

Logistics as a Determining Competitiveness Factor in Special Coffee Producers

Logística como Factor Determinante de la Competitividad en Empresas Productoras de Café Especial

GORDON Hernández, Yimy [1](#); VIDAL Tovar, Carlos [2](#) & URDANETA Urdaneta, Geovanni [3](#)

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ABSTRACT:

The general purpose of this research was to analyze logistics as a determining competitiveness factor in companies producing Special Coffee in the Municipality of Valledupar, Colombia, based on the theoretical postulates of Mora (2008 & 2011), Ballou (2004), Castellanos (2010), Conpes 3527, DANE (2013), Gordon (2013), ICER (2012), Villamizar and Villamizar (2011), among others. An explanatory study was developed, with a non-experimental and transversal field design. The population was studied with eighty-seven (87) reporting units. Two questionnaires of multiple alternatives were applied based on the Likert scale. Their content was validated by 10 experts, and their reliability was calculated according to the Cronbach's Alpha method, yielding a value of 0.83 for the logistic instrument and 0.93 for the competitiveness variable.

Keywords: Logistics, Competitiveness, Production Companies, Special Coffee

RESUMEN:

El propósito general de esta investigación fue analizar la logística como factor determinante de la competitividad en empresas productoras de Café Especial del Municipio de Valledupar, Colombia, sustentándose en los postulados teóricos de Mora (2008) y (2011), Ballou (2004), Castellanos (2010), el Conpes 3527, DANE (2013), Gordon (2013), ICER (2012), Villamizar y Villamizar (2011), entre otros. Se desarrolló un estudio de tipo explicativo, con diseño de campo no experimental y transversal. La población se trabajó con ochenta y siete (87) unidades informantes. Se aplicaron dos cuestionarios de alternativas múltiples a escala de Likert, siendo validados en su contenido por juicio de 10 expertos y su confiabilidad fue calculada a través del método de Alpha de Cronbach, arrojando una valor de 0.83 para el instrumento logística y 0.93 para la variable competitividad.

Palabras clave: Logística, Competitividad, Empresas Productoras, Café Especial

1. Introduction

This research aims to demonstrate how logistics is a determining factor of competitiveness in special coffee producers, for competitiveness somehow depends on efficiency in processes linked to logistics, as well as to formulate a strategic plan to increase competitiveness in

these companies. Taking this into account and to be able to present the body of this investigation, the article was structured in four (4) sessions:

Session I refers to the approach of the problem and its formulation. The objectives, justification and delimitation of the study guided its execution. The empirical assumptions of the observed situation allowed to unveil the business reality addressed.

Session II offers the theoretical framework, which developed the foundation and proposed the theoretical perspective of the research. Previous investigations were reviewed in order to establish the state of the art or knowledge about the studied variable and its context, as well as the reflections generated from the review of theories, which allowed identifying the components or dimensions of the variable.

Session III corresponded to the epistemological approach that determined the method and techniques used to develop the research, according to the objectives and scope, which allowed to generate valid and reliable results, generalized to the population studied.

Session IV includes the analysis and interpretation of the results of the investigation. Considering the theoretical foundation, this analysis yielded the conclusions with respect to the variables studied. Relevant recommendations are also given in this session.

1.1. Problem Statement

According to Cuatrecasas (2003), the logistics in the company has as objective that the clients can dispose of their merchandise in an efficient time, that expectations and demands are fulfilled at a reduced cost. For this, an organization will need an efficient logistics that is in charge of planning, controlling of the movements and storage of the merchandise, from its possession, transfer, storage and to the final consumption of the product.

In agreement with the aforementioned author, logistics becomes a competitive advantage for any organization. But it must be considered that the logistics issue must be treated in an integral manner and not as an island within the company, that is, it must be treated as an information facilitator area and integrator of processes and resources that allow to properly dispose of the product that is to be introduced in the right market, in the right place and time, as expected by the client.

