

Book Chapter

Which Factors Contribute to Innovative Performance? A Case Study Applied to the Food and Beverage Industry

Beatriz Corchuelo Martínez-Azúa* and Celia Sama-Berrocal

Department of Economics, Faculty of Economics and Business,
University of Extremadura, Spain

***Corresponding Author:** Beatriz Corchuelo Martínez-Azúa,
Department of Economics, Faculty of Economics and Business,
University of Extremadura, Avda. De Elvas, s/n., 06006
Badajoz, Spain

Published **April 07, 2022**

This Book Chapter is a republication of an article published by Beatriz Corchuelo Martínez-Azúa, et al. at Sustainability in November 2020. (Corchuelo Martínez-Azúa, B.; López-Salazar, P.E.; Sama-Berrocal, C. Determining Factors of Innovative Performance: Case Studies in Extremaduran Agri-Food Companies. Sustainability 2020, 12, 9098. <https://doi.org/10.3390/su12219098>)

How to cite this book chapter: Beatriz Corchuelo Martínez-Azúa, Celia Sama-Berrocal. Which Factors Contribute to Innovative Performance? A Case Study Applied to the Food and Beverage Industry. In: Magdalena Maciaszczyk, editor. Prime Archives in Sustainability: 3rd Edition. Hyderabad, India: Vide Leaf. 2022.

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Abstract

The agri-food industry plays an important role in the manufacturing industry in the Autonomous Community of Extremadura (Spain). The main objective of this study is to identify which business factors influence the success of the innovative performance in this regional industry. We proposed a novel theoretical model in which we analyzed the effect of six business variables. Using a multiple-case study, seven in-depth interviews were carried out to measure the level of importance that managers gave to each of the variables. The study validated the proposed model in which all the contrasted variables (Management, Strategy, Structure, Culture, Climate, and Market Orientation) had a great weight for the achievement of the innovative performance. The study contributes to the promotion of the capacities and competences of the agri-food companies' managers for the development of innovative activities favoring the knowledge, the external visibility, and the competitiveness of the companies. It is also useful for Public Administrations when developing policies to promote and encourage innovation in a sector of vital importance in the rural and regional development of this Spanish region.

Keywords

Innovative Performance; Innovation; Food; Agri-Food Industry; Case Study; Extremadura

Introduction

The agri-food industry groups a set of very heterogeneous activities, ranging from the first transformation of animal and vegetable raw materials to the production of sophisticated products such as functional foods. The importance of the agri-food sector goes beyond the quantitative indicators of economic activity and job creation. A whole series of variables interact in the sector and have a direct influence on society's well-being, in addition to the agents directly related to food production. The first function of the sector is to respond to the needs of obtaining enough food to meet the demands of citizens. Furthermore, food is

increasingly required to have certain characteristics that contribute to improving the health and well-being of those who consume it. The agri-food activity is distributed throughout the territory, and especially in rural areas, which helps to avoid depopulation and to achieve an adequate territorial balance. It also has a direct impact on the environment, playing a very important role in the sustainable management of natural resources and in the adaptation and mitigation of the effects of climate change.

In the 2019-2020 period, the food industry in the European Union is the main activity of the manufacturing industry, with a value of more than 1,205,000 million euros, representing 15.2% of the manufacturing industry. It has 291,000 companies that employ 4.82 million people and where small and medium-sized companies represent 42.7% of the total turnover [1].

In Spain, the food and beverage industry is the first industrial sector in the country and is an important driver of growth that contributes to the wealth and development of the Spanish economy. According to the Industrial Survey of Companies of the Spanish National Statistics Institute (NSI), the Spanish agri-food industry ranks fifth in terms of turnover with 9.5%, after France (16.4%), Germany (15.4%), Italy (12%), and the United Kingdom (11.9%). The food and beverage industry is the first branch of the industrial sector, with 113,593.07 million euros of production value, representing 24.8% of the industrial sector, 18% of employed people, and 15.5% of the value added. The number of companies amounts to 31,342, which represents 15.1% of the manufacturing industry. A total of 96.5% of companies have fewer than 50 employees, and 79.8% have fewer than 10 employees [2].

Extremadura, a region bordering Portugal, is extensive in surface (8.22% of the country), but sparsely populated (it represents 2.3% of the total Spanish population). Its 1,072,863 inhabitants are distributed with an average density of 25.7 inhabitants per km², compared to 92.3 in the rest of the country. The agricultural and food industry is one of the main economic activities in Extremadura and plays a key role in the regional

economy. The weight of the agricultural sector and its associated industries is substantially higher than the national average. However, despite their importance and role in the regional development, the Extremaduran agribusinesses suffer from chronic problems caused by a small size, local character, lack of business clusters, and little innovative activity [3].

The agri-food industry is undergoing substantial changes and needs to include innovation within its strategies, in addition to changing its products. On the one hand, the companies must adapt their products to the new consumers and the market's food demands, in order to be more competitive and differentiate themselves from other producers. On the other hand, they must adapt their organizational structure, and especially their marketing strategies, to gain competitiveness and adapt to the international markets, which implies changes in non-technological innovation. As in other industries, innovation (technological and non-technological) gives agri-food companies the possibility of generating higher incomes and increasing their productivity and competitiveness.

Based on this framework, the main objective of this study is to identify which business factors influence the success of the innovative performance in this industry. It is important to point out that this research comes from a previous study that examines innovation in the agri-food sector in Extremadura [4]. This raises the following questions: Does the type of management influence the companies' innovative performance? Does innovative strategy influence the companies' innovative performance? Does the organization influence the companies' innovative performance? Does culture influence the companies' innovative performance? Does the organizational climate influence the companies' innovative performance? Does market orientation influence the companies' innovative performance? To answer these questions, a multiple-case study methodology is used to analyze, from an organizational point of view, which elements contribute to the ability of companies to develop an innovative strategy. The study validates the premises of the proposed model, in which Management, Strategy, Structure, Organization, Culture, Climate and Market Orientation are factors that

determine Innovative Performance.

