



KEY FACTORS OF BUSINESS MANAGEMENT IN MSMEs OF THE FOOD AGROINDUSTRY IN BOYACÁ.

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Abstract

This article presents the results of the analysis of business management in a sample of 91 food agribusiness MSMEs in the department of Boyacá. Through a descriptive and correlational study, 60 factors were analyzed in ten areas, the results allowed classifying them according to the degree obtained, in first place production, financial and strategic planning, with an average of 85.3% of compliance and outstanding valuation; human talent with satisfactory management degree and average of 67%; marketing, ICT, quality and relations with acceptable degree and average of 58%; finally the areas with insufficient management degree which were innovation and environmental, with an average of 37% of compliance in the analyzed factors. In 88% of these factors, management does not depend on the size of the company and 87% does not depend on the productive branch. The methodology used facilitates the identification of factors requiring improvement, always keeping in mind a holistic view of the organization and its management areas.

Key Word: quality; innovation; marketing; planning; relationships

INTRODUCTION

This article presents the results of the project entitled "Strategic management for competitiveness in MSMEs of the food agribusiness in Boyacá", where work was carried out in companies dedicated to the transformation of dairy, meat, fruits, vegetables and other products such as seeds and grains. The purpose was to make an analysis by areas and within these to identify the key factors, and to determine if the management of these factors depended on the size or productive branch of the company. This information serves as a basis for proposing strategic alternatives for improvement that contribute to the competitiveness of the agro-industrial sector, given the economic importance for the department.

On the one hand, MSMEs represent the largest percentage of companies in the world, in Colombia, according to a report by the National Association of Financial Institutions (ANIF) in 2021, they accounted for more than 99%, contributing 79% of employment and their contribution to GDP was estimated at 40%. Similarly, the food agribusiness is a sector with a comprehensive approach, which infers contributions from different disciplines and areas of knowledge; It ranges from the provision of inputs and production to consumption, therefore it has the power to impact economic growth, environmental sustainability, poverty and hunger reduction, achieving a greater and better use of production (Perfetti & Cortés, 2013).

The food agribusiness for the department of Boyacá is prioritized as a productive bet, derived from its vocational tradition, geographical position, variety of climates, abundant natural resources,



fertile lands, advantages that have allowed it to be recognized as the country's agricultural pantry, as well as opportunities for industrialization of a wide variety of products.

According to a report by the Manizales Chamber of Commerce (CCMPC, 2015) and Zylbersztajn (2017), the agro-industrial sector does not have a significant number of studies, especially in Colombia. Similarly, by company size, the highest percentage of studies have been oriented towards small, medium and large enterprises, leaving out micro-enterprises. Taking into account the above, through a descriptive and correlational study, based on the hypothesis that business management is applicable in MSMEs of the food agribusiness in Boyacá, regardless of the size and productive branch of performance, this research was carried out.

Regarding the word management, Mora, Durán and Zambrano (2016) point out that it comes from the Latin *gestio* and refers to managing and administering resources in organizations, whether public or private, to achieve the proposed objectives, in other words, it is the necessary procedure to achieve something or resolve a matter commonly of an administrative nature.

The concept of business management has evolved, to the extent that man has advanced in the application of new technologies and processes for the improvement of products and services, as a response to the demands of increasingly global and complex markets. (Hernández, 2011) Therefore, in the management of organizations, it is necessary to have a holistic vision to determine their areas and key management factors. in order to ensure that it is fully viable in a market economy (Chiavenato, 2017; Domínguez-Rubio, 2008). Based on the above and according to the business sector under study, it was considered pertinent to involve and take into account the Management areas described below:

First of all, strategic planning, which is considered to be of a higher and general order. Which is defined as the process of anticipating change, with the purpose of creating strategies that guarantee the future of the business, therefore it must be assumed as a continuous, systematic and cross-functional process aimed at keeping the organization appropriately coupled with the environment in which it operates, for the achievement of objectives and goals according to its mission (Chiavenato, 2017; González, Salazar, Ortiz, & Verdugo, 2019).

