



Article Place-Branded Foods with Responsible and Sustainable Management: A La Carte Serving in Regional Restaurants

Celso Lopes ^{1,2}, João Leitão ^{2,3,4,*} and Juan Rengifo-Gallego ¹

- ¹ Departamento de Arte y Ciencias del Territorio, Facultad de Filosofía y Letras, Universidad de Extremadura, 10003 Cáceres, Spain; celso.m.lopes@gmail.com (C.L.); irengifo@unex.es (J.R.-G.)
- ² NECE—Research Center in Business Sciences, University of Beira Interior, 6201-001 Covilhã, Portugal
- ³ Department of Management and Economics, University of Beira Interior, 6201-001 Covilhã, Portugal
- ⁴ CEG-IST—Centre for Management Studies of Instituto Superior Técnico, ICS—Instituto de Ciências Sociais, University of Lisbon, 1649-004 Lisbon, Portugal
- Correspondence: jleitao@ubi.pt

Abstract: This study assesses whether the association of place-branded foods and the adoption of responsible and sustainable management practices (e.g., quality management, environmental management, and corporate social responsibility) influence the financial performance of regional restaurants linked to the land of origin. The data collected from 265 regional restaurants located in the Centre Region of Portugal allowed estimation of a selected set of discrete-choice model specifications, namely, probit, logit and generalised extreme value regression models. The empirical findings reveal that the use of place-branded foods increases the demand for regional restaurants, which positively influences their financial performance. In addition, responsible sustainable management practices such as collaboration with customers to improve products and services, quality and safety control, choice of organic foods, commitment to maintaining jobs and cooperation with the community reveal a positive and significant influence on financial performance. Conversely, the results show that the use of origin certification in marketing and advertising campaigns and improvement of the restaurant's image through the use of place-branded products have a significantly negative influence on regional restaurants' financial performance, considering the pandemic crisis and the additional costs associated with this differentiation procedure.

Keywords: land of origin; place branding; regional and local development; sustainability; sustainable management

1. Introduction

The UNO's Sustainable Development Goals (SDG) [1] as global objectives have contributed to increasing consumers' and producers' collective and individual awareness of global social and environmental issues, which require a common response by national governments and the respective public administrations, non-governmental organisations, companies and citizens [2].

Sustainable development is intrinsically linked to regions and territories, which are naturally associated with agriculture and gastronomy. In this line of thought, it is worth underlining that gastronomic tourism has taken on great importance in the process of generating value in the context of rural economies. It is shown to be fundamental in promoting rural regions' identity, based on territorial brands and communicated through images related to differentiated food and drink connected to the area [3]. Many countries have used concepts related to differentiated food and drink as powerful mechanisms for the branding of some rural territories (e.g., [4–6]).

As a consequence of the restructuring of European rural economies, in many regions and territories, food and gastronomic heritage is being used to strengthen their identity, in order to attract investment and tourism, which can function as a complement to, or a



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Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). partial substitute for, existing agricultural activity [7]. In many cases, initiatives to develop these territories seek to provide benefits for both tourism [8] and sectors of the agri-food industry, creating and strengthening supporting economic links between them [9]. In this way, agri-food products and drinks of exceptional quality can be used to improve the general image of tourism in a rural region as well as visitors' experience [3,10].

The European Union (EU), with Regulation (CEE) n° 2081/92 [11] at the beginning of the 1990s, created Geographical Indications (GI) for quality agri-food products, providing a first instrument able to protect the uniqueness and value of these foodstuffs. These can serve as a valid driver of sustainable regional development [12] and the sustainability of rural territories. The official database of GI in the EU (eAmbrosia) contains 3.401 GI of agri-food products, of which 1.520 are agri-food and food products, 255 are fortified drinks, 1.621 are wines and 5 are aromatic wines. The majority of these products originate in Mediterranean countries, with around 70% of them coming from Italy, France, Spain, Greece and Portugal [13].

Considering these macro data, it can be proposed that gastronomy associated with the consumption of differentiated food and drink is a natural and relevant dimension of place branding [14], inasmuch as agri-food products and gastronomy are positioned as differentiated territorial offers, including distinctive elements such as the resulting experience, the location's heritage and its identity [15]. Simultaneously, it should be highlighted that place branding is evolving towards a new mentality or logic involving multiple stakeholders and complex systems of interaction [16]. As argued by Kavaratzis and Hatch [17], a place's brand and identity are formed through a complex system of interactions between: (i) the collective and the individual; (ii) the physical and non-physical; (iii) the functional and the emotional; (iv) the internal and the external; and (v) the organised and the random.

Place branding based on differentiated quality agri-food products and local gastronomy can serve as a lever to promote tourism and the sustainability of rural areas. Here, restaurants play an important role as local agents and cultural, local promoters, ensuring a good welcome and recommendation for visiting tourists. In addition, they can use local products to provide quality and differentiation on their menus. They can benefit from the local, territorial brand provided by a given quality product or products to increase both their business sustainability and the region's sustainability [18].

Consumers are increasingly sensitive to matters such as the quality, safety and origin of food; the sustainability of agriculture and production processes; certification of food and drink; reducing food waste; and respect for workers' rights throughout the production chain [19,20]. The literature on sustainability in the restaurant sector is recent and focuses almost exclusively on the environmental aspect of sustainability [21].

From a business analysis perspective, recognition of social and environmental responsibility is increasingly included in management strategies [22,23] and processes [19]. Consequently, the evolution of the traditional concept of corporate social responsibility (CSR) [24] towards a concept of shared value [25] and implementation of sustainable business models [26,27] has made it necessary to incorporate matters of sustainability in daily operations, not just as a response to some types of moral obligations, but also as an opportunity to increase the quality, effectiveness and efficiency of businesses, and consequently improve these firms' performance [2].

For a better understanding of the global relevance of stimulating restaurants towards more sustainable management, it is crucial to understand the factors leading entrepreneurs in this direction and to highlight the potential benefits arising from this type of approach. Although scarce in the literature, some studies focus on the influence of adopting sustainable practices on restaurants' performance (e.g., [28–33]). However, studies on the effects of using regional agri-food products on restaurants' financial performance and their business sustainability are very rare (e.g., [34,35]).

The specific nature of regional agri-food products is due to their strong bond with their places of origin [36]. That specificity results not only from climatic characteristics and

the strong connection with specific production assets of a material (e.g., regional varieties or native breeds) and intangible (e.g., local agents' knowledge) nature, but also from local culture and traditions, which are the foundations of local populations' 'historic memory' and identity [37]. For all these reasons, regional agri-food products, and consequently local cuisine, are indeed a specific asset in forming a place's social and gastronomic particularities [38] and are therefore considered as key factors of the tourist experience and a very important component of the tourism system [35].

Therefore, the demand for regional agri-food products, besides stimulating farming activity, creates job opportunities, encourages opportunity entrepreneurship, contributes to making destinations more attractive, reinforces the identity of the tourist destination brand and stimulates the community's pride in its food and all the cultural heritage related to it [34].

As proposed by [39], restaurants play a mediating role between tourists and local food. The economic importance of restaurants is explained by the fact that almost a third of tourists' total expenditure goes on food, which is a considerable proportion of a destination's income from tourism [40].

This study contributes to advancing the still-limited knowledge of the influence of using differentiated regional agri-food products and the implementation of managerial practices of sustainability and corporate social responsibility on the financial performance of regional restaurants connected to their territory of origin, understood here as restaurants that include on their à la carte menus dishes prepared with high-quality regional agrifood products from the local area. It provides implications for political decision-makers and those in charge of responsible, sustainable management of restaurants linked to the local area.

This study begins by presenting the theoretical framework on regional agri-food products and managing sustainability in restaurants linked to their land of origin. Secondly, the methodology used is presented and the main results obtained are described. Thirdly, the results are discussed, and fourthly, the conclusions, implications, limitations and suggestions for future research are presented.

2. Theoretical Framework and Hypothesis Development

2.1. Regional Agri-Food Products and Restaurants Linked to Their Land of Origin

In the literature of reference on the different theoretical frameworks with applications to the sustainable development of rural territories [41], the cultural economy [42] and agrifood systems [43], prominence has been given to the strong bond between differentiated agri-food products and their territories of origin [44].

This type of product is usually associated with local, small-scale production and supply chains, denoting special characteristics, given the combination of local raw material and ancestral, traditional production techniques, which gives it its identity [45].

The conceptualisation of the traditional product is contained in EU legislation, through Regulation (EU) n° 1151/2012, of 21 November 2012, with regards to the quality schemes of agri-food products and foodstuffs [46].

Regional agri-food products are elements representing the history, cultural heritage, customs and traditions of a community, or even its geographical and orographic features [47]. For that reason, these products are generally conceived as a form of cultural, historical and intangible capital, potentially able to produce economic and social benefits for their producers and lands of origin [48] and for consumers through the resulting experience [49]. Those benefits can consist of increased income for farmers in peripheral areas who, by establishing local partnerships, can create spillover effects and be multiplied by strengthening sales through local distribution networks [50], job creation [51], increased social dynamics in territories [39], strengthening environmental sustainability, social well-being and the quality and safety of agri-food products provided to consumers [52].