Regarding the factors that promote and drive the innovation development in companies, the study [5] classified the internal factors that are determinants of innovation. They highlighted the strategy, the organizational structure, the direction and leadership, human resources, and other factors such as technological capital and market orientation. According to several studies, the characteristics of the region are fundamental when it comes to promoting innovative activity [6–8].

Studies on innovation related to regions and regional innovation systems in Spain are diverse, although not numerous [9–11]. [9] analyzed the regional allocation of research and development (R&D) activities and their results, revealing that the existence of innovative companies is the most influential factor in the relative position of the Spanish regions and their interregional differences. [10] established a typology of regional innovation systems, and [11] explained the decisive factors generating innovation in Spanish regions.

Regarding the innovative activity of specific regions and their companies, various studies have analyzed regional innovation in Spain [12]. For example, [13] examined the capacity of innovation of small and medium enterprises (SMEs) in Andalusia; [14] focused on the study of the impact of the regional innovation system in the Basque Country; and in [15,16], the innovative activity of companies in Extremadura was analyzed. Some international studies also analyzed regional innovation systems, such as [17] for various countries; [18] in Portugal; [19] in Argentina. [20] also explained the variety of regional innovation systems and their institutional characteristics.

However, there are fewer studies focusing on the relation between the agri-food industry and innovation. Specifically, there is little research on innovation drivers, types of innovation, and innovation orientation, e.g., [21–23]. In the study [24] the lack of empirically proven studies on innovation in SME food companies was highlighted, and [25] indicated the lack of research on innovation orientation and its link with organizational

performance. [26] found that the driving factors of innovation in the Italian food sector could be identified as internal (endogenous) dynamics, which is important for the strategic behavior of companies. External dynamics were also found to be important, through responses to competition and reaction to high-tech products. [27] studied an innovation profile in the SME food sector in the United Kingdom. They explored the degree (radical or incremental), types of innovation (product, process, commercialization, and organization), and the innovative orientation (propensity to innovate). The study by [28] presented four in-depth case studies in the agri-food sector of different countries (The Netherlands, Germany, and France). Special attention was paid to how innovation agents have successfully organized SME innovation networks. Other recent studies on the agri-food industry are those of [29–31]. The study of [30] developed and validated a measurement instrument of innovation drivers that can be used by agri-food companies to adopt strategies for improving competitiveness and innovation. In Spain, in relation to the agri-food industry are the studies by [32–38]. Among the most recent studies, [38] carried out a characterization of the companies in this industry according to the obstacles to innovation. Some examples of recent studies on innovation in the Extremadura region are those of [3,39,40]. Specially, this study is based on a previous study [4].

The research aims to contribute to the existing literature by analyzing innovation in the agri-food industry, especially in a regional setting. Furthermore, another novelty in relation to the latest reviewed studies was to apply a qualitative methodology (multiple case study). Third, the study addresses a theoretical research gap through the proposed conceptual model since, to our knowledge, there are no studies that have analyzed more than two variables as determinants of innovative performance.

The outcomes of this study have important implications for both managers and public administrations. In this sense, the main contribution of the study is oriented, on the one hand, at the promotion of the capacities and competences of the managers of the agri-food companies for the development of innovative activities favoring the knowledge, the external visibility, and the competitiveness of the companies. On the other hand, it is useful

for Public Administrations when developing policies to promote and encourage innovation in a sector of vital importance in rural and regional development.

Moreover, the benefits associated with the study are linked to its innovative nature. The first objective of this study is to be relevant to the agri-food companies by providing advice in order to define organizational models aimed at carrying out innovative activities. In addition, from an economic point of view and its implications in the development of the region, it is relevant to understand the situation of innovation in the agri-food industry in order to establish public actions and to take measures to encourage this type of activity.

This paper is organized as follows: in Section 2, firstly, the research model is proposed and the premises of the study are established; secondly, the methodology (multiple case study) and the data used are analyzed; the main results are presented and discussed in Sections 3 and 4, respectively; finally, a conclusion is presented in the last section.

Materials and Methods

Both the economic and the organizational analysis coincide in highlighting the importance of innovation in the complex and changing world that organizations are currently faced with. “Innovate or fall behind: the competitive imperative for virtually all businesses today is that simple. Responding to that command is difficult, however, because innovation takes place when different ideas, perceptions, and ways of processing and judging information collide” [41] (p. 1). “Innovation has become the core pillar of achievement for every organization in the current business world. Fast-evolving technology, shorter product life cycles, and a higher rate of product development, possibly boost the speed of innovation, which triggers changes in the nature of economic development” [42] (p. 66). On the one hand, innovation is a way of avoiding obsolescence, responding to changing market expectations, and is a source of competitive advantage. On the other hand, innovation takes different forms, each one as part of a multidimensional, multidisciplinary, and

multifactorial process, as the product of an interaction within the organization and with its environment, in a permanent and non-linear way.

In effect, innovation is a complex activity in an organization, in which multiple variables intervene both internally and externally. It is a dynamic in which the internal and external aspects interact at the beginning and the end of the process. It is also an activity that must be considered as a deeply creative process, product, and mentality. Additionally, it seeks to satisfy internal needs in order to achieve better levels of efficiency and quality that result in greater competitiveness through better satisfaction of market needs.

Complexity is the result of a blend of learning, knowledge, creativity, and management. This combination fosters the use of both the company's own resources as well as external resources, thereby seeking to leverage the process of differentiation, with the aim of gaining a competitive advantage.

Therefore, there is a set of variables that intervene to make all of this possible: (i) a *Culture* that drives an adequate mindset [29,43–45]; (ii) a *Structure* that organizes work in a way that enhances human capital [46,47]; (iii) a *Strategy* that sets a course and establishes the “how to do” [48–52]; (iv) *Management* that acts proactively, not only creating appropriate internal conditions, but also external ones, in the management of complementary resources [53–67]; (v) a *Market Orientation* that establishes the environment-organization relationship as a source of ideas, recommendations, adjustments, and benchmarks [68–72]; (vi) and, finally, a *Climate* capable of creating the enthusiasm and commitment necessary to achieve the objectives [43,73,74].