The European Union manages everything related to international operations with a degree of technology far superior to that of some Latin American countries, such as Colombia, Peru, Ecuador, among others. However, countries like Chile appear, which presents free trade agreements with more than 50 countries and is characterized by presenting quality systems and good practices in manufacturing, packaging and traceability, and transportation, which qualifies this country as the first one in terms of competitiveness and is the one that makes the difference in South America.

In Colombia, the national government is striving to carry out free trade agreements with the largest number of countries possible. There is currently an agreement with 34 countries, including the free trade agreement with the European Union. There are also those of New Zealand and South Korea, which are in the negotiation phase, among others, planned to be carried out before the end of 2014.

Currently, countries such as the United States, Canada, Japan and Mexico, are one of the many potential markets that have the special coffee producers of the Department of Cesar, which through the Federation of Coffee Growers of Colombia are exporting their products to these destinations.

Consequently, logistics in Colombia began to be addressed in the 80s, but as a business concept in the mid-90s. Today, it is practically a business culture, which has led to the success of companies such as Familia Sancela, Servientrega, Coomeva, Federation of Coffee Growers (Juan Valdés), Sofasa, among others, which acquire their added value through the integral application of logistics and demonstrating an approximate increase of 80% in competitiveness levels, both nationally and internationally.

According to Castellanos (2010), logistics is a strategic area to achieve competitive advantages, taking into account key concepts for the development of the project such as

logistics chain, logistics plan, value chain, national and global supply chain, procurement management, provisioning, storage, distribution logistics and technologies.

In the rural area of Valledupar, specifically the Municipality of Pueblo Bello located in the foothills of the Sierra Nevada de Santa Marta, there are associations and farmers producing coffee in the villages of the Municipality of Pueblo Bello, among which are the gentlemen Flemy Estupiñan, William Ardila, Orlando Hernández, Ceñir Clavijo, Gustavo Vargas, outstanding coffee producers, with their plots located in the towns of Costa Rica 1, San Quintín and Costa Plata, respectively, standing out in the municipality for their vast production of coffee, belonging to the group of members of the cooperative of coffee growers of the Caribbean coast, (CafiCosta) and the new organic coffee associations created in the municipality Café KIA - Café Aney and Asoprocasines (coffee Nacer).

According to the previous approach, the following question can be formulated: How is logistics established as a determining factor for competitiveness in companies producing special coffee?

1.2. Objectives of the Investigation

1.2.1. General Objective

Analyze logistics as a determining factor of competitiveness in special coffee producers of the Municipality of Valledupar.

1.2.1.1. Specific objectives

- Identify logistic macroprocesses in companies producing special coffee
- Determine the logistics microprocesses in companies producing special coffee
- Characterize the levels of competitiveness in companies producing special coffee
- Explain the determinants of competitiveness in companies producing special coffee

1.3. Justification

The present investigation can be justified from different perspectives since it deals with different aspects: from the theoretical aspect, the development of the investigation implies relating approaches, from a systemic and strategic perspective of logistics with the theory of the internationalization of small companies and of the social welfare of its workers.

Throughout this research, we will work with the companies that produce special coffee, which are concerned with the integration of each of the actors that are in the production system through different logistics aspects that become the transversal axis of the actions of companies.

The information on aspects related to logistics operations was reviewed among a certain number of companies that work in the rural area of the Municipality of Valledupar and that need the optimization of resources and constant communication to achieve the satisfaction of the final consumers in their supply chain.

The National Council of Economic and Social Policy (CONPES, 3527) of 2008, states that "In 2032 Colombia will be one of the three most competitive countries in Latin America and will have a high level of income per person, equivalent to that of a country of high average income, through an export economy of goods and services with high added value and innovation, with a business environment that encourages local and foreign investment". This national policy goes hand in hand with what is investigated in this project to determine if the improvement of the logistic processes generates a better competitiveness index in the business segment of the special coffee producers located in the department of Cesar.