In recent decades, peripheral areas of the EU with low population density have lacked innovative responses to the different models and discourses on rurality, with the ultimate

goal of promoting sustainable regional development [43]. Although the last few years have seen an increasing tendency to incorporate new activities in certain regions, especially of a touristic nature [53], these processes must involve gradual specialisation, which includes promoting and valuing the quality of both goods produced and services provided [43].

One of the strategies used to promote the sustainable regional development of rural areas' endogenous potential is based on combining the process of territorial identification and creating brands linked to the land [54–56]. This strategy is based essentially on valuing specific assets regarding the production of goods and the provision of services linked to the place of origin, such as history, countryside, cultural heritage, agri-food products and tourism [57].

The association of an agri-food product with a specific place is designated as Geographic Indication (GI), which aims to identify a product of proven quality with a specific location. This association often occurs naturally, without any particular attempt to connect a specific attribute of the place to the product [58], underlining that the intangible benefits are fundamental for both the product and the place of origin [59].

As proposed by Verlegh and Steenkamp [59], identifying regional agri-food products is the target of marketing and place branding strategies, in order to potentialise and valorise the image of their places and regions of origin.

In the sphere of territorial marketing, regional reputation is still a phenomenon of limited significance, despite the wine sector being an exception worth mentioning here. This is due to wine being a product which, besides operating as an individual brand, also does so under a so-called umbrella brand [60] or a territorial brand [61]. In the wine sector, according to Menival and Charters [62], the existence of territorial brands is due to recognising the importance of *terroir*, representing an inseparable relation between quality and place of origin. Therefore, regional designations associated with wine play the same role as a brand, i.e., they add value for both the producer and the consumer [63].

Besides the wine sector, recognition of a given agri-food product's potential to be the image of its place of origin has caused the emergence of collaborative scenarios of the co-branding of products and places [58], allowing the commercialisation of a product associated with a given locality possessing brand attributes and valorising the image of both the product and the place [64]. Kavaratzis and Ashworth [64] even consider the co-branding of products and places as one of the three key areas of place branding, although the former, referring to products, has been neglected in the literature of reference. This raises questions that remain to be explored, mainly due to many of these products being agri-food. Products such as Gruyère cheese, Barossa Valley wine, Colchester oysters [6], Port wine [65], Serra da Estrela cheese or Valle del Jerte cherries [44] can alone represent a local brand, including a wide range of individual brands that can come under the umbrella-brand [6].

Therefore, instead of commercialising a place through an attractive logo or more orthodox marketing strategies, in the context of tourism linked to the land, place branding is increasingly understood as a mechanism to promote the place's quality and encourage meaningful links between visitors and residents in the tourist destination through shared experiences [65–67].

In this context, gastronomy has become an important factor in diversifying the portfolio of products and services and in defining the regional brand and image [68]. It is an essential element in expressing the uniqueness of the tourist activity to be highlighted, not only because it is the central experience, but also because it has become a source of identity formation in post-modern societies [69].

In this line of action, the restaurant sector is an important vector in building facilitating relations between food, tourism and sustainable territorial development. Restaurants exist not only to satisfy basic nutritional needs but also because the whole food and restaurant industry has a facilitating role; they are an important part of the tourist industry [70]. Besides providing tourists with food, restaurants offer them an experience. Here, food, and consequently regional agri-food products, are generally indicated as one of the main reasons for travelling and a factor that influences tourists' choice of restaurants [71].

Gastronomic experiences are a fundamental element for tourists and their tourism experiences. Therefore, using regional agri-food products in restaurants can be a source of competitive advantage for the restaurants that serve them, at the same time as having a positive impact on the territory's differentiation [69]. Using regional agri-food products in restaurants can also have an impact on the improvement of products developed based on local tradition, as well as the dining experiences shared by tourists [70,72]. This has a positive effect on the perception of the level of authenticity in the restaurant, extending the experience in the tourist destination [71].

Restaurants' use of local or regional agri-food products also contributes to the growth of local production, while identifying those products on their menus serves as an alternative to conventional practices in marketing restaurants [73].

A growing number of restaurants are changing how they position themselves in the market, giving greater emphasis to the local nature of the food, highlighting local dishes on the menu or providing different regional aperitifs [74]. This view is shared by Dhora and Dionizi [70], who underline the importance of restaurants offering their customers, and especially tourists, a variety of traditional dishes, considering that consumers increasingly look for locally produced specialities and unique and traditional regional products. Besides establishing a strong link with the territory, this new positioning requires a strong relation between the restaurant sector, the surrounding environment and the region's producers, increasing the number of authentic experiences available to visitors and tourists in a given territory [75]. Consequently, restaurants that offer quality products make a very important contribution to improving the quality of both local agri-food products and their production systems [70].

As described by Everett and Aitchison (2008) [76], many factors define a destination's success and failure regarding the development of gastronomic tourism or associated with local agri-food products. One of these is restaurants' important role in promoting gastronomy and local products, with them serving as facilitating anchors in many tourist destinations. In addition, they are a service of proximity, which facilitates the relation with gastronomic tourism. They act as mediators between local producers and tourists, communicate directly with them and know the local situation.

Despite the important mediating role restaurants play in tourism development, Hjalager and Richards [77] highlight that few of them develop a truly wide-ranging strategy, oriented towards local products and the destination's traditional cuisine. This may be to do with restrictions or barriers that prevent restaurant owners or managers from using completely local products as mechanisms to attract tourists.

According to Smith and Honggen [78], the most common restriction faced by chefs and restaurant managers to using regional agri-food products lie in the difficulty in accessing local producers' short production and distribution chains and in ensuring food quality and safety. Therefore, establishing good relations with local actors gives restaurants the possibility of reducing the impacts arising from these difficulties.

From the above, the use of regional agri-food products is expected to have a positive effect on restaurants' financial performance. This gives rise to the first research Hypothesis 1, expressed as follows:

Hypothesis 1. *The use of regional agri-food products (RAP) has a positive influence on the financial performance (FP) of restaurants linked to their place of origin.*

2.2. Sustainable Management in Restaurants Linked to Their Place of Origin

The sustainability of restaurants has been studied from different angles of analysis [19]. Some studies have focused on analysing the impact of different practices of responsible and sustainable management on the financial performance of different companies in the tourism sector, and, as indicated by Bagur-Femenías et al. [31], these studies focus on corporate environmental responsibility or corporate social responsibility.

Regarding restaurants, the recent review conducted by Higgins-Desbiolles et al. [21] points in a related direction, i.e., that sustainable restaurants have focused essentially on practices of environmental sustainability. Even so, some studies turn their attention to deepening the topic of factors stimulating sustainability and their effect on restaurants' performance [19].

It should be noted, however, that studies analysing the combined effects of the different components impacting on restaurants' sustainability are still scarce [31]. Indeed, no study in the previous literature was found to concentrate, simultaneously, on the effects of quality management practices (QMP), environmental management practices (EMP) and corporate social responsibility practices (CSR) on restaurants' financial performance and the resulting business sustainability. This is even more obvious in introducing to this subject of analysis the possible use, by restaurants, of regional agri-food products (RAP) as a way to increase their financial performance.

2.2.1. Quality Management and Financial Performance

Over the last 20 years, the positive effects of quality in any given company have been widely studied [31]. Most authors agree that quality can activate various internal and external levers that are able to improve business competitiveness [79]. Concerning the internal effects of quality, the literature emphasises the improved effectiveness of workers and processes [80]. As for the external effects, the main one lies in increased customer satisfaction [81].

The quality management policies (QMP) that explain and standardise processes and tasks, allowing the identification of valuable criteria for customers [82], also focus on the formation of key processes tending to improve employee performance [83–86] and customer satisfaction with the company in relation to its main competitors [87], which also creates loyalty [88]. As a consequence of this interlinked chain of factors, through a series of causal relations, firms can generate competitive advantage that will improve their image [89] and increase sales, maximising the income obtained from current customers and attracting new ones [90]. Better market positioning can also make a company more resilient when faced with potential crises, strengthening its capacity to remain in the market [89,91].

Some researchers also found that quality management policies can lead to more advanced information systems that facilitate decision-making processes [87,88]. In addition, they can generate not only increased sales, but can also increase efficiency, either through eliminating activities that do not create value or by increasing efficiency in performing key tasks, with less allocation of resources to the process [86,89,90].

A great many authors consider quality as a path to raising firms' financial performance, and obviously that of restaurants. Improved business competitiveness comes through interaction with external factors and internal factors and processes [88].

This means that quality management practices have a positive influence on restaurants' performance. Therefore, the second research Hypothesis 2 is considered:

Hypothesis 2. The implementation of quality management practices (QMP) has a positive influence on the financial performance (FP) of restaurants linked to their place of origin.