Based on these variables, the following research premises were established according to previous research.

1. There is a positive relationship between Culture and Innovative Performance (P1);
2. There is a positive relationship between Structure and Innovative Performance (P2);
3. There is a positive relationship between Strategy and

- Innovative Performance (P3);
4. There is a positive relationship between Management and Innovative Performance (P4);
 5. There is a positive relationship between Market Orientation and Innovative Performance (P5);
 6. There is a positive relationship between Climate and Innovative Performance (P6).

In other studies, only a maximum of two of these factors have been set as determinants of innovative performance. The study [4] suggests that all these factors are important and have a joint influence on innovative performance and in this research aims to expand the sample. Figure 1 shows the components of the proposed model that aims to determine innovative performance.



Figure 1: Conceptual model of the factors that influence innovative performance.

In order to validate the established premises, the present study used a qualitative methodology based on a multiple-case study, which enriched the understanding of the investigated aspects to the extent that the triangulation of the results enabled us to achieve a more robust analysis. In accordance with [75] (p. 57), a qualitative research strategy “imposes a context of discovery and exploration”, a circumstance that fits our objective.

According to [76], this approach is appropriate because it fosters a broad understanding of the researched issue. Through case studies, the factors that influence innovative performance can be fully appreciated, and its attributes can then be widely understood through a simultaneous analysis of all its aspects. There are several categories of case studies [76] defines three categories: descriptive, exploratory, and explanatory. For this

study, the exploratory approach was adopted.

Before carrying out an investigation using the case analysis methodology, the theoretical framework of the investigation must be defined, and an exhaustive compilation and review of the literature related to the topic must be done. As a previous step, we reviewed the background from other researches, hypotheses, and experimentations, which will facilitate the interpretation and analysis of the data at the end of the study.

Another fundamental element of the design in this type of methodology is the type of sampling to be carried out. In our case, the sample was selected in order to identify notable agri-food companies according to their management and performance in terms of innovation. The aim was to look for relevant examples of good practices to later extend the generalization to any type of company.

For this purpose, a report (directory) of the Extremaduran agri-food companies was carried out. The information to prepare this report came from the cross-analysis of information collected from different databases (Spanish National Institute of Statistics, Extremaduran Agri-food Cooperatives, and Iberian Balances Sheet Analysis System) with the Spanish National Classification of Economic Activities code 10 (Agri-food Industry), 11 (Beverages), and 12 (Tobacco). From these sources, the companies were analyzed, and according to the data available at the time, some companies were found to be duplicated, extinct, without activity at the time, or with incorrect contact information. This information was collected and completed with information from their own webpages. The report contains data from a total of 734 agri-food companies. It summarizes information on the name of the company, legal form, general contact information, number of employees, and whether they carry out innovative activities, in addition to inform if they have received public financial aid related to innovation. At the end of the report, they were categorized based on the classification of their activities. Thus, we decided which companies could join the case study, and established contact with the preselected companies, informing them of the general ideas of the research study.

A fundamental element of the research design in this methodology is the preparation of the semi-structured interview

[13]. For this, and after reviewing the background of this research, a script/protocol with questions related to the variables was prepared of the model proposed in the previous study developed [4]. The interview protocol is divided into the following blocks: Block I. Sector, competition and innovative dynamics (questions referring to the competitive environment and intensity; changes in the sector; innovation; innovative dynamics of the company). Block II. Proposed factors (questions that allow knowing what innovation management is like; innovative strategy; organization structure; business culture; market orientation; organizational climate; other variables that the interviewee considers important to achieve the success of innovative performance in their activities). Block III. Obstacles to achieving the objectives of change and/or innovation and finally, Block IV. Actions that sue public administrations. The details of the aspects contemplated in the protocol can be consulted in [4]. Given the exploratory nature of the qualitative studies, neither the researchers nor the interviewees knew the totality of the information that they had to provide and collect. For this reason, the protocol was sent to the selected companies before the interviews.

Once the cases were selected, the interview was carried out and the relevant information obtained in the responses was collected. We also used other secondary information that would allow the study to be completed (date on which the interview took place, the position of the interviewed person, organization address, duration, and the method used). The Table 1 shows the main characteristics of the seven companies that make up the sample.

Table 1: Characteristics of the sample.

Company	Activity	Foundation	Employees	Turnover	Export
Company A	103	1976	600	>10,000,000€	√
Company B	103	2015	5	0-500,000€	√
Company C	104	2017	3	1,000,000-2,000,000€	√
Company D	110	2017	3	0-500,000€	√
Company E	110	1982	10	1,000,000-2,000,000€	√
Company F	109	1985	70	>10,000,000€	√
Company G	103	1985	110	>10,000,000€	√

¹**Note:** 103 (Processing and preserving of fruits and vegetables); 104 (Olive oil manufacturer); 109 (Manufacture of products for animal feed); 110 (Wine

manufacturer).

The contact with the seven companies and the interviews started in late February 2020. Table 2 shows the date, the place, the interviewee’s position, and the duration of the interviews. The interviews were recorded with the permission of the interviewees.

Table 2: Sheet of interviews conducted.

Companies	Date	Place	Interviewed	Duration
Company A	28 February 2020	Main office	CFO	1.5 h
Company B	9 March 2020	Main office	CEO	1.5 h
Company C	13 March 2020	Main office	CEO	1.5 h
Company D	8 June 2020	Zoom	CEO	2 h
Company E	18 June 2020	Zoom	CEO	2 h
Company F	06 July 2020	Zoom	CEO	1h 15m
Company G	15 October 2020	Zoom	CEO	55m

According to the objectives and the methodology established in the project, the first three interviews were carried out at the main office of the company. On March 14, 2020, the State of Alarm was decreed by the Spanish government due to the COVID-19 pandemic that affected both the companies involved in the study and the project itself. In our case, from that date, it prevented the interviews from being conducted at the company’s physical location. Once the lockdown measures were eased to phase 2 in Spain, the companies were contacted again, and in this case, the interviews were conducted through Zoom videoconferences.