With regard to the practical approach, the result of this research is to generate production and marketing strategies that integrate all the associations of the special coffee producers of the region so that logistic processes are strengthened and can reach more international destinations in the form of clusters or blocks of companies, which would result in a series of possible solutions to meet the objective set by the Ministry of Commerce, Industry and

Tourism, on the business development of Colombia internationally.

The way to obtain such results will be through the analysis of management indicators, macroprocesses and logistic microprocesses, diagnosis of the competitive level of the associations and the generation of a strategic plan in which possible solutions to the producers of special coffee are generated, according to Mora (2008).

The social approach of the project reflects in the productive sector. Even though it has great potential, it has always been characterized by the informality and lack of professionalism of those responsible for the Associations subject of this study, (unit of observation). Since most of the leaders and producers of the companies do not have a professional title, they have not formalized the companies before the government entities of the department, nor do they work based on strategic plans of commercialization, purchases, sales, rendering of services, customer loyalty and much less the application of logistic processes in the commercialization of the products(Gordon, 2013).

It also offers aspects that highlight the importance and necessity of the study, whose actors should improve their standard of living, because it is to reduce the performance of intermediaries in the processes of international physical distribution, reducing the risk of loss of utilities in the application of logistic processes and therefore generating strategies that improve the competitiveness of special coffee producers.

Likewise, the information collected will allow updating the statistical figures of the region in terms of the special coffee sector, which are not presented clearly or updated in the reports of the National Planning and Statistics Department (DANE), which the latest information of statistics is presented with one or two years of delay.

From the methodological approach, the project corresponds to a process of its own construction, which is new to evaluations of social benefit programs and, in this case where the coffee sector is one of those that the national government always takes into account in the event of an adverse event occurring that could cause problems in the production of the grain. The elaborated instrument may also be applied to other similar programs.

Finally, this work is intended to serve as a reference for future research, both Colombian and Venezuelan, which seek to evaluate competitive logistics processes of companies whose objective is to internationalize their products and achieve international competitiveness.

1.4. Theoretical Framework

1.4.1. Antecedents

In relation to the logistics variables and competitiveness, under the context of the Colombian coffee companies, various investigations have been developed, in which important contributions have been derived that enrich the theoretical and empirical nature of the subject. The most relevant authors who presented some type of relationship with the topic of logistics and competitiveness, which served as the basis for this research, are presented.

Table 1
Antecedents of the logistics variable with greater relevance in the investigation

LOGISTICS		
Author	Title	Input
Moran (2005)	Distribution logistics of non-alcoholic beverages warehouses for customer satisfaction	Diagnosing shortcomings in the analysis of logistics processes in customer service
Morales (2006)	Logistics management in the companies of the fruit pulp	Analysing the logistics management of purchases and

	processing sector in the municipality of Maracaibo	inventory, lack of procedures for measuring inventory levels of raw material and products
Borrego (2009)	Innovation and value chain in electricity distribution companies in the state of Zulia	Establish a relationship between innovation and the logistic of entry, operations and logistics of departure
Chacón (2010)	Management of innovation and logistics in manufacturing companies.	Manufacturing companies tend to manage innovation and integrate logistics functions.

Source: Own elaboration

Table 2
Antecedents of the competitiveness variable with greater relevance in the investigation

COMPETITIVENESS		
Author	Title	Input
La Cruz (2010)	Logistics as a tool for competitiveness in companies in the agro-industrial sector	Problems with information systems for the control and management of the supply chain, recycling and the environment.
David (2011)	Chain of value in Pygas processing plant Petrochemical Complex	The pygas processing plant has a high presence of competitive advantages, with service, operations and purchasing activities being the most relevant
Terán (2009)	Culture of innovation as a support for competitiveness in small and medium enterprises	SMEs under study do not have the competitiveness to maintain a competitive advantage, even when they have the potential to do so.
Emanuel (2001)	Design of a strategic marketing plan to improve the positioning of Peyless Shoes stores in the City of Maracaibo	Design a strategic marketing plan

Source: Own elaboration

1.4.2. Theoretical bases

In every research, it is essential to gather information that allows to disagree between the different approaches proposed and that in some way will help to give foundation to the study in process. Therefore, the theoretical basis can be considered as the collection of concepts and propositions typical of the problem or variables under study. The following are the most

relevant theoretical foundations on which the research was developed: author, type of product and its contribution to the development of the project.