Innovation management is a current need in all types of organizations, which is closely related to research and development (R+D+i), understood as a manifestation of human creativity that transforms knowledge into added value for society and competitiveness for the company. processes and services or improvement of existing ones, which allow it to remain in the market and remain competitive (Drucker, 1985; OECD/Eurostat, 2018). Complemented by the management of human talent that fosters the integration of all people and makes a difference, taking into account their academic background, experience, skills and competencies aimed at generating knowledge, which will undoubtedly contribute to the competitiveness of the organization (González et al, 2019; Vallejo, 2016).

In this type of company, management in the area of production and operations is of utmost importance. Caba, Chamorro and Fontalvo (2011) and Vilcarromero (2017) conceive it as the art of combining a company's resources to develop products or provide services; therefore, it focuses on the planning, organization, realization and evaluation of different forms of production, in order to obtain a product with added value that responds to the needs of customers.

Where quality management is an unavoidable condition to achieve success in the food agribusiness and represents a fundamental strategy for product improvement, in which the motivation and participation of all components of the organization is required (Feldman et al., 2015). Quality management is increasingly the focus of attention, due to the direct relationship with customer satisfaction and reliability, ensuring a high degree of loyalty, which of course has an impact on the productivity, profitability and competitiveness of companies (Berovoides & Fernández, 2013; Santamaría, 2017).

However, it is not enough to have abundant quality production, it is also important to manage marketing, which according to Cantillo (2013, p.143) is "that part of strategic planning where marketing theories and techniques are used for the development of the corporate strategy, with which organizations achieve the final objectives and with these, the success of the business is



determined." This implies knowing the needs, desires, preferences and trends in customers' consumption habits, in order to offer timely responses (Franco, Restrepo & Sánchez, 2014).

Information and communication technology (ICT) management is also required, which includes technical-managerial decisions related to the selection, negotiation, transfer, adaptation and assimilation of a certain technology, to provide the necessary support that allows companies to modernize, streamline and streamline processes; improve its internal efficiency, customer service; define new markets and business opportunities in order to meet their objectives (Aguilera, Ávila, & Solano, 2017; Ibarra, González, & Demuner, 2017).

In any organization, regardless of its nature, accounting and financial management must always be considered, inherent to all tasks related to the achievement, use and control of financial resources, to make the organization manage efficiently and effectively; since it is a matter of promoting a technical, humane and transparent management in the process of its administration; therefore it requires understanding the environment. diversify sources and uses, as well as carry out analyses through indicators and generate information that facilitates decision-making (Cabrera, Fuentes, & Cerezo, 2017; Saavedra, Tapia, & Aguilar, 2016).

Nowadays, business management cannot be conceived without taking into account environmental management, which according to Barrow (2006) and Massolo (2015) encompasses the set of provisions aimed at maintaining sufficient environmental capital, producing in the present, without exhausting or compromising the possibilities for future generations to meet their own needs. Action that entails sustainable behavior in accordance with the goals set and as a response to environmental regulations, social, financial and economic pressures, as well as an indicator of business competitiveness (González, 2017; Rocha, Cuevas, & Soto, 2016).

Finally, emphasis is placed on the management of relationships with *stakeholders*, which according to Orozco and Arraut (2012) and Santamaría (2017) represent an excellent opportunity to get ahead, especially for MSMEs that, due to their size, resources and capacities, urgently need alliances, agreements or associativity. Where "associativity processes are recognized as mechanisms that enable cooperation between companies in order to achieve advantages both for themselves and for the environment in which they are established" Grueso, Gómez and Garay (2009, p.6), considering that they can permeate a broader economic circuit and improve competitiveness.

MATERIALS AND METHODS

The study area was the department of Boyacá located in the center east of Colombia, and specifically in the municipalities of Tunja, Sogamoso, Duitama, Moniquirá, Paipa, Belén, Motavita, Combita, Chiquinquirá, Firavitoba, Tibasosa, Nobsa, Sotaquirá, Santa Rosa de Viterbo, Soracá, Sutamarchan and Ventaquemada. The population under study corresponded to MSMEs (micro, small and medium-sized enterprises) of the food agribusiness of the productive branches, dairy, fruits and vegetables, meat and other products (cassava and banana chips, corn and fava beans fritters, dried fruits and seeds, extruded corn, rice, quinoa, chickpeas and chia, among others), registered in Chambers of Commerce and agro-industrial directory of Boyacá in 2018, from which a sample of 91 companies was selected through probability sampling.