Finally, to analyze and interpret the information, an initial coding framework for the interview transcripts was developed. The data obtained through the literature and the interviews allowed the coding and analysis of the cases. Finally, the functional-structural analysis was carried out after revisiting the literature again.

Results

The main results of the case study carried out are presented below.

Strategic Dynamics and Management

- COMPANY A: Processing and preserving of fruits and vegetables

Due to the characteristics of the sector and the magnitude of its production, company A moves within an environment in which competition is not very intense. It is a mature sector, in which the organizations are constantly growing, resulting in the existence of only a few large firms.

However, the entry of new producers in the market generates some concern, especially because they may have different treatments for their products.

In summary, the characteristics of the sector lead to a higher competitive intensity at the international level than at the national level.

Working as a team with all the area and production plant directors, the Chief Executive Officer (CEO) creates a climate in the organization in which emotional intelligence prevails; there is permanent horizontal and vertical communication, which means that, despite the size of the group, coordination is successful.

All this dynamic is punctuated by a culture that, through the search for excellence, drives up the levels of competitiveness, dynamism, and innovation necessary to maintain the high standards required to consolidate its competitive position, both nationally and internationally.

After the expansion, the company is at a stage of consolidation, centralization of information, and decision.

Their market orientation also implies to maintain the links of collaboration and support to their customers and suppliers. The company responds, with their innovative dynamics, to the constant demands of their environment. They also monitor the movements of the competition, leading it to structure appropriate

responses to achieve a sustainable competitive advantage.

- COMPANY B: Processing and preserving of fruits and vegetables

Company B is a small company with a wide range of tomato products: dried tomato, tomato powder, smoked tomato, “salmorejo”, and “gazpacho” powder. The novelty of its products is at the consumer level (supermarket shelves). However, the lack of information of the products’ properties is considered to be the main obstacle for its commercialization, followed by the difficulty of accessing the broad-spectrum distribution channels. To avoid these difficulties, the company opted to digitize part of its commercialization. Company B developed an innovation strategy that involved the production and marketing of tomato powder in small quantities for domestic use. The need to take advantage of this market gap was detected, where tomato powder could be used as another condiment for daily use in the kitchen, similarly to paprika or salt.

The organization has faced a series of difficulties since starting its industrial activity, which caused changes in its innovation strategy. It is difficult for the consumers to understand and accept the use of their product as another seasoning. This made them focus their efforts on investing in marketing and advertising, allowing them to later relaunch their products.

Another mechanism adopted in its novel approach is to adopt the “pull system” (launch the process of creating value from orders).

The international presence of its products through Amazon reaches France and Germany. In the interview, the CEO first said that they had no competition, although later he changed his opinion, and said that their competition came from substitute products and that, in this sense, they face great competitors.

Throughout the process of redefining the company’s innovative strategy, the figure of the manager adds value, even if the role that this management has in a delocalized and practically virtual company is different from other companies, using different tools and mechanisms.

Company B has a matrix structure. Responsibilities are spread across departments and people, allowing the information to be accessible to all areas. It is also important that the employees develop a commitment culture within the organization, where a good work climate prevails.

Company B's market orientation is to create and understand the relationships between its customers, suppliers, and competition, responding to the innovative dynamics the market needs.

- COMPANY C: Olive oil manufacturer

As a small young company, Company C is oriented to a market segment where facing the great generalists is avoided by applying a focus strategy. Nationwide product distribution is done on-line, in gourmet stores, and in some supermarkets, not in large chains such as Mercadona or Carrefour.

Nevertheless, its market niche does not have a high price elasticity and the company leans towards a high-quality oil: the extra virgin olive oil. This strategy is accompanied by the internationalization of the product, which not only offers superior quality but is also an ecological product that generates 50% of the company's sales.

These markets not only expect superior quality (with its extra virgin olive oil), but also the health benefits, and the firm is developing another of its product variants through exogenous research. One of its innovations is the olive oil to be used as raw material in cosmetics. Its research process involved the universities of Madrid and Valencia, some Extremaduran private and public companies, and the University Hospital of Badajoz, through the dermatology department.

Therefore, the importance of innovation is crucial for the company, although the time involved in the investigation process stands out as a major obstacle.

All of this has been made possible thanks to the teamwork within the company. And guided by a strategy that sets the future

direction of the company.

- COMPANY D: Wine manufacturer

Company D is a family business. It is a recent winery, whose origin comes from the lifelong interest and desire of the father of the family. For a long time, like most of the farmers in the region do, the family delivered the grapes to cooperatives or private wineries. However, the father instilled in the children an interest in wine and winemaking as a business. When the father died, the family considered starting the project of setting up a winery. Initially, only two brothers worked in the winery, but when their mother retired, the interviewee also joined the company.

At that time, the entire bottling project began to take shape. They decided not to sell the wine in bulk anymore and started making their own wine. In 2017, Company D was born as an employee-owned company made up of three brothers and they began to manufacture and bottle their own wine. Each brother has defined his role and responsibility within the company, although there is collaboration in all aspects that do not require much specialization.

The company innovates to carve itself a place in the market despite the great competition. The innovation was brought on by the market conditions that demanded a sweeter type of wine, difficult to produce in an ecological way. So, they began researching to achieve different and totally organic wines. Currently, they have a limited range of wines (white wine from the Cayetana grape, native to Extremadura, and Tempranillo red wine, from a national grape). Two of their wines include innovations: white wine with “aloe vera” and red wine with “reishi” (a mushroom with beneficial properties). The company has a clear attitude to promote innovation in order to evolve as a company and differentiate itself from the competition. They constantly look forward to doing something new and different, and this implies continually researching and seeking new opportunities.