2.2.2. Environmental Management and Financial Performance

The contrast between sources of competitive advantage and average production costs [91] can establish a useful structure for analysing the impact of environmental management on companies' financial performance [92]. For example, pollution prevention can let a firm economise regarding the costs of acquiring raw and subsidiary products, products in the manufacturing process and the costs of energy and reusing material through circular recycling practices [93].

As highlighted in [30], various studies indicate that the adoption of environmental management practices (EMP) allows companies' better financial performance, directly or indirectly, i.e., by reducing daily operational costs and consequently reinforcing com-

petitiveness. Hofer et al. [94] address the relation between environmental practices and firm performance, signalling a positive relation, with rare exceptions (for example, those described in [95,96]).

In the context of the tourist industry, which restaurants are part of, previous studies converge on the finding that environmental management practices are positively related to companies' performance [30].

It is therefore also expected that environmental management practices will have a positive influence on restaurants' financial performance. This gives rise to the third research Hypothesis 3:

Hypothesis 3. *The implementation of environmental management practices (EMP) has a positive influence on the financial performance (FP) of restaurants linked to place of origin.*

2.2.3. Corporate Social Responsibility and Financial Performance

The most common definition of what is considered as corporate social responsibility (CSR) involves activities of benefit to some segment of society, going beyond the wish for company profit and each country's legal requirements [97,98].

The theoretical work on companies' reasons for developing initiatives related to CSR range from the instrumental for stakeholders to the interest underlined by the promoters of these initiatives. Therefore, CSR is an instrument that lets a firm achieve other desirable results, such as attracting and retaining employees, corporate reputation and customer satisfaction [97].

As indicated by Lee et al. [99], CSR has a positive effect on firms' financial performance (e.g., [100,101]). Based on the arguments of instrumental stakeholder theory [102], the results of these studies imply that an increase in CSR activities, considering all legitimate stakeholders in decision-making, improves a firm's performance, has a positive effect on its reputation or brand equity and allows savings in operational costs, adapting to possible government regulations [98–100].

Additionally, in the hotel and tourism industry, collective and individual awareness of CSR is growing [98], due to increased attention to the importance of brand reputation [103] and the unstable nature of customers' willingness to pay for appropriate products in hotels and restaurants [104].

Lee et al. [99] state that although there seems to be no clear relation between CSR and FP in restaurants, among the few studies made in this field, Kang et al. [98] detected a positive effect of CSR (i.e., socially responsible activities) on the value of restaurant firms in the USA.

CSR strategies are therefore expected to have a positive influence on restaurants' financial performance, giving rise to the fourth research Hypothesis 4:

Hypothesis 4. *The implementation of corporate social responsibility (CSR) practices has a positive influence on the financial performance (FP) of restaurants linked to their place of origin.*

Given the complexity of the theoretical framework reviewed and the limited amount of previous empirical evidence, a conceptual model is proposed, to be tested in the empirical analysis carried out. The proposed conceptual model of analysis explores the relations between all the items that integrate the constructs of quality management practices (QMP), environmental management practices (EMP), corporate social responsibility practices (CSR) and the financial performance (FPR) of restaurants (see Figure 1).

Regional agri-food products (RAP)

Quality management practices (QMP)

RAP.1

RAP.2 RAP.3

RAP.4

RAP.5

CSR.6

 $\mathbf{H}_{4,f}$

Н1.2 Н1.5

HLe

H1.d

H1.e





Figure 1. Proposed conceptual model of analysis. The description of variables is provided below in Table 1.

Table 1. List of Variables: Designation and descript	ion.
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variables Description	
Dependent variable	
Financial performance FPR	
FPR.1 Profit has increased	
FPR.2 The number of customers has increased	
FPR.3 Rate of occupancy has increased	
FPR.4 Costs of service provision have fallen	
FPR.5 Administrative costs have fallen	
FPR.6 Costs of waste disposal have fallen	
FPR.7 Number of employees has increased	
FPR.8 Market share has increased	
Independent variables	
Regional agri-tood products RAP	
RAP.1 Commitment to buy quality regional products	
RAP.2 Commitment to buy locally	
RAP.3 Use of regional products D.O. in marketing and advertising campaign	15
RAF.4 Improved restaurant image through using quality regional products	
Ovality management practices ONP	
Quarty management practices Qivir	
QMP.1 Collaboration with systematic to increase medicate or service	
OMP3 Collaboration with suppliars to improve products of services	
OMP4 Identification of improvements to in the service provision process	
OMP5 Monitoring and correction of possible failings to comply with quality :	and safety
OMP6 There is a culture of quality based on continuous improvement	and survey
Environmental management practices	
EMP1 Provision of environmental training for employees	
EMP.2 Rewards for employees who adopt environmentally responsible pract	ices
EMP.3 Concern about choosing organic and sustainably farmed food	
EMP.4 Concern about reducing the use of cleaning products that harm the en	vironment
EMP.5 Implementation of practices to reduce the use of water	
EMP.6 Implementation of practices to reduce energy use	
EMP.7 Separation of waste	
EMP.8 Use of the ecological argument in marketing and advertising campaig	ns
EMP.9 Organising activities of an environmental nature	
EMP.10 Environmentally responsible, long-term, strategic vision	
EMP.11 Quantification of environmental savings and costs of the whole restau	rant activity
EMP.12 Reduction of operational costs due to activities to protect the environm	nent
EMP.13 Attracting new customers and retaining current ones due to activities the environment	to protect
EMP.14 Differentiation from competing restaurants due to activities to protect	the environment
Corporate socal responsibility CSR	
CSR.1 Commitment to retaining jobs	
CSR.2 Good working atmosphere	
CSR.3 Plan of measures to reconcile family life and work	
CSR.4 Employees with the same duties are treated equally in terms of salary	
CSR.9 Compare should be employees	MT 7
Control variables	l y
Restaurant profile CAR	
CAR1 Location	
CAR.2 Number of years in operation	
CAR.3 Type of employees (Family members or outside the family)	
CAR.4 N° of employees	
CAR.5 Restaurant capacity	
CAR.6 Type of restaurant	

3. Methodological Design, Materials, and Variables

This study follows a line of research that aims to understand the effects of certified quality products (for example, products with PDO, PGI and TSG) on the sustainable regional development of territories of origin. Primary data were obtained from a questionnaire survey administered to the owners or managers of restaurants using quality products on their menus, all located in the Centre Region of Portugal.

This region covers an area of approximately 28 thousand km² and has around 2.3 million inhabitants. Regarding agricultural production, this region produces, certifies and

exports a diversified portfolio of agri-food goods of excellence, confirmed by the existence of 42 products certified by the European Union Quality System, namely 22 PDO, one TSG, 17 PGI and two GI.

3.1. Database and Sample

To form the database, primary data were collected through a questionnaire survey administered between June and September 2021 to the owners or managers of restaurants in the NUT II Central Region of Portugal that use regional agri-food products on their menus.

The questionnaire used for data collection was structured in 43 questions, taking as a reference various previous studies (see Table 2) related to the topics and constructs used here. It contains two sections. The first aims to obtain a socio-demographic characterisation of the sample, having the following sub-sections: (1) Profile of the restaurant owner and/or manager; (2) Restaurant profile. The second characterises the practices of responsible and sustainable management and the financial performance of restaurants linked to their place of origin, including the following sub-sections: (3) Regional agri-food products; (4) Quality management practices; (5) Environmental management practices; (6) Corporate social responsibility practices; and (7) Financial performance.

Table 2. Questions related to restaurants' sustainability.

Questions Related to Restaurants' Sustainability					Llach et al. [29]	Planken [107]	Perramon et al. [30]	Bagur-Femenías et al. [88]	Alonso-Almeida et al. [33]	Cantele & Cassia [19]	Оwп
1. R	egional agri-food products (RAP)										
1.1 1.2 1.3 1.4 1.5 2. Q 2.1 2.2	Is there a commitment to buying regional quality products? Is there a commitment to buying locally? Do you use regional products' D.O. in marketing and advertising campaigns? Has the restaurant's image improved with the use of regional quality producers? Has the use of regional products increased the demand for the restaurant tuality management practices (QMP) Is the restaurant's administration committed to product or service quality? Is there callaboration with customers to improve the products or convices?	-			•	•			•	•	• • • •
2.2	Is there collaboration with suppliers to improve the products of services?				•	•				•	
2.4	Are improvements in the service provision process identified?					•					
2.5	Is compliance with quality and safety monitored and defects corrected?			٠		•			٠	٠	
2.6 3 E	Is there a culture of quality based on continuous improvement?					•					
3.1	Are employees given training in the field of the environment?		•			•		•			
3.2	Are employees who adopt environmentally responsible practices rewarded?		•			•		•			
3.3	Is there concern about choosing organic and sustainably farmed food?		٠				٠				
3.4	Is there concern about reducing the use of cleaning products that harm the environment?		•				•				
3.5	Are practices to reduce the use of water implemented?	٠	٠				٠			٠	
3.6	Are practices to reduce energy use implemented?	•	•				•			•	
3.7 3.8	is wasie separateu? Is the ecological argument used in marketing and advertising campaigns?	•				•	•	•		•	
3.9	Are activities of an environmental nature organised?		•			•		•			

Table 2. Cont.