Table 3
Theoretical bases with greater relevance
in the development of research

Theoretical Bases		
Author	Title	Input
Tejero (2011)	Integral logistics, the operative management of the company	Consolidation in the concepts of logistics integrality in business processes, specify entity in the flow of materials
Ramírez (2010)	Manual of Logistics Management of the Transport and Distribution of Merchandise	Presents an extensive information about the process of planning, implementing and controlling efficiently the flow and storage of raw materials, as well as the analysis of the components of logistics, transport systems, the cost system and its application in the international context
Mora (2008)	Indicators of Logistics Management	Concepts will help small coffee entrepreneurs to be able to make decisions regarding purchases, storage, transportation, distribution, exports and imports
Rojas y col (2011)	Integrated logistics	Helps so that the lack of planning is not transformed into high inventory costs in inventories
Porter (1998)	The competitive advantage of the nationals	Analysis of the five forces that determine the profitability of an industry because they influence precocious costs and the investment required which are the elements to calculate the return on investment
Villamizar (2011)	Competitive Transmutation	Presents a new approach for measuring competitiveness in companies, cities and countries, ie doing more of the same, but faster and more efficiently (transmutation)

Source: Own elaboration

1.4.3. Variable system

1.4.3.1. Nominal definition Variable 1: Logistics.

1.4.3.1.1. Conceptual definition

For the purposes of this research, the conceptual definition established by the Council of Logistics Management (CLM) (2015, p.15) is assumed, which states that "Logistics is the process of planning, implementing and controlling efficient flow and storage at an effective cost of raw materials, inventories in process, of finished product and related information from points of origin to consumption, in order to meet the needs of customers."

1.4.3.1.2. Operational definition

Logistics is the process of planning, controlling and managing the supply and distribution chain from the supplier of special coffee producing companies to the final customer, and it is operationalized based on the following dimensions: Logistic macroprocesses, Logistic microprocesses, with their respective subdimensions and indicators. In this sense, the variable will be measured operationally through the score obtained in the application of the data collection instrument designed by the author.

1.4.3.2. Nominal definition variable 2: Competitiveness

1.4.3.2.1. Conceptual definition

According to Villamizar and Villamizar (2011), competitiveness is understood as the capacity of a public or private organization, lucrative or not, to systematically maintain comparative advantages that allow it to reach, sustain and improve a certain position in the socioeconomic environment. The term competitiveness is widely used in business, political and socio-economic environments in general. This is due to the broadening of the frame of reference of economic agents that have gone from a self-protective attitude to a more open, expansive and proactive approach.

1.4.3.2.2. Operational definition

The competitiveness variable is conceived as the capacity of the Colombian companies producing special coffee to compete in national and international markets. It is operationalized from the dimensions, levels of systemic competitiveness and determinants of competitiveness, with its generic subdimensions and indicators. The same will be measured operationally through the score obtained with the application of the data collection instrument designed by the author and constructed based on the dimensions, with their respective indicators, generating the summary in a table operationalization of the variable.

2. Methodology

2.1. Population and Sample

According Tamayo and Tamayo (2009), the population is the total set of individuals, objects or measures that have some common characteristics observable in a place and at a given time. When carrying out some research, some essential characteristics must be taken into account when selecting the population under study.