The methodological approach was descriptive-correlational (Bernal, 2016; Fernández, Hernández-Sampieri & Baptista, 2014) the results allowed us to describe the characteristics of the companies, as well as the analysis of management factors by areas, in addition to determining relationships between variables studied to test the hypotheses proposed.

To collect information from the companies, a survey form structured in two parts was designed, the first to inquire basic aspects about the characterization of the companies, by size, productive branch, seniority and formalization; as well as manager information, such as gender, educational background, and time in office. The second part is dedicated to understanding the factors of business management in the ten areas considered for the study, as shown in Table 1.

The statistical analysis was carried out with the *software* SPSS and for the To verify the hypothesis, Pearson's Chi-square test was applied with a *alpha* of 0.05 and the results are interpreted as being higher than this value, it cannot be inferred that they are associated with the size or productive



branch of the company. For the organization and interpretation of the results of business management, the scale proposed by Melo was used, as shown in Table 2. (2019)

Table 1 Areas and Factors for Business Management Analysis

| Areas of Management | Factors analysis | Don't ask |
|-------------------------|--|-----------|
| Strategic Planning | Corporate image, mission, vision, objectives, planning activities | 8 |
| Marketing | Research, segmentation, customers, marketing scope, positioning perception | 11 |
| Human Talent | Process of linking personnel, academic level, education and training | 7 |
| Production & operations | Company structure, processes, installed capacity | 5 |
| Technology | Degree in Technology, Communication and Information, Applications, Equipment and Media | 8 |
| Quality | Invima, Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP), ISO 9000 and other certifications | 5 |
| Accountant & financial | Financial Tools, Credits, Portfolio, Utilities | 5 |
| Environmental | Environmental management activities, ISO 14000 | 3 |
| Innovation | Types of Innovation, Innovation Support Resources | 4 |
| Relations | Alliances, associativity, relationship with stakeholders | 4 |

Source: Authors' own creation. Note. This table shows the analysis factors by area, which were established taking into account the contributions of the aforementioned authors and their correspondence with the agro-industrial sector.

TABLE 2 ASSESSMENT SCALE OF THE DEGREE OF MANAGEMENT IN MSMEs OF THE FOOD AGRIBUSINESS

| Degree of management | % of compliance | Bachelor's Degree in Management | % Compliance |
|----------------------|-----------------|---------------------------------|--------------|
| Outstanding | 84-100 | Insufficient | 33-49 |
| Satisfactory | 67-83 | Deficient | 16-32 |
| Acceptable | 50-66 | Very poor | 0-15 |

Fountain. Melo, L. 2019

RESULTS AND DISCUSSION

Characterization of the companies. Of the 91 MSMEs included in the study, 64 are family businesses, highlighting their knowledge and tradition in know-how, with respect to the productive branch, 37 belong to dairy products, 31 to fruits and vegetables, 13 to other products and 10 to meat. By size, depending on the number of employees, 61 are micro-enterprises with a number of employees from two to ten and an average of six, 26 small companies with an average of 20 employees and 4 medium-sized companies with a staff of more than 51 employees and an average of 69, in total these companies contributed 1,172 jobs.