Que	stions Related to Restaurants' Sustainability	Kassinis & Soteriou [105]	Molina-Azorín et al. [92]	Kasim & Ismail [106]	Llach et al. [29]	Planken [107]	Perramon et al. [30]	Bagur-Femenías et al. [88]	Alonso-Almeida et al. [33]	Cantele & Cassia [19]	Own
3.10	Is there a long-term, environmentally responsible, strategic vision?		٠			٠		٠			
3.11	Are the environmental savings and costs of the whole restaurant activity quantified?		•			•					
3.12	Do activities to protect the environment allow a reduction in total operational costs?						•				
3.13	Do activities to protect the environment make it possible to attract new customers and retain current ones?						•				
3.14	Do activities to protect the environment allow differentiation in relation to competing restaurants?						٠				
4. C	proprate social responsibility practices (CSR)										
4.1	Is there a commitment to job retention?					٠		٠		٠	
4.2	Is there a good working atmosphere?					٠		٠		٠	
4.3	Is there a plan of measures to reconcile family life with work?					٠		٠		٠	
4.4	Are employees with the same duties treated equally in terms of salary?					•		•			
4.5	Are employees given training?							•			
4.6	Is there concern about cooperating with the community to develop the territory?			•					•		
5. Fi	nancial performance (FPR)										
5.1	Profit has increased	٠	٠				٠	٠	٠		
5.2	The number of customers has increased				٠			٠	٠	•	
5.3	The rate of occupancy has increased		٠		٠		•	•	٠		
5.4	The cost of service provision has fallen							٠			
5.5	Administrative costs have fallen							٠			
5.6	The costs of eliminating waste have fallen							٠			
5.7	The number of employees has increased						٠	٠			
5.8	Market share has increased	•	٠			٠				٠	

The variables used to measure the constructs were based on a literature review (Table 1). The QMPs' focus on the administrative organisation of restaurants and were based on the recent studies of Alonso-Almeida et al. [33], Cantele & Cassia [19], Kasim & Ismail [106], Llach et al. [29] and Planken [107]. The EMPs were measured using questions related to environmental protection already employed in the general literature about environmental management, such as Cantele & Cassia [19], Llach et al. [29], Perramon et al. [30], Molina-Azorín et al. [92], Kassinis & Soteriou [105] and Planken [107]. These measures include both technical issues (such as energy and water-saving activities) and organisational practices (such as personnel training in environmental issues) [92]. The CSR practices are measured in terms of working environment, salary level, stakeholder commitment and management commitment, in accordance with Alonso-Almeida et al. [33], Bagur-Femenías et al. [88], Cantele & Cassia [19] and Planken [107]. Finally, the FPR was measured in this study considering performance in terms of financial results indicated by the restaurants' owners and based on the previous studies by Alonso-Almeida et al. [33], Bagur-Femenías et al. [88], Cantele & Cassia [19], Kassinis & Soteriou [105], Kasim & Ismail [106], Llach et al. [29], Molina-Azorín et al. [92] and Perramon et al. [30].

The reliability of the questionnaire survey results was previously ensured by conducting a pilot test in both Portuguese and Spanish Restaurants, covering a limited sample of 20 restaurants (i.e., 10 Portuguese restaurants + 10 Spanish restaurants). Afterwards, the results of the questionnaires were compared, and no significant results or missing answers (or values) were found. Since it was not possible to collect a minimum number of 200 valid questionnaires related to the Regional Spanish restaurants located in the Extremadura Region, especially due to the COVID-19 conjecture, the option available was to perform the final analysis applied only to the Portuguese sample. Moreover, a principal component analysis was performed pointing out the joint significance of variables representing RAP, QMP, EMP and CSR.

The questionnaire was constructed, administered and spread online via Surveymonkey, since this platform has characteristics that enhance the efficacy of the questionnaires themselves. As well as managing the sending out of emails and the respective answers in a practical way, it facilitates export in different formats adaptable to software for statistical analysis of the data [108].

Restaurants were selected through Tripadvisor.com. The reason for this choice was that this website unites one of the main online tourist communities worldwide, joining restaurants in more than 190 countries. In addition, it has more than 200 million classifications and assessments made by global tourists [109], who classify restaurants according to a system of 5 stars, based on 4 criteria: food, service, price and atmosphere. These four criteria influence tourists' decision-making regarding options for consumption in restaurants [110].

Given the geographical area and objective guiding this study, to select restaurants to include in the study, regarding the filters available on Tripadvisor.com, the only way to ensure that the restaurants in the selection had a link to their place of origin was in the "Good for" section, from the selection filters menu, choosing the option "regional gastronomy". Thus, the following sequence of procedures was implemented: (1) "geographical area"; (2) type of establishment, with selection limited to "restaurants"; (3) type of cuisine, selecting the characteristic of: "good for regional cuisine"; and (4) establishments classified with between three and five stars (see Figure 2).



Figure 2. Characteristics and selection criteria of restaurants.

This selection process gave a total of 854 restaurants. All restaurants were contacted in three ways: through the Surveymonkey platform, by email and through Facebook Messenger. These contacts resulted in a total of 292 responses, of which 265 were considered valid and 27 invalid for reasons such as not responding to the entire questionnaire. The sample size was determined using the Qualtrics calculator [111] and the finite population correction factor, expressed as follows:

$$n = \frac{n_0 N}{n_0 + (N - 1)} \tag{1}$$

where,

$$u_0 = \frac{Z^2 \sigma^2}{e^2} \tag{2}$$

where *Z* is the confidence level, σ is the standard deviation and *e* is the sampling error.

Following this process, the optimal sample size for a 95.0% level of confidence and admitting a 5.0% margin of error resulted in an optimal sample size of 265 restaurants (Table 3).

Table 3. Calculation of the ideal sample of responses according to the QuestionPro calculator.

n

Restaurants *	Level of Confidence	Margin of Error	Sample
854	95%	5%	265
*) Restaurants appearing i	in Tripadvisor to which the que	stionnaire was sent through	at least one of the following

(*) Restaurants appearing in Tripadvisor to which the questionnaire was sent through at least one of the following options: Surveymonkey, E-mail and/or Facebook Messenger.

The sample of restaurants (Table 4) includes those that have been operating for more than 10 years (48.3%), being restaurants serving regional or national cuisine (56.6%), having between zero and five employees (61.9%) and where collaborators are people outside the family (57.7%).

Table 4. Descriptive statistics of the restaurant sample (n = 265).

	N°	Percentage
Restaurant age		
0–5	91	34.3%
6–10	46	17.4%
>10	128	48.3%
Type of restaurant		
Regional or national cuisine	150	56.6%
Regional or national cuisine + another type of cuisine	58	21.9%
Not specialising in regional or national cuisine	57	21.5%
Employees		
0–5	164	61.9%
6–10	73	27.5%
>10	28	10.6%
Type of employee		
Direct family (partner and children)	35	13.2%
Direct family and others	77	29.1%
Only others	153	57.7%

Restaurant owners and managers are mostly male (66%), married (81.9%) and aged between 36 and 55 (57%). As for academic qualifications, 38.9% have higher education and only 43% have training in the area of catering. More than 58% have experience in the area of catering, previous to their experience in the current restaurant (Table 5).

3.2. Variables and Model Specification

Considering the theoretical framework and the proposed conceptual model of analysis arising from this, a set of variables was selected to assess whether the association of regional agri-food products (RAP) and the implementation of sustainability practices, including those of quality management (QMP), environmental management (EMP) and corporate social responsibility (CSR), influence the financial performance (FPR) of restaurants linked to their territory of origin.

	\mathbf{N}°	Percentage
Gender		
Female	90	34.0%
Male	175	66.0%
Average age		
≤ 25	5	1.9%
26 to 35	43	16.2%
36 to 45	71	26.8%
46 to 55	80	30.2%
56 to 65	51	19.2%
>65	15	5.7%
Marital status		
Single	36	13.6%
Married	217	81.9%
Widowed	4	1.5%
Other situation	8	3.0%
Academic qualifications		
Basic education	63	23.8%
Secondary education	94	35.5%
Higher education	103	38.9%
Other situation	5	1.9%
Relation with the restaurant		
Owner	102	38.5%
Manager	55	20.8%
Both	100	37.7%
Other situation	8	3.0%
Number of years working in the restaurant		
\leq 5 years	107	40.4%
6 to 10 years	54	20.4%
11 to 15 years	23	8.7%
16 to 20 years	25	9.4%
21 to 25 years	20	7.5%
>25 years	36	13.6%
Number of years as owner, manager or both		
\leq 5 years	114	43.0%
6 to 10 years	55	20.8%
11 to 15 years	26	9.8%
16 to 20 years	25	9.4%
21 to 25 years	16	6.0%
>25 years	29	10.9%
Experience in catering before this restaurant		
No	109	41.1%
Yes	156	58.9%
Training in the area of catering		
Ňo	151	57.0%
Yes	114	43.0%

Table 5. Descriptive statistics of restaurant owners and/or managers (n = 265).