The company has also started an internationalization process,

with clients in the UK and Belgium, along with bulk sale in Portugal. They also have multi-portfolio collaborators in different parts of Spain to sell their products.

There is no formal strategy in the company. However, actions are planned with the aim of meeting sales objectives, in addition to promotional tasks, and working on product innovation.

A lot of dynamic changes are observed in the sector, mainly in the sales channels. In this sense, the company requires a specialized professional to carry out the online marketing, which consists not only of online sales but also of a set of actions to achieve a good positioning.

Given the current situation caused by the COVID-19 pandemic and the interruption of their activities, they have sought new means to make themselves known to their clients, such as the development of an online tasting that brought together more than one hundred people, and for which the company has achieved recognition.

Its market orientation seeks online positioning through marketing, that the company understands as a set of many actions in which they are being trained and assisted by professionals, as a way of differentiating themselves from their competitors.

- COMPANY E: Wine manufacturer.

It is a family business, dedicated to producing quality wines for several generations. Its strategy is not only to produce quality wines, but also to develop and promote the culture of wine, for the consumer to know and grasp the concept of well-being associated with the winery.

The wine sector is a traditional sector with great dynamism, where the main changes are introduced by young wineries. It is also a sector characterized by intense competition. There are 4300 wineries and 96 Designations of Origin only in Spain, making it necessary to develop strategies that lead to market

differentiation.

The organization seeks to differentiate itself in the market and professionalize the company. In recent years, some improvements to their industrial facilities have been made, allowing them to improve processes within the winery. They also included management systems, improvement of the corporate image, and new products.

Currently, the firm focuses its efforts on opening the market at a national and international level, despite the difficulties that the company has encountered while doing so.

In 2006, they decided to diversify their activities by opening a restaurant within their facilities. In this way, they materialized their growth and the diversification of their activities, promoting the culture of wine through the preparation of tastings, pairings, events, and ecological routes within their facilities. In 2019, they included a sparkling wine in their products. The sparkling wine market is growing, and the profit margins are higher than those provided by still wines. To make this Brut Nature, they made a significant investment, the construction of a winery valued at €1,000,000.

In the strategic dynamics of the company and throughout the innovative process, the manager is the main actor, in charge of guiding the strategy of the company, promoting the culture of wine within the organization, organizing the structure of the company and its market orientation.

Company E is structured in specific departments and functions, where the work environment is essential for the development of an innovative culture and the commitment of workers.

The organization develops internal communication within all areas of the organization. It also maintains contact with its customers and suppliers, which helps them understand their needs and demands. He watches his competition to know what they are doing, although he claims that not as much as he would like, due to the lack of resources.

- COMPANY F: Manufacture of products for animal feed

It is an Agrarian Transformation Society (ATS) dedicated to the marketing and processing of a wide range of products including tomatoes, cereals, oil, rice, compound feed, seeds, fertilizers and plant protection products.

The very characteristics of the agrarian sector, conservative and traditional, make the innovative dynamic a marginal process, where the innovations introduced have previously been developed in other industrial sectors and finally adapted to the needs of the agricultural sector. In addition, the innovative dynamic of A.T.S is not endogenous, but relies on the collaboration of other partner companies, organizations and research centers to carry out their innovation activities. The main innovations developed focus on the introduction and use of new technologies that facilitate the control and mechanization of production, the use of fertilizers and fertilization techniques more sustainable and respectful of the environment, research into more natural veterinary medicines and finally diversifying production to reduce risks.

The whole activity is focused on meeting three objectives. First, to make the activity carried out by its members profitable. At the same time, provide advice and guidance to partners. And finally, to ensure that their products are marketed under the best possible conditions.

However, factors such as the ageing of the population in the sector, the climate, high production and labor costs and the instability of prices in the market make it difficult to implement a formally defined strategy, documented and structured that marks the direction of the organization.

To achieve success in innovation activities within the organization it is necessary for management to be involved. Within the organization the structure is formally defined through an organizational chart with departments, specialties and functions that are carried out in each of them, where the

existence of a good working climate and the involvement of the company's staff are very important to achieve the objectives of the organization.

In Company F both management and technical staff are constantly traveling and seeing the needs that the market demands. They maintain a very good relationship with their competitors, and this is not very intense. In addition, they do not monitor it directly, but it is their own customers who inform them to get their own benefit.

Finally, the relationship with its customers is close, transparent and demanding. They have three types of customers that are, their partners, external customers to whom they treat by offering them the same conditions of purchase as the members of the A.T.S allowing them to guarantee their loyalty, and finally, the final consumer, which is the one that consumes its processed products.

- COMPANY G: Processing and preserving of fruits and vegetables

The strategic dynamics and management of Company G are guided by the characteristics and form of incorporation of the company, second-degree cooperative society, which seeks to guarantee the profitability of the activity of its members and remain the economic engine of the area promoting the brand "Valle del Jerte".

There is a lot of competition in the fruit and vegetable sector. At the local level it is run by other companies in the area. At the national level they compete with Aragon and, finally, internationally with other producing areas, where Turkey and Chile stand out. However, the competitors that most affect them are those countries that produce outside the European Union and have cheaper labour costs.

It is also characterized by being a dynamic sector, where changes in the market are perceived faster than in the field. In addition, the strong traditional character of the field, the sentimental component associated with it and the risk aversion of its farmers are other

particularities of the sector.

Since its creation in 1986, this company has not established a formally defined strategy, but has been adapted according to the internal characteristics of the company and the sector, together with market demands. The result of the strategy adaptation process can be reflected in the company's internal activities. In the beginning, they only carried out marketing activities for the products of their partners, such as cherries, chestnuts, dried figs, plums and berries. Later and on a small scale, he began processing activities in his mill and distillery. Already today, they also transform part of their products, as happens with fruit jams, although for this they resort to the outsourcing of the activity.

Although Company G does not have a formally defined strategy, it does design a strategic plan that includes what objectives to achieve. One of the lines included in this strategic plan seeks to enhance the shelf life of their products to market them in more distant destinations.