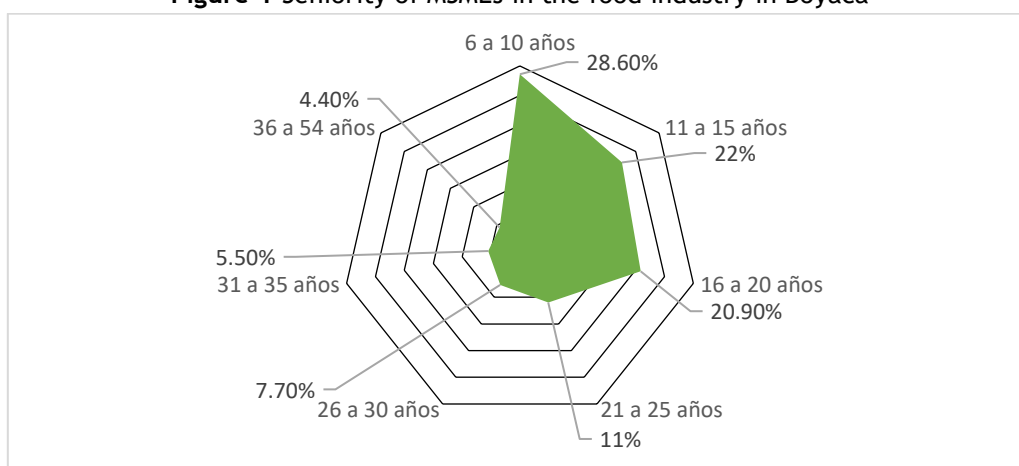
Regarding the degree of formalization, where one of the main requirements is to have a Single Tax Registry (RUT) issued by the Directorate of National Taxes and Customs (DIAN), 95% compliance was evidenced as well as 74% in commercial registration in the Chamber of Commerce, aspects that allow companies to accredit public recognition, participate in contracting with the state, access to benefits in public calls, among others.



The age of the companies is shown in figure 1, results that are considered encouraging, noting that 100% exceed six years, because according to Santana (2017) only 50% of microenterprises manage to reach seven years and according to studies by Confecámaras (2017) after five years only 42.9% of companies survive. where size, sector, location and access to credit, among other factors, can influence.

Regarding managers, the time in office ranges from 3 to 42 years, the highest percentage is between 6 and 10 years; By gender, 48% correspond to women and 52% to men and academic training, 51% are professionals, 8% are technologists, 29% have high school diplomas and 13% have only primary education, which corresponds to those who are both owners and managers of their companies and have been at the head of them for a considerable time.

Figure 1 Seniority of MSMEs in the food industry in Boyacá



Source: Authors' own creation

Business management. Taking into account the scale used for the organization and interpretation of the results, they were grouped by management areas into the grades of outstanding, satisfactory, acceptable and insufficient. The areas that achieved an outstanding degree of management are shown in Table 3, in first place was production and operations with an average compliance of 86% of the factors analyzed; Regarding the use of installed capacity, 37% use less than fifty percent, 28%, between fifty and seventy percent, and 33% between seventy and ninety percent, showing a great opportunity for business growth, in product portfolio, as well as customers.

The other two areas shown in Table 3 obtained 85% compliance in the analysis factors. In the accounting and financial area, it is also noted that according to 55% of the managers, profits in the last year were good, while 43% rated them as regular; Regarding the destination of these, 77% said that they invest them in the purchase of machinery and equipment, 45% in expanding facilities, 34% for savings, 25% in hiring more personnel, while 7.7% in personal expenses; results that, in general, allow us to infer knowledge and assertiveness in their management.

Table 3 Areas with an outstanding degree of management

| Management Area | Factors analysis | % Fulfilled | Degree of management |
|-------------------------|--------------------------------------|-------------|----------------------|
| Production & Operations | Appropriate Organizational Structure | 87 | Outstanding |
| | Flexible processes | 90 | Outstanding |
| | Strategic location | 84 | Outstanding |
| | Appropriate Distribution Channels | 84 | Satisfactory |
| | Keep accounting records | 100 | Outstanding |



| | | | |
|----------------------|------------------------------------|----|--------------|
| Accounting & Finance | Manage budgets | 84 | Outstanding |
| | Has credit history | 79 | Satisfactory |
| | Handles <i>accounting</i> software | 78 | Satisfactory |
| Strategic Planning | Have a Mission | 92 | Outstanding |
| | Count on Vision | 89 | Outstanding |
| | Planning pays off for you | 90 | Outstanding |
| | Verifiable Goals and Objectives | 87 | Outstanding |
| | Have Goals | 81 | Satisfactory |
| | Plan activities | 78 | Satisfactory |
| | Objectives communicated to staff | 78 | Satisfactory |

Source: Authors' own creation

In terms of strategic planning, 86% of managers consider that their company enjoys a good image and recognition, it was also found that although they do planning, it is done only for the short term, ranging from a week to a year, showing absence in the vision and projection in the medium and long term.