To obtain data related to the restaurants' FP, the owners or managers were surveyed through nine items (FPR.1–FPR.9), represented as dichotomic variables, where 'No' corresponds to '0' and 'Yes' corresponds to '1' (see Table 1 before).

The independent variables are distributed over four groups: (i) five items related to the use of regional agri-food products (RAP.1–RAP.5); (ii) six items related to quality management practices (QMP.1–QMP.6); (iii) fourteen items related to environmental management practices (EMP.1–EMP.14); and (iv) six items related to corporate social responsibility practices (CSR.1–CSR.6). Additionally, for the set of items making up the independent variables, dichotomic variables were used, where 'No' corresponds to '0' and 'Yes' corresponds to '1'.

Besides the dependent and independent variables, a control variable was considered, referring to the restaurant profile, formed of six items (CAR.1–CAR.6).

3.3. Discrete-Choice Models

In order to estimate the conceptual model of analysis proposed and test the research hypotheses empirically, three discrete-choice models were used. These can analyse the statistical relation of a binary dependent variable in relation to more than one explanatory variable and in this way determine the different ways in which the independent variables influence the financial performance of restaurants linked to their territory of origin.

Considering the aim here, the literature contains various studies which, examining the same type of relation analysed, use discrete-choice models [112–116], these being viable models for this type of study [117].

In the field of discrete-choice models, the logistic regression model should be highlighted, being a predictive model that can be used when the response variable is binary [118]. This is an econometric model used to model the occurrence, in terms of probability, of one the two achievements of the classes of dependent variables, where the independent variables can be qualitative or quantitative. This method can also assess the significance of each independent variable included in the model. A logistic regression is therefore a statistical technique that, from a set of observations, aims to produce a predictive model of values taken by a categorical, often binary variable of a series of continuous and/or binary explanatory variables [119]. In the logistic regression model, the probability of observing a given event is expressed as follows:

$$P_{estimated} = \frac{e^L}{1 + e^L} \tag{3}$$

or, as an equivalent:

$$P_{estimated} = \frac{e^L}{1 + e^{-L}} \tag{4}$$

where:

$$L = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \ldots + \beta_k * X_k$$
(5)

The estimated probability ($P_{estimated}$) of a given event occurring; ≈ 2.718 , that is, the Neper number, corresponds to the value used in the exponential function, with β_1 , β_2 ,..., β_k , as the regression coefficients estimated for each independent variable k and β_0 as the constant term.

The estimators are obtained by applying the maximum likelihood method, which consists of determining the values of the parameters that maximise the probability of obtaining the set of values observed [117]. According to Hosmer and Lemeshow [120], this method can estimate the regression coefficients, ensuring maximum value of the probability of obtaining the achievements of the dependent variable of the sample. The likelihood function expresses the probability of observing a given event, with unknown parameters. The maximum likelihood estimators of those parameters are chosen to ensure maximum likelihood, being expressed through the following system of equations:

$$\begin{cases} \frac{\delta L}{\delta \beta_0} = 0\\ \frac{\delta L}{\delta \beta_j} = 0 \end{cases} \Leftrightarrow \begin{cases} \sum_{\substack{i=1\\n\\ j=1}}^n [yi - \pi(xi)] = 0\\ \sum_{\substack{i=1\\n\\j=1}}^n xij[yi - \pi(xi)] = 0 \end{cases}, \ j = 1, \dots, m \tag{6}$$

The logistic regression model uses the estimation with the maximum likelihood [121] to evaluate the probability of categorical association [122], whose consistency can be determined through the value obtained for logarithmic likelihood and the *p*-value obtained to assess whether the model represents the data accurately.

3.3.1. Model 1—Probit Regression Model for Binary Response Data

This empirical approach used a first Probit model, aiming to test the relation between restaurants' financial performance (*FP*) and the different explanatory variables, namely the

set of sub-variables included in the variables: regional agri-food products (*RAP*); quality management practices (*QMP*); environmental management practices (*EMP*); and corporate social responsibility practices (*CSR*).

Following Vittinghoff et al. [122], this estimation process considers the response or dependent variable, namely financial performance (*FP*), which is represented by a binary variable and the vector of the independent variables representing regional agri-food products—(*RAP*), quality management practices (*PGQ*), environmental management practices (*EMP*) and corporate social responsibility practices (*CSR*)—which are expressed as follows:

$$\Pr(DFI = 1 | (PAR, PGQ, PGA, RSC) = \Phi(PF'\beta)$$
(7)

where: *Pr* is probability and Φ represents the function of cumulative distribution function (CDF) of the standard normal distribution. The β parameters are typically estimated using the maximum likelihood method.

3.3.2. Model 2-Logistic Regression Model for Binary Response Data

In a second model, considered as the response, or dependent, the variable is FP, that is, p(FP)] is the probability of restaurants having better financial performance, p(FP) = Pr[FP = 1], considering the same group of explanatory variables, with p(FP | RAP, QMP, EMP, CSR) expressing the likelihood of restaurants having better financial performance according to the level of use of regional agri-food products and the implementation of quality management, environmental management and corporate social responsibility practices Pr[FP = 1 | RAP = rap, QMP = qmp, EMP = emp, CSR = csr], supposing that FP follows a binomial distribution of the type: $FP \sim Bin(1, p)$.

In the regression model, the variable of interest p(FP), hereafter represented by p, undergoes the transformation known as a logistic function and is defined as follows:

$$logit(p) = \log\left(\frac{p}{1-p}\right)$$
(8)

where: $\frac{p}{1-p}$ represents the probabilities of success associated with financial performance.

The logistic regression model is defined as linear in the fixed parameters β_0 and β_1 , taking on the following functional form:

$$logit (p) = \beta_0 + \beta_1 (RAP + QMP + EMP + CSR)$$
(9)

The model can also be defined in terms of the probability of success of the event observed, as follows:

$$p = \frac{\exp[\beta_0 + \beta_1(RAP + QMP + EMP + CSR)]}{1 + \exp[\beta_0 + \beta_1(RAP + QMP + EMP + CSR)]} = \frac{1}{1 + \exp[-(\beta_0 + \beta_1(RAP + QMP + EMP + CSR))]}$$
(10)

Extension of this model to multiple explanatory variables is processed through its inclusion in the linear predictor. Since all the variables are nominal, being recoded through binary variables, the linear predictor of the model is represented through the following model specification:

$$logit(p) = \beta_{0} + \beta_{11}RAP.1 + \beta_{12}RAP.2 + \beta_{13}RAP.2 + \beta_{14}RAP.4 + \beta_{15}RAP.5 + \beta_{16}QMP.1 + \beta_{17}QMP.2 + \beta_{18}QMP.3 + \beta_{19}QMP.4 + \beta_{110}QMP.5 + \beta_{111}QMP.6 + \beta_{112}EMP.1 + \beta_{113}EMP.2 + \beta_{114}EMP.3 + \beta_{115}EMP.4 + \beta_{116}EMP.5 + \beta_{117}EMP.6 + \beta_{118}EMP.7 + \beta_{119}EMP.8$$
(11)
+ $\beta_{120}EMP.9 + \beta_{121}EMP.10 + \beta_{122}EMP.11 + \beta_{123}EMP.12 + \beta_{124}EMP.13 + \beta_{125}EMP.14 + \beta_{126}CSR.1 + \beta_{127}CSR.2 + \beta_{128}CSR.3 + \beta_{129}CSR.4 + \beta_{130}CSR.5 + \beta_{131}CSR.6$

The logit function establishes the link between the response variable and the linear predictor, using the maximum likelihood method. This is the most commonly used link function, as it allows easy interpretation of the model's parameters. Therefore, the probabilities of success regarding financial performance has the value of $\exp\beta_1$ for each additional value for the use of regional agri-food products and the implementation of quality management, environmental management and corporate social responsibility practices, considering that FP = 1 if the restaurant strengthened its financial performance and FP = 0 if otherwise.

3.3.3. Model 3—Generalised Linear Model (GLM) Regression Model for Binary Response Data

A third model uses a generalised linear model. The term "general" linear model (GLM) usually refers to conventional linear regression models for a continuous response variable given continuous and/or categorical predictors. It includes multiple linear regression, as well as ANOVA and ANCOVA (with fixed effects only).

The form is:

$$y_i \sim N\left(x_i^T \beta, \sigma^2\right)$$
 (12)

where x_i contains known covariates and β contains the coefficients to be estimated. These models are fit by least squares and weighted least squares using, for example, SAS's GLM procedure or R's lm() function.

The term "generalised" linear model (GLIM or GLM) refers to a larger class of models popularised by McCullagh and Nelder (1982, 2nd edition 1989) [123]. In these models, the response variable y_i is assumed to follow an exponential family distribution with mean μ_i , which is assumed to be some (often nonlinear) function of $x_i^T\beta$. Some would call these "nonlinear" because μ_i is often a nonlinear function of the covariates, but, as stated in [123], they can be considered as linear, since the covariates affect the distribution of y_i only through the linear combination $x_i^T\beta$.