The other line is to look for an alternative to the by-products they get from their activities.

To achieve its objectives, the role of management is fundamental and brings value to Company G. Management, on the one hand, acts as a link between the market and farmers, to convey what are the market demands and, is also the driving force behind the innovative culture within the organisation.

In the company, having an innovative culture that has the commitment and involvement of the people who are part of it also brings value, and is indispensable for innovations to be successful.

As a result, they have developed an open innovative dynamic through the internal collaboration of their workers and supported by research centers. The innovations are mainly focused on optimizing their processes looking for machinery that allows them to gain versatility and have a competitive advantage in their fruit plant compared to other producing areas, such as Aragon. The structure is formalized in management and 7 departments. Within them are the directors of departments and operators, where each

one has their functions to develop. The existence of a good climate of work and collaboration between the areas favors those ideas arise and innovation is encouraged.

Its market orientation fosters communication and collaboration links between suppliers, customers and competitors. Although its form of constitution makes the farmer is not in direct contact with the market. For this reason, the company combines its efforts in transferring the reality of the market to the rest of the organization and leaving behind the mentality adverse to the risk of its farmers.

The main obstacles that Company G must develop its innovative dynamic are the time of development too long, having a risk-averse culture and the absence of control measures. But excessive bureaucracy in administrative procedures also makes them difficult.

Cross Analysis of the Cases and Variables of the Proposed Model

Regarding Innovative Performance

COMPANY A: Technological innovation to optimize the processes. Furthermore, the company develop non-technological innovation improving their organizational management and commercial mechanisms.

COMPANY B: Technologic a small young company, develops and patents new products, as well as innovation in marketing through the packaging of its products and its online marketing and management system.

COMPANY C, one of the most dynamic, develops through open innovation with the academic, public, and private business sectors, a new raw material for the cosmetics sector, in addition to products such as olive leaf tea. It also innovates in marketing, catering wine tourism, and strategic marketing mechanisms for their products.

COMPANY D: Develops product innovations, differentiating itself with unique products in the market and by innovating in

marketing through “virtual tastings” with its clients, achieving the positioning of its products both nationally and internationally.

COMPANY E: Technological innovation to bring new references to the market and improve agro-industrial processes that increase the useful life of your product. It also develops non-technological organizational innovation and improves image and market positioning techniques through marketing innovations.

COMPANY F: Technological innovation to improve your processes that allow you to improve performance and reduce costs and prices.

COMPANY G: Technological innovation to improve its products and processes, allowing them to extend their useful life and providing an alternative to the by-products of their activities.

Regarding the Variables of the Model

The variables proposed in the research model were validated formally, or informally in the case of the relatively smaller organizations.

This is how all the premises were positively valued as determinants of innovative performance by all the participants in the multiple case study (see Table 3).

P1. There is a positive relationship between management and innovative performance: validated. Management that acts proactively in the handling of complementary resources, not only creating appropriate internal conditions, but also external ones.

P2. There is a positive relationship between strategy and innovative performance: validated. A strategy that sets a course and establishes the “how-to”.

P3. There is a positive relationship between culture and innovative performance: validated. A culture that encourages the right mindset.

P4. There is a positive relationship between structure and innovative performance: validated. A structure that organizes work in a way that enhances human capital.

P5. There is a positive relationship between climate and innovative performance: validated. A climate capable of creating the enthusiasm and commitment necessary to achieve the objectives.

P6. There is a positive relationship between market orientation and innovative performance: validated. A market orientation that establishes the environment-organization relationship as a source of ideas, recommendations, adjustments, and benchmarks.

Table 3 summarizes the most relevant aspects of the results of the case study.

Table 3: Results of the case study.

<p>Management</p> <p>COMPANY A: <i>“Management is essential and having trained, motivated people with emotional intelligence.”</i></p> <p>COMPANY B: <i>“The one who leads the dynamics of innovation is management, coordinating and delegating tasks.”</i></p> <p>COMPANY C: <i>“Management is the starting point of all action. I told myself I need a manager who will help me get all this up and running.”</i></p> <p>COMPANY D: <i>“As of 2017, I began to shape the bottling project and that is when Bodegas XX was born as an employee-owned company, shaping the commercial and marketing part”.</i></p> <p>COMPANY E: <i>“Without the manager’s involvement it is impossible to develop any corporate innovation . . . ”.</i></p> <p>COMPANY F: <i>“Management gets involved so that all the innovation processes are carried out because if not, they don’t come out”.</i></p> <p>COMPANY G: <i>“Management is important [...] Right now I’ve been here for 2 years. In these two years I have already identified the people who are participatory, who propose and in the end they are people with whom I count and I sit down to see what they propose and if we can carry it out. So I don’t consider myself a promoter of innovation, I support that innovation, even if I don’t get so involved in development”.</i></p>
<p>Strategy</p> <p>COMPANY A: <i>“There is a document that guides the strategy of the company; The Mission is ‘to be a benchmark in the tomato sector’ and the vision is known, we have a SWOT and so today, because we act”.</i></p> <p>COMPANY B: <i>“Strategic planning, defining where it is going to add more</i></p>