Continuing with the presentation of results, Table 4 shows those of the human talent area, its degree of management classified as satisfactory, with an average compliance of 67%, noting that the factors in which it requires greater attention and improvement are those related to human development, such as personnel training and occupational health. aspects that, if properly managed, can improve staff motivation and therefore have a positive impact on the productivity and competitiveness of companies.

Table 4 Area with a Satisfactory Management Degree

| Management Area | Factors analysis | % Fulfilled | Bachelor's Degree in Management |
|-----------------|--------------------------------|-------------|---------------------------------|
| Human Talent | Performance-based remuneration | 89 | Outstanding |
| | Jobs identified | 87 | Outstanding |
| | Personnel selection process | 76 | Satisfactory |
| | Delegate responsibilities | 73 | Satisfactory |
| | Staff training | 59 | Acceptable |
| | It has a code of ethics | 42 | Insufficient |
| | Occupational Health Programs | 40 | Insufficient |

Source: Authors' own creation

This is followed by areas with an acceptable degree of management (Table 5), with averages of compliance between 50% and 66%. In the area of marketing, aspects such as knowledge of customers, as well as competitors, stand out; where 89% of managers consider that their company is in a good position compared to the competition; However, it is observed that only 46% of the companies have nutritional table information, an aspect that is becoming more and more interesting every day given the requirements of users for safety and health. This area obtained an average of 65% compliance in the factors analyzed.

Table 5 Areas with an acceptable level of management

| Management Area | Factors analysis | % Fulfilled | Bachelor's Degree in Management |
|-----------------|----------------------|-------------|---------------------------------|
| Marketing | Know your customers | 93 | Outstanding |
| | Does market research | 65 | Acceptable |

| | | | |
|-----------|--------------------------------------|----|--------------|
| | Marketing is planned | 62 | Acceptable |
| | Marketing is budgeted | 58 | Acceptable |
| | Products have nutritional table | 46 | Insufficient |
| Tic | Email Availability | 78 | Satisfactory |
| | Conduct marketing using the Internet | 41 | Insufficient |
| | Website Availability | 33 | Insufficient |
| Quality | Invima is registered | 86 | Outstanding |
| | They apply BPM | 80 | Satisfactory |
| | HACCP system applied | 43 | Insufficient |
| | ISO 9000 certified | 29 | Deficient |
| Relations | Confidence in supplier qualification | 96 | Outstanding |
| | Have alliances or agreements | 42 | Insufficient |
| | Belong to an association | 40 | Insufficient |

Source: Authors' own creation

The area of information and communications technologies with an average of 59% compliance. It was observed under the use of emails, website and negotiations are not carried out using these means, in the same way only 56% of managers consider that their company is technologically prepared to be competitive, being one of the areas where greater attention is required, due to the current conditions of the Covid 19 pandemic.

The quality area achieved an average compliance of 53%, 14% of companies still do not have registration from the Institute of Food and Medicines (Invima), a mandatory requirement for this type of company; regarding ISO 9000 certification, they consider it very expensive compared to its three-year validity period and then needs renewal; However, some companies have alternative certifications, such as designation of origin and green business, a favorable aspect that can also be a factor of recognition and competitiveness.

In relations with *stakeholders*, its average management was 53%, resulting in a critical factor in which different strategies must be worked on to improve, especially when a high number of companies are micro-enterprises that really need alliances and support from associations in the sector, academia, agreements with both suppliers and customers for the development of different activities that can contribute to improving their permanence. productivity and competitiveness.

Finally, the results of the areas whose degree of management was assessed as insufficient (see table 6) are presented, since their average compliance was below 50%. The area of innovation with an average of 39%, finding that only 52% of companies carry out some type of innovation, of that percentage in product 28%, in process 41%, marketing 22%, search for new inputs 18% and management 12%. Although calls have been made at the departmental level to support these activities, participation has not been significant.