Table 4
Methodological Framework

Epistemological Approach	Type of Research	Research Design
<p>Positivist: The facts are described as they manifest themselves in reality and transcend them, allowing the generation of contributions from the analysis of the results obtained.</p> <p>Hernández, Fernández & Baptista (2010)</p>	<p>Explanatory: explains why a phenomenon occurs and under what conditions it manifests, or why two or more variables are related</p> <p>Hernández, Fernández & Baptista (2010)</p>	<p>Non-experimental: according to Hernández, Fernández and Baptista (2010), non-experimental research is one that is carried out without deliberately manipulating variables.</p>
		<p>Field: includes the systematic analysis of problems in reality, with the purpose either of describing them, interpreting them,</p>

understanding their nature and constituent factors, explaining their causes and effects.

Transectional: the variable is measured in a single moment.

Hernández, Fernández & Baptista (2010)

Hernandez and others (2010) say that the population is a set of elements or related things in one or more characteristics, like a totality or universe on which the conclusions of the investigation are generalized. The population of the present study is made up of the general managers, of costs as well as purchasing, logistics and storage managers and marketing managers of the companies ASOPROKIA and ASOPROCASINES. It should be noted that these reporting units work and operate within the institution, and are accessible, for which sampling procedures are not required. In addition the population census assumed, according to the Veliz criterion (2004), it consists of the complete enumeration of the population, that is, the analysis of the universe in study. In this sense, the entire population is assumed and applied to the research sample, as identified in the following table:

Table 5
Population distribution

Informant Units	ASOPROKIA	ASOPROCASINES	Total
General Manager	1	1	2
Financial Manager	1	1	2
Purchasing Manager	1	1	2
Storage Manager	1	1	2
Dispatchers	15	34	49
Logistics Manager	1	1	2
Marketing Manager	1	1	2
Logistics Operators	5	8	13
Distributor	3	4	7
Transport Manager	1	1	2
Total	30	53	83

Source: Own elaboration from data taken from Asoprokia y Asoprocasines (2014)

2.1.1. Techniques and instruments for data collection

For the collection of information, the Likert questionnaire was used as an instrument, which

consists, according to Hernández and others (2010), in an instrument that allows measuring the variable in terms of intention.

2.1.2. Validity and reliability of the instruments

The validity of an instrument for Balestrini (2006) is defined as the degree to which a test measures what is proposed in an investigation. Tamayo and Tamayo (2009) add that validity is the degree to which an instrument reflects a specific domain of the content to be measured, the degree to which the measurement represents the concept or variable. Thus, the validity of a measurement instrument is evaluated on the basis of the evidence of content and represents the variable it intends to measure.

In this context, the validity of the content of the instruments was obtained through the judgment of experts in the area, who were in charge of evaluating the correspondence of the items with the established objectives, dimensions and indicators, determined the pertinence and coherence of the research in function of its purpose.

To carry out this procedure, a format was created, which presents a set of instructions that guided the experts in the evaluation of the instruments, thus obtaining their opinions and assessment of the different aspects of interest. The suggestions of the experts were considered in order to make the necessary adjustments to present the final version of the instruments addressed to the population under study that work in the aforementioned companies.

Regarding reliability, Hernández and others (2010) state that it represents the degree to which an instrument in its application repeated to subjects under similar conditions produces the same results. Likewise, Balestrini (2006) adds that the reliability of the instruments is determined according to the structure of the instrument, estimating the reliability of the instruments using the Alpha Cronbach formula, which, according to Pelekais et al. (2014), is used when instruments have several response alternatives:

$$\alpha = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum_{i=1}^k S_i^2}{S_t^2} \right]$$

Where:

K = number of items

Si² = score variance of each item

St² = total score variance

In this sense, to calculate the reliability of the instruments, a pilot test was applied to a population of twenty (20) individuals that possess the same characteristics common to the population under study, in an organization with similar characteristics to the companies addressed. The data obtained from the pilot test were recorded and organized in a double entry matrix, through the statistical program SPSS, version 21.0. and EXCEL 2010 version, where the index showed 0.83, showing that it is a reliable instrument.

