCUSSION OF THE RESULTS

Based on the findings of this research project, we were able to develop a diagnosis of local SMEs (Tuluá-Buga) in relation to the level of use of the Supply Chain as a factor of business strengthening to face the challenge of globalization based on the results that are given after the theoretical review and application of information collection instruments such as the survey and the interview, where the companies that were the

object of study recognize the importance of the supply chain within the organization, besides recognizing the advantages and disadvantages they have in terms of their application. It is also noteworthy that in order to arrive at these results, a somewhat tedious process took place because of the drawbacks related to collecting the information, and this was due to the fact that many of the contacted companies claimed not having availability in time and not allowing access to the information of the organization.

From the information obtained in the process, some basic variables are highlighted, the absolute and relative figures permit to make the following assessments: 69.2% (9) of the companies surveyed say they have knowledge about everything related to supply chains, even so only 53.8% (7) of the respondents rate the supply chain as "good" within their organization. These results may be somewhat contradictory because at the time of conducting both the survey and the interview the entrepreneurs alleged to have a full knowledge of the subject and the importance of the Supply Chain in a company although they did not optimistically qualify the process that occurs internally; it is there where a diagnosis is made in order to demonstrate that nowadays competitiveness not only at the national but to the international level is vital for companies to be able to last in the long term and there is where the supply chain plays an essential role within the organizations where it is well structured.

In addition, throughout the development of this research project, knowledge reinforcement was generated from all the bibliographic review that was carried out, in which it can be emphasized that the supply chain involves a set of intermingled processes, and seeks the efficient coordination of the agents and the links that are involved in the management of the flow of products, services and information from suppliers up to final customers, thus achieving the growth of revenues gained from a product or service, proficient management of the available assets and minimization of the cost to the possible extent, all these, from the integration of all the areas that make up and intervene in the processes the supply chain involves.

The above is related to what has been stated by Díaz, García and Porcell (2008) where they say:

Optimizing the supply chain is a decisive tool in today's markets, it allows organizations to enter into globalization processes by exchanging ideas and cutting-edge technologies for the development of their processes, generating competitiveness for the exchange of products with the standards demanded by the market, not only locally but also internationally with high efficiency standards that will make possible to be profitable in such a competitive society. Furthermore, it will also generate a continuous search for best manufacturing practices and marketing with the minimum costs. (P.19).Based on the above, the importance of the supply chain within an organization continues to be evident due to the endless benefits it entails, among which are cost reductions through a well structured and organized chain which entails as result in first place a good profitability and secondly greater competitiveness at national and international level, something that has been discussed throughout this article. On the other hand, "The success of an organization that reduces costs and satisfies the needs of its clients depends on the management of the chain, its integration and flexibility, its control in real time and the efficient flow of information" (Velásquez and

Rodríguez, 2003, p.69). Thus, it is demonstrated that there must be a strong integration of all the links and agents of the chain in order to make it successful and there is where SMEs have weaknesses in relation to the issue in question; At the time of this investigation, many of the companies that were the object of study highlighted that they have problems more specifically in the distribution logistics mostly due to the problems there exist in Colombia, in terms of infrastructure. It means that transportation costs become high and not only this, but they also have problems with the distribution deadlines which seriously affects the satisfaction of the final consumer; In addition many times the information flow that these companies comprise is affected by the lack of adoption of technology more specifically of the ICT, which is a plus to improve the synergy and efficiency of the processes that are carried out within the chain.

The above is also supported by Correa & Gómez (2008), who refer to the fact that ICT are a strategic ally for the success of an organization because it allows a better flow of information within it, besides highlighting its benefit when it comes to interconnecting the links that make up a supply chain and subsequently being a basis for decision-making inside the organization. Consequently, the analysis of the value chain of the company will allow a more efficient management of those elements considered a source of competitive advantage and gather resources to eliminate the weaknesses detected. On the other hand, the analysis of the customer's value chain will allow the company's supply to be adjusted to its needs and expectations, thus increasing the value of the product or service to the customer (Quintero & Sánchez, 2006, p.389). From the above it can be concluded that supply chains are necessary and effective when competing with other companies and markets, as well as being a key factor in order to be able to face the challenges and changes brought about by globalization; likewise, one of the main objectives of the chain is to provide a better customer service, generating them satisfaction, this one being one of the elements that influence them, as well as costs reduction and improvements in the flow of information within the chain so that based on this an optimal interconnection of the key links that integrate it would exist. Therefore, it is to exalt the results obtained from this research, since based on them a strengthening of the productive sector can take place, besides working as promoter for the development of other research works specially focused on the disadvantages that companies have more to be able to structure an optimum and efficient chain and based on it, to propose solutions that would route them to compete with companies both locally and internationally.

Conclusions

Today, it is necessary to create competitive advantages in order to endow organizations with the ability to survive in time through strategies that maximize the processes that occur inside and outside the organization, a key factor in this case is the Supply Chain that through innovation, efficient communication, adequate logistics, access to technology, among other factors, allows organizations to keep up with and compete not only in local but also in international markets. As the research was developed, some conclusions were obtained that show a degree of knowledge, management and application that have local SMEs (Tuluá and Buga) in terms of Supply Chains; A key factor for these companies and even more if they want to be competitive, as Porter (2009) posed, in the

future competition will take place between supply chains and not between companies. In addition, with the results obtained through this research it is necessary to promote spaces that generate synergy between the academic world and the productive sector so that both could be nourished by the knowledge that each one of the parties have; seeking primarily to recognize the importance and benefits of the supply chain when improving the performance of the organization.

Also, with this research project some of the great benefits that supply chain as a key factor in meeting the expectations the customer have, were highlighted, this from interconnected processes that make the chain efficient and therefore a reduction in costs in each of the processes that make up the chain would reduce and that will be reflected satisfactorily in the final consumer. Finally, it can be concluded that the supply chain turns out to be a business strategy for those who implement it in an appropriate manner, that is having full integration and communication of all its links, which is highlighted in the success of a organization through profitability, productivity improvements, consumer satisfaction, the ability to compete both nationally and globally so that it would definitively be possible to face the challenges of globalization.

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Especially to each of the members of the International Trade Research Seed (SICI) attached to the Faculty of Management, Economics and Financial Sciences of the Central University of Valle del Cauca-UCEVA, where teachers and students that allowed carrying out this research project stand out. Moreover it is necessary to exalt the participation and collaboration of external entities such as the Chambers of Commerce of the municipalities of Tuluá and Buga which allowed us to reach companies that were studied in this research, due to this, it is also important to exalt the participation of each and every one it was possible of the companies making it possible to bring about the expected results that were critical to the accomplishment of this project.

- *Fadoplast S.A.S.*
- *Activa Integra.*
- *Constructora Océano Proyectos S.A.S.*
- *Antioqueña de Porcinos (Porcicarnes).*
- *Fruity Fénix S.A.S*
- *Indumentarias SYC S.A.S*
- *Nel Ingeniería*
- *C.I Inducorset S.A.S*
- *La Casa del Sonido*
- *Químicos Proquimpi*
- *Bloem Desings*
- *Imagen Creativa*
- *Gonarez y Cía. S en SC*

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