Table 6 Areas with insufficient management

| Management Area | Factors analysis | % Fulfilled | Bachelor's Degree in Management |
|-----------------|---|-------------|---------------------------------|
| Innovation | Develop innovation activities | 52 | Acceptable |
| | It has information systems for R+D+i | 40 | Insufficient |
| | For R+D+i, the company has Resources | 35 | Insufficient |
| Environmental | Carry out environmental management activities | 50 | Acceptable |
| | They carry out recycling | 46 | Insufficient |
| | ISO 14000 Certification | 10 | Insufficient |

Source: Authors' own creation



Similarly, the environmental management area had an average compliance rate of 35%, being a voice of alarm to work in this regard, since it is considered a relevant area for business competitiveness, since it improves the business image before interested parties, in addition to complying with the relevant regulations, in order to achieve better living conditions for people. maintain a balanced environmental capital and, of course, contribute to development objectives.

Hypothesis testing. For the hypothesis "Business management is applicable in MSMEs of food agribusiness in Boyacá, regardless of their size, it was fulfilled in 88% of the factors analyzed and for the hypothesis "Business management is applicable in MSMEs of food agribusiness in Boyacá, regardless of the productive branch, it was fulfilled in 87% of the factors analyzed. Tables 7 and 8 respectively show the factors for which the hypotheses were not met, deducing that management depends on the size or productive branch to which the company belongs and therefore, require greater attention from managers and see their need and importance to manage them.

Table 7 Management Factors That Depend On The Size Of The Company

| Management Area | Factors analysis | Chi-square | GL | Asymptotic significance |
|-----------------|---|------------|----|-------------------------|
| Planning | The company has goals | 6.973 | 2 | 0.031 |
| Marketing | Marketing is budgeted | 7.280 | 2 | 0.026 |
| Quality | ISO 9000 certified | 7.047 | 2 | 0.030 |
| Relations | Have alliances or agreements | 6.598 | 2 | 0.037 |
| Innovation | Develop innovation activities | 7.699 | 2 | 0.021 |
| Environmental | Carry out environmental management activities | 7.358 | 2 | 0.025 |
| | They carry out recycling | 8.362 | 2 | 0.015 |

Source: Authors' own creation

Table 8 Management factors that depend on the productive branch of the company

| Management Area | Factors analysis | Chi-square | GL | Asymptotic significance |
|-----------------|--|------------|----|-------------------------|
| Production | Appropriate Organizational Structure | 13.996 | 4 | 0.007 |
| Marketing | Marketing is planned | 12.860 | 4 | 0.012 |
| Tic | Communicates with customers via the internet | 10.151 | 4 | 0.038 |
| Quality | They apply BPM | 26.660 | 4 | 0.000 |
| | HACCP system applied | 12.023 | 4 | 0.017 |
| Relations | Belong to an association | 38.383 | 4 | 0.000 |
| Innovation | Develop innovation activities | 11.566 | 4 | 0.021 |
| Environmental | They carry out recycling | 11,842 | 4 | 0,019 |

Source: Authors' own creation

CONCLUSIONS

In the ten selected management areas, 60 analysis factors were identified and according to the assessment scale applied, the MSMEs of the food agribusiness in Boyacá obtained an acceptable degree of management with an average compliance of 64.5%. By areas, the best rating was for production and operations, finance and strategic planning, located in the category of outstanding management and average of 85.3%; then the area of human talent with a satisfactory degree of management and an average of 67%; It is followed by the areas with an acceptable degree of management, markets, information and communication technologies, quality and relations, and finally the areas located in the degree of insufficient management, which were innovation and environmental.


According to the hypothesis test, it is also inferred that management in 88% of the factors analyzed does not depend on the size of the company and 87% does not depend on the productive branch;



therefore, it was possible to identify by areas the key management factors in MSMEs of the food agribusiness in Boyacá, according to the results which require greater attention from the different stakeholders to design strategies for their improvement.

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