4. Results and Discussion

The results of applying the discrete-choice models (Model 1—Logit, Model 2—Probit and Model 3—Generalised Linear Model applied to Logit and Probit models) for the sample considered (see Tables 6–9), using the financial performance of restaurants linked to their territory of origin as a dependent variable, representing the value of 1 when owners or managers state that restaurant profits grew and 0 if the opposite was found, returning to Model 1 an LR Chi² of 68.71 with a *p*-value of 0.0001, for Model 2 an LR Chi² of 69.00 with a *p*-value of 0.0001 and for Model 3, when the GLM is linked to Logit, an AIC of 1.3622 and a BIC of -1003.09, and when the GLM is linked to Probit, were an AIC of 1.3612 and a BIC of -1003.37, indicating that all are statistically significant.

As observed in Tables 6–9, not all the items (tested through sub-hypotheses, cf. Figure 1) that integrate the four constructs concerning the use of regional agri-food products (RAP), implementation of quality management practices (QMP), adoption of environmental management practices (EMP) and implementation of corporate social responsibility practices (CSR) reveal a significant influence on the behaviour of the response variable, that is, the financial performance of the restaurants studied.

The positive influence of some of those items is significant in the three models tested, namely, for RAP, three parameters are signalled, although with different meanings. Using regional products' D.O. in restaurants' marketing and advertising (RAP.3), as well as improved restaurant image through the use of quality regional products (RAP.4), shows a negative, statistically significant influence on the financial performance of the restaurants studied. This may be explained by the restaurants that implement these two measures having to invest some of the means freed up by the restaurant for this purpose, which means an additional financial effort with a negative influence on their financial performance. Another explanation has to do with the questionnaire being answered in the midst of the pandemic crisis, which made that financial effort even more onerous. In contrast, the increased demand for the restaurant due to using regional agri-food products (RAP.5) had a positive and significant influence on restaurants' financial performance.

Variables	Hypotheses	Odds Ratio	Std. Error	Z	p > Z	[95% Con	f. Interval]
Regional agri-food products (RAP)	H ₁						
RAP.1	H _{1.a}	0.8061	0.4969	-0.35	0.727	0.2408	2.6983
RAP.2	H _{1.b}	1.1219	0.5002	0.26	0.796	0.4682	2.6883
RAP.3	$H_{1.c}$	0.4243	0.1592	-2.28 **	0.022	0.2034	0.8854
RAP.4	H _{1.d}	0.3736	0.1741	-2.11 **	0.035	0.1498	0.9314
RAP.5	H _{1.e}	5.3265	1.9041	4.68 ***	0.000	2.6434	10.7329
Quality management practices (QMP)	H ₂						
QMP.1	H _{2.a}	1.1872	0.5789	0.35	0.725	0.4566	3.0872
QMP.2	$H_{2.b}$	2.6092	1.4400	1.74 *	0.082	0.8845	7.6965
QMP.3	H _{2.c}	0.2665	0.2251	-1.57	0.117	0.0509	1.3954
QMP.4	H _{2.d}	0.5633	0.4676	-0.69	0.489	0.1107	2.8664
QMP.5	H _{2.e}	5.8268	5.1699	1.99 **	0.047	1.0238	33.1644
QMP.6	H _{2.f}	0.2931	0.3392	-1.06	0.289	0.0303	2.8329
Environmental management practices (EMP)	H ₃						
EMP.1	H _{3.a}	0.8837	0.3129	-0.35	0.727	0.4415	1.7689
EMP.2	H _{3.b}	1.2277	0.4910	0.51	0.608	0.5606	2.6887
EMP.3	$H_{3.c}$	2.3074	0.8595	2.24 **	0.025	1.1118	4.7885
EMP.4	H _{3.d}	0.5969	0.2671	-1.15	0.249	0.2483	1.4348
EMP.5	H _{3.e}	0.9696	0.4593	-0.07	0.948	0.3832	2.4535
EMP.6	$H_{3.f}$	1.1202	0.7052	0.18	0.857	0.3262	3.8470
EMP.7	$H_{3.g}$	2.1473	1.7861	0.92	0.358	0.4206	10.9623
EMP.8	H _{3.h}	0.8338	0.3632	-0.42	0.676	0.3550	1.9583
EMP.9	H _{3.i}	1.1104	0.5151	0.23	0.821	0.4473	2.7565
EMP.10	H _{3.i}	1.6903	0.6311	1.41	0.16	0.8131	3.5139
EMP.11	H _{3.k}	0.8093	0.3184	-0.54	0.591	0.3743	1.7498
EMP.12	H _{3.1}	0.7155	0.2932	-0.82	0.414	0.3205	1.5974
EMP.13	H _{3.m}	1.4975	0.8348	0.72	0.469	0.5022	4.4655
EMP.14	H _{3.n}	0.6820	0.3627	-0.72	0.472	0.2405	1.9341
Corporate social responsibility practices (CSR)	H_4						
CSR.1	$H_{4.a}$	3.3321	2.5122	1.6	0.11	0.7603	14.6038
CSR.2	$H_{4.b}$	0.2185	0.2826	-1.18	0.24	0.0173	2.7559
CSR.3	$H_{4.c}$	1.6911	0.8278	1.07	0.283	0.6479	4.4143
CSR.4	$H_{4.d}$	1.9089	0.9795	1.26	0.208	0.6983	5.2185
CSR.5	$H_{4.e}$	1.7054	0.9156	0.99	0.32	0.5955	4.8843
CSR.6	$H_{4.f}$	2.0359	0.8678	1.67 *	0.095	0.8829	4.6946
Constant		0.1988	0.3624	-0.89	0.375	0.0056	7.0764
			Observations	265 			
			$I R chi^2$ (31)	68 71			
			$Prob > chi^2$	0.0001			
			$P_{\text{courdo}} P^2$	0.0001			
			I Seudo K	0.1079			

Table 6. Logistic regression model.

Notes: *** 1% significance level; ** 5% significance level; * 10% significance level; "Constant" estimates baseline odds.

Concerning the QMP, there is a positive and statistically significant influence associated with collaboration with customers to improve products or services (QMP.2) and monitoring and correcting non-compliance with quality and safety (QMP.5), ratified in the three models estimated.

Relative to the EMP, the concern about choosing organic and sustainably farmed food (EMP.3) is the only item that reveals a positive and significant influence on restaurants' financial performance in all the models estimated.

In what concerns the CSR, the cooperation with the community to develop the territory (CSR.6) also reveals a positive and significant influence on restaurants' financial performance. It is also worthwhile to outline that for the variable representing the socially responsible decision to retain jobs (CSR.1), a positive, significant influence was detected both in Model 2 and Model 3: the GLM was linked to the Probit Regression.

Variables	Hypotheses	Coef.	Std. Error	Z	p > Z	[95% Conf	. Interval]
Regional agri-food	H_1						
RAP1	H1.	-0.2155	0.6164	-0.35	0.727	-1.4237	0.9926
RAP.2	$H_{1,h}$	0.1150	0.4459	0.26	0.796	-0.7589	0.9889
RAP.3	$H_{1,0}$	-0.8573	0.3753	-2.28 **	0.022	-1.5928	-0.1217
RAP4	H ₁	-0.9846	0.4661	-2.11 **	0.035	-1.8982	-0.0710
RAP.5	$H_{1.e}$	1.6727	0.3575	4.68 ***	0.000	0.9721	2.3733
Quality management	Ha						
practices (QMP)							
QMP.1	H _{2.a}	0.1716	0.4876	0.35	0.725	-0.7840	1.1273
QMP.2	H _{2.b}	0.9590	0.5519	1.74 *	0.082	-0.1227	2.0408
QMP.3	H _{2.c}	-1.3224	0.8447	-1.57	0.117	-2.9780	0.3332
QMP.4	H _{2.d}	-0.5740	0.8301	-0.69	0.489	-2.2010	1.0531
QMP.5	H _{2.e}	1.7625	0.8873	1.99 **	0.047	0.0235	3.5015
QMP.6	H _{2.f}	-1.2273	1.1574	-1.06	0.289	-3.4958	1.0413
Environmental							
management practices	H_3						
(EMP)							
EMP.1	H _{3.a}	-0.1237	0.3541	-0.35	0.727	-0.8177	0.5703
EMP.2	H _{3.b}	0.2052	0.3999	0.51	0.608	-0.5787	0.9890
EMP.3	H _{3.c}	0.8361	0.3725	2.24 **	0.025	0.1060	1.5662
EMP.4	H _{3.d}	-0.5160	0.4475	-1.15	0.249	-1.3930	0.3610
EMP.5	H _{3.e}	-0.0309	0.4737	-0.07	0.948	-0.9592	0.8975
EMP.6	H _{3.f}	0.1135	0.6295	0.18	0.857	-1.1203	1.3473
EMP.7	H _{3.g}	0.7642	0.8318	0.92	0.358	-0.8660	2.3945
EMP.8	H _{3.h}	-0.1818	0.4356	-0.42	0.676	-1.0356	0.6721
EMP.9	H _{3.i}	0.1047	0.4639	0.23	0.821	-0.8045	1.0139
EMP.10	H _{3.j}	0.5249	0.3734	1.41	0.160	-0.2069	1.2567
EMP.11	H _{3.k}	-0.2116	0.3934	-0.54	0.591	-0.9827	0.5595
EMP.12	H _{3.1}	-0.3347	0.4097	-0.82	0.414	-1.1378	0.4684
EMP.13	H _{3.m}	0.4038	0.5575	0.72	0.469	-0.6888	1.4964
EMP.14	H _{3.n}	-0.3827	0.5318	-0.72	0.472	-1.4251	0.6596
Corporate social responsibility practices (CSR)	H_4						
CSR 1	H ₄ .	1 2036	0 7539	1.60	0 110	-0.2740	2 6813
CSR 2	H41a	-1.5210	1.2933	_1 18	0.240	-4.0558	1.0137
CSR 3	н _{4.6} Н	0 5254	0.4895	1.10	0.210	-0.4341	1 4848
CSR 4	H _{4.c}	0.6465	0.5131	1.07	0.208	-0.3591	1.1010
CSR 5	H4.a	0.5338	0 5369	0.99	0.320	-0.5184	1.5860
CSR.6	H ₄ .e	0.7109	0.4263	1.67 *	0.095	-0.1246	1.5464
Constant	±.1	-1.6153	1.8225	-0.89	0.375	-5,1874	1.9568
		1.0100	Observations	265	0.070	0.107 1	1.7000
			Log likelihood	_1/8 /027			
				1 3600			
			RIC	_10022			
			DIC	-1003.09			