2.1.3. Data analysis technique

Once the data has been cataloged, transferred to a matrix, placed in a file and freed of errors, the researcher started the analysis. Regarding the statistical treatment of the data collected, Tamayo and Tamayo (2009, p. 187) state that "tabulation of data is a technique that the researcher uses to process the information collected, which enables the organization of the data related to a variable, dimension, indicators and items. It requires a systematic and careful process". These techniques are intended to obtain information from subjects in depth, using the same words, definitions or terms of the subjects in their context.

Accordingly, Hernández and others (2010, p. 278) point out that "the analysis of the data is carried out on the data matrix using a computer program". In this investigation, for the analysis of the data collected through the questionnaires, the statistical package SPSS, version 21.0, was used through an inferential statistical analysis.

Framed in this operational sequence, the results obtained after the application of the questionnaires corresponding to the variables logistics and competitiveness, were analyzed from the variance analysis technique (ANOVA) and Tukey's Post Hoc test, for the study of the positioning, and of the subsets established from the significant differences between each of the indicators, denoting the high means in contrast with the lowest ones. In this way, tables were drawn up to concentrate the results, using linear graphs or frequency polygons, in order to highlight the averages achieved, thus allowing to observe the behavior of the population under investigation.

Likewise, for the purpose of the analysis and interpretation of results, explanatory parameters were established. As indicated by Kerlinger and Lee (2002), a numerical value lacks quantitative meaning, unless a meaning is assigned to it. These allocation rules must have correspondence and be linked to reality.

In this regard, the scale developed for the interpretation of the results was established based on the number of alternatives on the scale, taking into account five (5) categories, which will guide the calculation of the intervals using the following formula: $IB = (v - v) / \text{no categories}$, where IB interval of the scale, greater value that was five (5) and the lowest one (1), resulting in 0.80. (See Figure 6)

Table 6
Scale for the interpretation of results

Range	Interpretation categories
$1,00 \leq X \leq 1,80$	Absent
$1,81 \leq X \leq 2,60$	Scarcely present
$2,61 \leq X \leq 3,40$	Moderately present
$3,41 \leq X \leq 4,20$	Present
$4,21 \leq X \leq 5,00$	Very present

Source: Own elaboration (2016)

3. Results

3.1. First specific objective

Table 7
Analysis and discussion of the results of the first objective

Dimension: Macroprocesses					
The Variance Analysis technique (ANOVA) and the Tukey Post Hoc Test were applied in order to appreciate the differences of means by dimension, in contrast to the lower ones.					
Anova					
	Sum	Gl	Quadratic mean	F	Sig.
Inter-groups	4769	3	1.590	3.372	0.19
Intra-groups	154.648	328	.471		

Total	159.417	331		
<p>Analysis of the Variance (ANOVA): Accurate significance in the comparison of the averages of the indicators of the dimension.</p> <p>Level of significance: (0.019 < 0.05, level of referential significance).</p> <p>There are no significant differences between the compared indicators.</p>				
Tukey's Test of Homogeneous subsets				
Factor	N	Subset for alpha * 0,05		
		1	2	
Logistics of Use	83	1.5301		
Inventory Logistics	83	1.5984	1.5584	
Logistics Costs Management	83	1.7349	1.7549	
Distribution and Serving to the Client	83		1.8394	
Sig.		.221	.110	
<p>Three first indicators: 1.53, 1.59 and 1.73 pts: (1.0 < 1.8): Absent</p> <p>Last indicator: 1.83 pts: (1.81 < 2.60): Scarcely present. greater preference</p>				

Source: Own elaboration (2016)

3.2. Second Specific Objective

Table 8
Analysis and discussion of the results of the second objective

Dimension: Macroprocesses:					
The Variance Analysis technique (ANOVA) and the Tukey Post Hoc Test were applied in order to appreciate the differences of means by dimension, in contrast with the lowest ones.					
Anova					
	Sum	Gl	Quadratic mean	F	Sig.
Inter-groups	.988	2	.494	2.078	.127
Intra-groups	58.485	246	.238		
Total	59.473	248			

Analysis of the Variance (ANOVA): precise significance in the comparison of the averages of the indicators of the dimension Level of significance: (0.127 > 0.05, level of referential significance)

There are no significant differences between the compared indicators.