<p><i>value</i>".</p> <p>COMPANY C: <i>"As a manager I am in charge of planning and we are trying to follow a strategy. The strategy is defined as formally as I can. I define the strategy formally, but another thing is if we can implement it"</i>.</p> <p>COMPANY D: <i>"The company, which is us, has not established a formal strategy. I have a long-term goal, not short-term. And my older brother also has a long-term goal."</i></p> <p>COMPANY E: <i>"We do documents every year, it is a business plan, which can be considered a strategic plan"</i>.</p> <p>COMPANY F: <i>"There is always strategic planning, but we do not have it formally embodied on paper"</i>.</p> <p>COMPANY G: <i>"[...] as in innovation we don't have that structure or that formal planning because perhaps at the end of the year we realize that we should have focused more on some things and less on others"</i>.</p>
<p>Structure</p> <p>COMPANY A: <i>"Specialization is important as long as there is communication between the areas. The departments must be interacting; we have committees in which the heads of each area from other factories come"</i>.</p> <p>COMPANY B: <i>"The structure is a matrix [...] It gives you strength, because the information is accessible and all workers can respond, although we still do not have a registration, we have a documentation system on which we act, to be able to see who has done what"</i>.</p> <p>COMPANY C: <i>"We are three people working, one is more focused on production, another on administration and accounting, and finally I am dedicated to the management of the company and innovation. As we are less now, we have to do a bit of multitasking."</i></p> <p>COMPANY D: <i>"Everyone has their role, but we help each other. Teamwork is very important"</i>.</p> <p>COMPANY E: <i>"In the wineries we work 10 people and in the restaurant 5, and if you count the people who work in the fields, we would be about 25 people in total"</i>.</p> <p>COMPANY F: <i>"There is an organizational chart, some departments and specialization by people"</i>.</p> <p>COMPANY G: <i>"We have a formal structure. I am the general director and below me I have 7 directors who head the departments, financial, commercial, operations, quality... and within the operations department there is a person who is responsible for R&D"</i>.</p>
<p>Culture</p> <p>COMPANY A: <i>"Culture is the engine that influences the organization. Human resources have to work so that all employees follow the culture and the company values"</i>.</p> <p>COMPANY B: <i>"It is important that there is a culture"</i>.</p> <p>COMPANY C: <i>"Within our company we have innovative and investigative dynamics, that is our gene, to add value for the client and solve their problems, these are fundamental aspects that guide our behavior"</i>.</p> <p>COMPANY D: <i>"Values that prevail in the company are wanting to evolve, differentiate ourselves from the competition, do something new"</i>.</p> <p>COMPANY E: <i>"We seek excellence, to make things better every day and we try to improve and make a place for ourselves in the world of wine"</i>.</p>

<p>COMPANY F: <i>“The people who work here are quite flat and we like to pass on our successes, because the employees have to be motivated.”</i></p> <p>COMPANY G: <i>“Here it is essential that this culture exists and that the workers get involved. That knowledge they have at the bottom of the line is where most of our improvements come from. The greatest added value comes internally from the ideas of our people”.</i></p>
<p>Climate</p> <p>COMPANY A: <i>“The climate is very important. A 5 on a scale of 1 to 5, because who does not work on it is lost”.</i></p> <p>COMPANY B: <i>“The work environment is essential that for there to be good communication and a feeling “that creates a good work environment”.</i></p> <p>COMPANY C: <i>“A positive work climate is essential”.</i></p> <p>COMPANY D: <i>“Teamwork is very important. Communication is essential”.</i></p> <p>COMPANY E: <i>“The climate is fundamental, if you do not have a good working environment within the company, it is very difficult for innovation to emerge, it makes the workers commit”.</i></p> <p>COMPANY F: <i>“The good work environment is fundamental”.</i></p> <p>COMPANY G: <i>“It is important to create a good work environment, where, even if there are frictions, you can turn the page, sit down and collaborate on whatever is needed, because if everyone goes their own way, in the end the company loses”.</i></p>
<p>Market orientation</p> <p>COMPANY A: <i>“The core value that drives the company is customer orientation, we focus on our customers, seeking to achieve the perfection that the customer wants; you have to make all departments aware of that”.</i></p> <p>COMPANY B: <i>“Market orientation is important for the company to be viable”.</i></p> <p>COMPANY C: <i>“The customer is fundamental. We need information from our customers to know what products to put on the market. We always try to provide feedback to our clients. You are also seeing and analyzing what others are doing... what you have to do is add value for the customer, and in the end to solve the problems that the consumer has”.</i></p> <p>COMPANY D: <i>“Even if you hire the best communicators and if you are not solving a problem for the client, if the client is not aware that they have a problem, nor are you showing it to them, then you are not going to succeed.”</i></p> <p>COMPANY E: <i>“We have two people in the commercial department, who are constantly traveling and moving abroad, seeing what the market needs are, seeing what the consumer is asking for and trying to meet their expectations.” “In relation to the competition we do not monitor the competition as much as we would like to, due to the lack of resources”.</i></p> <p>COMPANY F: <i>“We are continually reading, seeing, being in contact with many people, we travel a lot and see what problems they have in other places and how the sector is”.</i></p> <p>COMPANY G: <i>“[...] From the cooperative we have to transmit to our partners and let them know how the market is moving so that they know that there have to be changes and which are the most suitable varieties”.</i></p>

Discussion

The purpose of this study was to analyze the influence of six

variables in the innovative performance of companies. Based on a multiple-case study, seven in-depth interviews were carried out to measure the level of importance that managers gave to each of the variables of the proposed model. We found that all the contrasted variables (Management; Culture; Structure; Strategy; Market Orientation; and Organizational Climate) had a great weight for the achievement of the innovative performance, all six of the proposed premises having been validated.

Innovative Culture, Organizational Climate, Strategy and Structure

Our findings are in line with the studies of [43,44]. In both of them, a multivariate model was proposed to explain the innovative performance in companies. The study by [43] outlined that the contextual factors related to the Organizational Climate and the Innovative Culture are vital for the success of the company, adding that the biggest performance is positively related to higher levels of Innovative Culture.

Culture, Organizational Climate, Strategy, and Structure are variables of vital importance for the achievement of the innovative performance. The first one (Culture), is the driver of the action oriented at innovating. It is fed by a clear definition of the vision and the mission of the company (Strategy), the way the work is organized inside the firm (Structure-flexibility), and the establishment of support mechanisms (rewarding the success and the recognition). This combination of factors is contained in the model proposed by [44] and validated through a quantitative study in the textile sector, with a sample of 287 companies, demonstrating the influence of the model's variables on innovation.

Another important issue is that the level of formalization of the strategic process was higher in the bigger companies than in the smaller ones, although these maintained a similar approach in general. The most important difference might be the way the reference documents are treated on a day-to-day basis. Nevertheless, although the processes are not formalized within the organization, they are considered key in the projection of actions to reach the proposed objectives, considering the importance of flexibility and the appropriate adaptation to the

characteristics of the environment.