Table 7. Generalised linear model: family (binomial > 1) link (logit).

Notes: *** 1% significance level; ** 5% significance level; * 10% significance level; "Constant" estimates baseline odds.

Continuing with discussion of the empirical evidence, in the light of the research hypotheses raised from the theoretical framework, a new set of insights arises regarding the different ways in which using regional agri-food products of quality and the implementation of responsible and sustainable management practices affect the financial performance of restaurants linked to their territories of origin.

Variables	Hypotheses	Coef.	Std. Error	Z	p > Z [95% Conf.		. Interval]
Regional agri-food	H_1						
products (RAP)	1	0.1550	0.0(70)	0.40	0.470	0.0771	0.5450
KAP.1	H _{1.a}	-0.1559	0.3679	-0.42	0.672	-0.8771	0.5652
RAP.2	H _{1.b}	0.1041	0.2633	0.40	0.693	-0.4121	0.6202
RAP.3	H _{1.c}	-0.5156	0.2213	-2.33 **	0.020	-0.9494	-0.0819
RAP.4	H _{1.d}	-0.5939	0.2720	-2.18 **	0.029	-1.1271	-0.0607
RAP.5	H _{1.e}	1.0065	0.2114	4.76 ***	0.000	0.5921	1.4209
Quality management practices (QMP)	H ₂						
QMP.1	$H_{2,a}$	0.1074	0.2928	0.37	0.714	-0.4664	0.6813
QMP.2	H_{2b}	0.5343	0.3171	1.68 *	0.092	-0.0872	1.1559
QMP.3	$H_{2,c}$	-0.7281	0.4896	-1.49	0.137	-1.6877	0.2316
QMP.4	H _{2.d}	-0.3615	0.5004	-0.72	0.470	-1.3422	0.6192
QMP.5	H _{2.e}	1.0468	0.5113	2.05 **	0.041	0.0447	2.0489
QMP.6	H _{2.f}	-0.7043	0.7117	-0.99	0.322	-2.0991	0.6906
Environmental							
management practices (EMP)	H ₃						
EMP.1	$H_{3,a}$	-0.0973	0.2120	-0.46	0.646	-0.5129	0.3182
EMP.2	H _{3h}	0.1326	0.2432	0.55	0.586	-0.3441	0.6093
EMP.3	H_{3c}	0.5045	0.2204	2.29 **	0.022	0.0726	0.9364
EMP.4	H _{3 d}	-0.3218	0.2694	-1.19	0.232	-0.8499	0.2062
EMP.5	H _{3 e}	-0.0141	0.2800	-0.05	0.960	-0.5628	0.5347
EMP.6	H _{3 f}	0.0478	0.3792	0.13	0.900	-0.6955	0.7911
EMP.7	H ₃ o	0.5066	0.4969	1.02	0.308	-0.4673	1.4805
EMP.8	H_{3h}	-0.1255	0.2596	-0.48	0.629	-0.6342	0.3833
EMP.9	H_{3i}	0.0848	0.2793	0.30	0.761	-0.4626	0.6323
EMP.10	H _{3.i}	0.3131	0.2226	1.41	0.160	-0.1232	0.7493
EMP.11	H_{3k}	-0.1098	0.2333	-0.47	0.638	-0.5670	0.3474
EMP.12	H_{31}	-0.2133	0.2410	-0.88	0.376	-0.6857	0.2591
EMP.13	H _{3.m}	0.2458	0.3223	0.76	0.446	-0.3858	0.8774
EMP.14	H _{3.n}	-0.2151	0.3082	-0.70	0.485	-0.8192	0.3890
Corporate social responsibility practices	H_4						
	н.	0 7742	0.4553	1 70 *	0.080	_0 1181	1 6667
CSR 2	н _{4.а} На	-0.8864	0.4555	_1.70	0.009	-2.1101 -2.4128	0 6399
CSR 3	н _{4.b} Н.	0 3003	0.2845	1.14	0.200	-2.4120 -0.2572	0.8579
CSR 4	н _{4.с} Н	0.3859	0.2045	1.00	0.195	-0.2372 -0.1971	0.0579
CSR 5	н _{4.d} Н	0.3327	0.2774	1.00	0.100	_0.2978	0.9632
CSR 6	Н _{4.е}	0.3327	0.2561	1.65 *	0.097	-0.2773	0.9266
Constant	1 4.f	-1.0934	1.1159	-0.98	0.327	-3.2804	1.0937
			Observations	265			
			Log likelihood	-148.3528			
			$LR chi^2$ (31)	69.00			
			$Prob > chi^2$	0.0001			
			Pseudo R ²	0.1887			
			1.0000010	0.1007			

Table 8. Probit regression model.

Notes: *** 1% significance level; ** 5% significance level; * 10% significance level; "Constant" estimates baseline odds.

The results obtained demonstrate that the three different management practices analysed (e.g., quality, environment and social responsibility) associated with the use of promoting regional agri-food products have an impact on the financial results of the restaurants themselves. Thus, and as previously mentioned, the results obtained confirm the results achieved by other works carried out previously and not only those focused on restaurants for example.

Variables	Hypotheses	Coef.	Std. Error	Z	p > Z	[95% Conf	. Interval]
Regional agri-food products (RAP)	H_1						
RAP.1	H _{1.a}	-0.1559	0.3679	-0.42	0.672	-0.8771	0.5652
RAP.2	H _{1.b}	0.1041	0.2633	0.40	0.693	-0.4121	0.6202
RAP.3	H _{1.c}	-0.5156	0.2213	-2.33 **	0.020	-0.9494	-0.0819
RAP.4	H _{1.d}	-0.5939	0.2720	-2.18 **	0.029	-1.1271	-0.0607
RAP.5	H _{1.e}	1.0065	0.2114	4.76 ***	0.000	0.5921	1.4209
Quality management practices (QMP)	H ₂						
QMP.1	H _{2.a}	0.1074	0.2928	0.37	0.714	-0.4664	0.6813
QMP.2	H _{2.b}	0.5343	0.3171	1.68 *	0.092	-0.0872	1.1559
QMP.3	H _{2.c}	-0.7281	0.4896	-1.49	0.137	-1.6877	0.2316
QMP.4	H _{2.d}	-0.3615	0.5004	-0.72	0.470	-1.3422	0.6192
QMP.5	$H_{2.e}$	1.0468	0.5113	2.05 **	0.041	0.0447	2.0489
QMP.6	H _{2.f}	-0.7043	0.7117	-0.99	0.322	-2.0991	0.6906
Environmental management practices	H ₃						
(EMP)							
EMP.1	H _{3.a}	-0.0973	0.2120	-0.46	0.646	-0.5129	0.3182
EMP.2	H _{3.b}	0.1326	0.2432	0.55	0.586	-0.3441	0.6093
EMP.3	H _{3.c}	0.5045	0.2204	2.29 **	0.022	0.0726	0.9364
EMP.4	H _{3.d}	-0.3218	0.2694	-1.19	0.232	-0.8499	0.2062
EMP.5	H _{3.e}	-0.0141	0.2800	-0.05	0.960	-0.5628	0.5347
EMP.6	H _{3.f}	0.0478	0.3792	0.13	0.900	-0.6955	0.7911
EMP.7	H _{3.g}	0.5066	0.4969	1.02	0.308	-0.4673	1.4805
EMP.8	H _{3.h}	-0.1255	0.2596	-0.48	0.629	-0.6342	0.3833
EMP.9	H _{3.i}	0.0848	0.2793	0.30	0.761	-0.4626	0.6323
EMP.10	H _{3.j}	0.3131	0.2226	1.41	0.160	-0.1232	0.7493
EMP.11	H _{3.k}	-0.1098	0.2333	-0.47	0.638	-0.5670	0.3474
EMP.12	H _{3.1}	-0.2133	0.2410	-0.88	0.376	-0.6857	0.2591
EMP.13	H _{3.m}	0.2458	0.3223	0.76	0.446	-0.3858	0.8774
EIVIP.14	П _{3.n}	-0.2151	0.3082	-0.70	0.485	-0.8192	0.3890
Corporate social responsibility practices (CSR)	H ₄						
CSR.1	H_{4a}	0.7743	0.4553	1.70 *	0.089	-0.1181	1.6667
CSR.2	H _{4 b}	-0.8864	0.7788	-1.14	0.255	-2.4128	0.6399
CSR.3	H_{4c}	0.3003	0.2845	1.06	0.291	-0.2572	0.8579
CSR.4	H ₄ d	0.3859	0.2974	1.30	0.195	-0.1971	0.9689
CSR.5	H _{4.e}	0.3327	0.3217	1.03	0.301	-0.2978	0.9632
CSR.6	$H_{4.f}$	0.4246	0.2561	1.66 *	0.097	-0.0773	0.9266
Constant		-1.0934	1.1159	-0.98	0.327	-3.2804	1.0937
			Observations Log likelihood AIC BIC	265 148.3528 1.36115 1003.371			