Tukey's Test of Homogeneous subsets

Factor	N	Subset for alpha * 0,05		
		1	2	3
Utilization	83	1.4227		
Performance	83	1.5007		
Productivity	83	1.8453		
Reverse logistics	83	1.5770		
Sig				.105

Three first indicators: 1.53, 1.59 and 1.73 pts: (1.0 <1.8): Absent
 Last indicator: 1.83 pts: (1.81 <2.60): scarcely present. greater preference

Source: Own elaboration (2016)

3.3. Third Specific Objective

Table 9

Analysis and discussion of the results of the third objective

Dimension: Competitiveness Levels					
The Variance Analysis technique (ANOVA) and the Tukey Post Hoc Test were applied in order to appreciate the differences of means by dimension, in contrast with the lowest ones.					
Anova					
	Sum	Gl	Quadratic mean	F	Sig.
Inter-groups	9.660	4	2.490	7.095	.000
Intra-groups	143.882	410	.351		
Total	153.842	414			
Analysis of the Variance (ANOVA): precise significance in the comparison of the averages of the indicators of the dimension. Level of significance: (0.000 <0.05, level of referential significance). There are highly significant differences between the compared indicators.					
Tukey's Test of Homogeneous subsets					
Factor	N	Subset for alpha * 0,05			
		1	2	3	

Cost Leadership	83	1.5904	1.5904	1.5904
Differentiation	83		1.7028	1.7028
Focus	83			1.8353
Sig.		.224	.129	.061
Two indicators: 1.5904 and 1.7028 points: (1.0 <1.8): Absent				
Third indicator: 1.8353 pts: (1.81 <2.60): scarcely present, greater preference.				

Source: Own elaboration (2016)

3.4. Fourth Specific Objective

Table 10
Analysis and discussion of the results of the fourth objective

Dimension: Competitiveness Factors					
The Variance Analysis technique (ANOVA) and the Tukey Post Hoc Test were applied in order to appreciate the differences of means by dimension, in contrast with the lowest ones.					
Anova					
	Sum	Gl	Quadratic Mean	F	Sig.
Inter-groups	2.017	3	.672	1.663	.175
Intra-gruops	132.613	328	.404		
Total	134.631	331			
Analysis of the Variance (ANOVA): precise significance in the comparison of the averages of the indicators of the dimension. Level of significance: (0.175 > 0.05, level of referential significance)					
There are highly significant differences between the compared indicators.					
Tukey's Test of Homogeneous subsets					
Factor	N	Subset for alpha * 0,05			
		1			
New technologies	83				1.4578
Buyer's Changing needs	83				1.6024
Appearance of a new segment	83				1.6345
Change in Costs	83				1.6586
Government Changes					1.7934

All the indicators: 1.4578, 1.6024, 1.6345, 1.6586 and 1.7934 points: (1.0 <1.8): Absent Fifth indicator: 1.7934 points: (1.0 <1 , 8): Absent, greater preference.

Source: Own elaboration (2016)

4. Conclusions

Table 11
Conclusions of the first objective

Conclusions: First objective: Identify logistic macroprocesses in companies producing special coffee.

Logistic Macroprocesses: Absence of Macrologistics processes in the Special Coffee Companies.