This finding coincides with the studies of [49,52]. The first study [49] compared this aspect to the contingent character of the strategy. The second one [52] contemplated the necessity of the structuring a cooperative dynamic and a flexible strategy. In our case, both recommendations are present in the interviewed companies.

Management and Market Orientation (MO)

Management is the driver, the catalyst, and the guide of the action, as well as being the center of the decision-making process. It is also the center of coordination both inside and outside the organization, assigning resources, giving guidance, and balancing the flows of resources in the ecosystem of which the organization is a part.

Management plays an important role in the identification and impulse/support of the product and process innovation complementarities [66]. Management not only responds to contingencies because of the dynamism of environmental or competitive intensity, but within its multiple responsibilities are also the management and coordination of the alliances and knowledge acquired from these [54]. Success mostly resides in the ability to manage these alliances; without a complete understanding of how they should be managed, companies could lose the opportunity offered by this kind of cooperation. Regarding the innovation ecosystem, its complexity is due to the diversity of agents and the geographical diversity. In this sense, [58] found a positive correlation between the different types of linked organizations and the innovative performance, explaining that the role of the manager is important, not only regarding the solidification of the links, but also in creating the necessary absorptive capacity in open innovation. [67] refers to another important function of management, highlighting its importance through the validation of the hypothesis that a positive association exists between transformational leadership exercised by management and organizational innovation. This management style emphasizes emotions, values, and it stimulates creativity in employees, establishing a participative and

collaborative management.

If Management is the action that orders all processes inside the organization, Market Orientation (MO) is the source that maintains the internal and external dynamics of the organization. MO facilitates the interaction with the buyer, the competition, the information administration, and the internal coordination (cross-functional coordination), focusing on solving problems and opportunities that are perceived in the environment.

The importance and positive relationship of MO with the innovative performance was perceived through the interviews of this study, coinciding with the findings of [71], who used a sample of 190 actors in the value chain of cattle-raising to measure the relationship between MO and innovation (the innovative performance). This study showed that there is no positive relationship between MO and financial performance. However, if there were a positive relationship between MO and cross-functional coordination and, in turn, a positive relationship between the cross-functional coordination with innovation (innovative performance), then there would also be a positive relationship between innovative performance and financial performance.

On the other hand, [72], when referring to the importance of the variable MO in a firm's performance, concentrated only on two factors: The client orientation and the competitor orientation, as a source they called Market-based Innovation. This is a better criterion for small business and its dominant informality, since it ignores the coordination between functional areas, and rather emphasizes the development of competencies based on Customer Knowledge and Competitor Knowledge, resulting in an innovation adjusted to the market reality. The authors concluded that the ability to generate and use knowledge about your customers and competitors increases the performance through market-based innovations.

The results of this study show, as a main contribution to the reviewed studies, the joint importance of all of these variables on the innovative performance. The research explored and validated an issue that has not been developed previously. The six

variables of the theoretical model (Innovative Culture, Organization, Strategy, Structure, Management, and MO) positively influence the innovative performance of the agri-food companies. It is important to highlight, however, that the level of formalization of the variables responds to the size of the organization. Nevertheless, neither the process informality nor the design diminishes the key role that all the variables play in the achievement of innovative performance.

Conclusion

The multiple-case study carried out has shown that there is a positive relationship between the factors proposed by the research model and innovative performance [4]. The level of clarity and formalization of each of the factors is manifested as a function of the size and level of formalization and professionalization of the different companies.

The results conclude on the importance of Management in achieving innovative performance. Management must assume a crucial role, not only focused on the dynamics of the response to its business environment, but also on the creation of a work environment that enhances creativity. Therefore, Management has to act on multiple levels that provide feedback on the results of the action that is being carried out. Thus, the interaction with the Market Orientation and the vision embodied in the Strategy (objectives and procedures) must be completed with the generation of an internal balance necessary to achieve the expected achievements (Culture, Climate, and Structure).

The research, by expanding into other aspects, discovered the criteria of the interviewees. They considered that other variables should be taken into account to enhance innovative performance, especially the variables “training” and “attitude”, to contribute to greater solidity and dynamism in the generation of results. Finally, several aspects were also highlighted as possible obstacles to innovative performance, such as: failure to choose a correct market-oriented idea; more innovative competitors; lack of profitability in the project; too long development times; having a limited view of your client; lack of coordination;

marketing and communication; a risk-averse culture; lack of support from public administrations; lack of funding or lack of staff training.

Likewise, aspects related to the dynamics of the public sector in its role of supporting the innovation of companies were pointed out, demanding the reduction of bureaucratic procedures and the increase public financial aid.

As managerial implications, this study contributes to the promotion of the capacities and competences of the agri-food companies' managers for the development of innovative activities favoring knowledge, external visibility, and competitiveness. Specifically, and based on the results obtained, the management should establish objectives and formal or informal procedures that guide the innovative action of the company. In the same way, the management should develop a climate that encourages people to innovate by providing solutions to customer needs, as well as increasing their commitment to the organization, thus allowing the achievement of their strategic objectives. Contact with customers is essential to know their needs and to be able to respond to them through innovation. Finally, to achieve an internal coordination that allows collaboration and teamwork.

This study had a significant research limitation. As a consequence of the state of alarm decreed by the government in Spain in March 2020 due to the pandemic caused by COVID 19, only three of the interviews could be conducted at the company's headquarters, as recommended by the methodology of case study. The last two interviews were by video conference because of the recommendation to avoid human movement between municipalities. This fact also limited the number of companies interviewed. Nevertheless, the results obtained using this methodology give an approximation to the reality that, in future research, it is going to complete through a quantitative study that will validate the theoretical model.

Acknowledgment: This research was financed by the Junta de Extremadura (Spain) and European Regional Development Fund grant number IB18040 and GR21134 (SEJ022-Research Group INVE).

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