 Table 9. Generalised linear model: family (binomial > 1) link (probit).

(see [29-31]) but also on other tourist industries, such as the hotel sector (see [31,33]),

Notes: *** 1% significance level; ** 5% significance level; * 10% significance level; "Constant" estimates baseline odds.

Most of the previous studies focused on just one of the management practices used in this study, and, in fact, most showed that the ability of different companies and restaurants to manage their performance in terms of quality, environmental management and responsibility issues is a strategic issue and, when done proactively, is proven to be profitable and sustainable for this type of companies, as also noted by Molina-Azorín et al. [92].

Restaurants' use of quality regional agri-food products has a positive influence on the demand for restaurants (RAP.5), meaning that the sub-hypothesis 1e is not rejected. Accordingly, the implementation of this management option linked to the use of regional agri-food products by the restaurants in this study has a positive and significant influence on their financial performance. This result is in line with Kotler and Gertner [65] and Moilanen [66], as quality regional agri-food products, serving as territorial brands, attract tourists and consumers who go there in search of this type of differentiated product. As argued by Mitchell and Hall [71], it is known that regional agri-food products are generally indicated as one of the main stimulants of the decision to travel and are a factor influencing tourists' choice regarding the choice of restaurants to visit. The use of regional agri-food products in restaurants can also be a source of competitive advantage for restaurants that serve them, at the same time influencing the territory's attractiveness and differentiation of the place of origin [71].

On the other hand, when restaurants choose to use the PDO of quality regional agrifood products in their marketing and advertising strategies (RAP.3) and invest in improving their image through using quality regional agri-food products (RAP.4), these options have a negative and significant influence on their financial performance, which signals the rejection of the sub-hypotheses 1c,d, in corresponding terms. This result was found in the three discrete choice models. This somewhat surprising result may be explained in two ways, namely the recession caused by the pandemic crisis and the added financial effort implied. However, the impact that these practices could have over time in strengthening the competitive capacity and performance of restaurants linked to their territories of origin should not be underestimated.

Monitoring and correcting non-compliance with quality and safety in restaurants (QMP.5) and adopting collaborative processes with customers with a view to improving their products or services (PGQ.2) in the area of quality management practices (QMP) have a positive influence on restaurants' financial performance, indicating that the sub-hypothesis 2b is not rejected. This corroborates the previous conclusions of Fotopoulos and Psomas [89], Alonso-Almeida et al. [33] and Bagur-Femenias et al. [90], since monitoring and correcting shortcomings allows a reduction in costs, either by eliminating activities that do not create value or by increasing efficiency in performing key tasks, i.e., requiring the same workload with fewer resources allocated to the process, which can bring gains in productivity and greater flexibility. Adopting quality management practices is therefore a critical path to obtaining better financial performance in restaurants, but this means strengthening competitiveness considering the crossing of critical success factors in both external and internal aspects [88].

Regarding the adoption of environmental management practices (EMP), when restaurants choose the option of using organic and sustainably farmed food (EMP.3) in their menus, this is revealed to have a positive and significant influence on their financial performance, being corroborated by the estimators obtained in the logit (Model 1) and GEV (Model 2) models. Thus, the sub-hypothesis 3c cannot be rejected. This is also in line with previous studies indicating a positive relation between environmental management practices and firms' economic-financial performance [30].

Concerning the corporate social responsibility practices (CSR), a positive and significant influence on a restaurant's financial performance (FPR) is detected, associated with the items representing the socially responsible practice of commitment to retaining employees' jobs, even in crisis situations (CSR.1), and the cooperation with the community in favour of the territory's sustainable development (CSR.6). Thus, sub-hypotheses 4a,f cannot be rejected, correspondingly.

These results are aligned with the previous conclusions of Kang et al. [98], who stated that CSR influences financial performance in the hotel and tourism sector. In this same sector, there has been greater awareness of CSR, due to the growing importance attributed

to reputation and brand capital [98] and the growing tendency to consume appropriate and socially fair products in the hotel and restaurant sector [104]. As indicated by Lee et al. [99], despite there being no clear relation between CSR and FPR in the restaurant industry, except for in Kang et al. [98], which found a positive effect of CSR (i.e., socially responsible activities) on the value of restaurant firms in the USA, this is corroborated here in the set of evidence obtained. This underlines the importance of socially responsible actions for the business sustainability of restaurants linked to their places of origin.

5. Conclusions

This study assesses the different ways in which combining the use of regional agri-food products and the implementation of sustainable and responsible management practices, including quality management, environmental management and corporate social responsibility, influences the financial performance of restaurants linked to their places of origin, as applied to units located in the Central Region of Portugal.

The empirical evidence obtained shows that the place branding of certain territories, when based on differentiated quality agri-food products linked to the territory, can serve as a lever to promote sustainable tourism, with a positive influence on many tourism-related sectors of activity, with crossed multiplying effects, for example in hotels and restaurants.

Standing out as differentiating elements of this study are the use of variables representing the strategic option by regional restaurants to use quality regional agri-food products, associating this option, in an innovative way, with variables related to sustainable and responsible management practices, as a way to strengthen the financial performance of these differentiated units in the hotel and restaurant sector. The evidence presented here adds knowledge and diversity to the literature on sustainable, responsible management in the restaurant sector, which, as pointed out by Higgins-Desbiolles et al. [21], has so far been centred almost exclusively on the environmental aspect of sustainability.

In addition, this study addresses the most recent needs and concerns of consumers, since, besides the constant concern about safety, certification and food quality, as indicated by Cantele and Cassia [19], consumers increasingly value matters related to the origin of food, the sustainability of farming and production processes, environmental impacts, the use of harmful, chemical pesticides and fertilisers, combating food waste, social justice, wealth redistribution and respect for workers' rights throughout the value chain.

Regarding the implications of this study, these lie at two levels of intervention. Firstly, it gives political decision-makers bases for decisions on new lines of strategic intervention, implementing new public policies oriented towards place branding, based on the production, distribution and commercialisation of differentiated quality regional products. Interventions of this nature will allow not only the strengthening of territorial identity for tourism and internal investment but can also benefit the different sectors of the agri-food industry, creating and reinforcing supporting, interdependent connections, which can have multiplying crossed effects on various sub-sectors of economic activity related to the territory of origin, with a view to sustainability. Secondly, for agents in the restaurant sector, especially for the differentiated group of founders and managers of restaurants linked to the territory, this study gives a series of significant insights into innovation of their business model towards responsible, sustainable management, which can lead to achieving higher levels of financial performance.

This study faced several limitations, which to some extent affect the results obtained. The first regards the impossibility of generalising the results, due to the study being applied exclusively to restaurants located in the Centre Region of Portugal. It should be noted that, due to limited access to data originating from the Regional Spanish Restaurants located in Extremadura Region, it was not possible to provide a comparative analysis between the two samples, as originally planned. This was mainly justified by the number of closures associated with the Pandemic crisis. The second is related to the field work collection of primary data occurring in the midst of the pandemic crisis caused by SARS-CoV-2. Therefore, as the restaurant sector was one of those hardest hit by the crisis, the authors

recognise that the answers to the questionnaire may have been affected. This situation also meant that data collection could not be carried out face-to-face in the restaurants themselves, which may have affected the answers and also limited the study to the Centre Region of Portugal.

In future research, it will be important to follow new exploratory paths to be able to make a comparison between different territorial and international situations, in order to advance the still limited knowledge about the different mechanisms of associating place branding, based on agri-food products, with the circular practices of restaurants linked to the territory, spas and other categories of themed hotels linked to the land.

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