1. Process development is weakened, with emphasis on those destined to establish and control the goals of the companies.
2. Evidence of absence of guidelines in all processes, denoting deficiency indicating how and why they should be done, hindering the achievement of the organizational vision.
3. Impact directly on customer satisfaction and any other aspect of the organization's mission.
4. It was found that factors, such as inventory management, were absent, even when they support *the raison d'etre* of the special coffee companies, objects of study.
5. It was evident that processes such as distribution and customer service are directly linked to the mission of the organization.

Source: Own elaboration (2016)

Table 12
Conclusions of the second objective

Conclusions: Second objective: Determine the logistics microprocesses in companies producing special coffee.

Logistic macroprocesses: They were absent from a technical approach within the companies under study according to the opinion of the managers, logistics operators, dispatchers and distributors; revealing the existence of certain gaps that impede development.

1. Companies neglect to fully cover the search for abstractions that correctly model the problem.
2. The absence of activities inherent in the reverse logistics developed by those with ecological connotations was evidenced.
3. They neglect the improvements and greater benefits in the productive processes and supply of the markets.
4. They neglect Customer Service (sales), production planning, service providers (purchases and provisioning), storage, inventory management, transport and reverse logistics.

Source: own elaboration (2016)

Table 13
Conclusions of the third objective

Conclusions: Third Objective: Characterize the levels of competitiveness in companies producing special coffee

Levels of competitiveness: absent in the competitiveness processes of special coffee companies

1. There was weakness in the levels reached by the companies producing special coffee, a situation identified as it follows the same pattern of contrasting various factors of competitiveness between companies in the same branch.
2. A distancing is revealed, as it analyzes the conditions presented by the regions for the sustainable development of a specific sector.
3. The results show the absence of elements similar to other competitiveness exercises, which indicates the lack of a relative advantage for coffee cultivation.
4. All the pillars of competitiveness analyzed have low scores, deducing that they lack advantages related to natural resources and technology used for coffee cultivation.
5. They have a robust coffee institutional structure and the best living conditions of coffee houses, which is largely related to the broad coffee tradition.
6. It is necessary to strengthen coffee production emphasizing aspects of quality and differentiation of coffee; indicators that are manifested as absent in the present study.
7. Although there is a labor market that presents excess demand, specifically during harvest periods, new technologies are not generated or adopted that will allow the coffee industry in these departments to solve this difficulty.

Source: own elaboration (2016)

Table 14
Conclusions of the fourth objective

Conclusions: Fourth Objective: Explain the determinants of competitiveness in companies producing special coffee

Determining factors of the competitiveness: determined with clarity and the absence of their application by the special coffee companies is seen

1. Absence of competitive development factors, such as production, optimal natural resources, selection of skilled labor, favorable work rate
2. They neglect the management that the coffee grower gives to the production system of coffee growers.
3. The coffee grower does not know the environmental offer and the optimal production system that allows him to acquire greater productivity and development, adopting technology that generates differentiation, knowledge of the international market, be competent and successfully perform each part of the coffee production process.
4. A better level of competitiveness must be included on the part of the coffee producer. There were high levels of adoption of the coffee technologies investigated.
5. To maintain a competitive advantage in the international arena, it is required to assume processes of catching up in the environment, changing the technical conditions of production.

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1. Faculty of Administrative, Accounting and Economic Sciences. Popular University of Cesar. Doctor in Management Sciences. Master in Business Management, Specialist in International Business Management and Mechanical Engineer. Teacher of International Trade Program. yimygordon@unicesar.edu.co

2. Faculty of Engineering. Popular University of Cesar. Doctor of Educational Sciences, Doctor of Science, Management Mention. Doctor of Educational Sciences. Food Engineer. Teacher of Agroindustrial Engineering Program. carlosvidal@unicesar.edu.co

3. Faculty of Administrative, Accounting and Economic Sciences. Popular University of Cesar. Post-Doctor in Management of Higher Education. Doctor of Educational Sciences. Master in Business Management, Bachelor of Education. Professor of Business Administration Program. geovanniurdaneta@unicesar.edu.co

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