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Environmental Proactivity and Environmental and Economic Performance: Evidence from the Winery Sector

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Abstract: Environmental sustainability in the winery sector is receiving increased attention from governments, environmental groups, and consumers. The aim of this study is to explore the relationship between the degree of proactivity of a firm's environmental strategies and its business performance. The novelty of this research work lies in its definition of business performance, which includes business environmental performance in terms of reducing the firm's environmental impacts and eco-efficiency in the use of resources such as water, energy, and raw materials, in addition to its economic performance. A model is proposed and tested using a sample of 312 Spanish wineries. Data were analysed using partial least squares path modelling (PLS-PM). The fitness and robustness of the structural model proved adequate. The results indicate positive correlation of environmental proactivity with economic and environmental performance. Although environmental proactivity improves business performance, it has a greater impact on reducing environmental impacts and improving eco-efficiency.

Keywords: environmental proactivity; business performance; eco-efficiency; winery sector

1. Introduction

The search for new sources of competitive advantages has resulted in companies reconsidering the role of environmental topics in corporate strategy against a backdrop of overwhelming concern for environmental issues. Proof of this widespread concern is the Directorate-General for Environment study [1], which reveals that 95% of Europeans believe that protecting the environment is important to them personally. Companies can no longer remain oblivious to these widespread environmental concerns. The inclusion of environmental topics in corporate strategy is therefore a growing market requirement due to pressure from various company stakeholders [2,3]. Environmental corporate strategy could also represent a source of competitive advantage [4] not only in terms of eco-efficiency or cost reduction as a result of improved environmental performance and eco-innovation, for example, but also by differentiating a company from its competitors in terms of an improvement in the company's reputation for responsible management. Eco-efficiency and improved reputation focus on creating competitiveness through environmental or sustainable progress, thus enabling companies to act as driving forces for sustainable development [5,6].

The Triple Bottom Line (TBL) concept proposed by Elkington [7] considers there to be three dimensions for tackling sustainability (the social, the economic, and the environmental dimension) and that in order to achieve sustainable development these must be linked. According to Goodland [8], however, there is a stronger link between the economic and the environmental dimension since the aim of many of the environmental strategies and instruments implemented in business is to achieve

an economic-environmental balance. This balance is geared towards environmental performance and leads to economic performance, giving rise to the concept of eco-efficiency. Environmental sustainability issues include resource efficiency, dematerialization, and the reduction of waste and emissions, thereby resulting in an improvement in environmental performance and/or a lower environmental impact [9].

The European Parliament [10] defines eco-innovation as the introduction of any new or significantly improved product (good or service), process, organizational change, or marketing solution that reduces the use of natural resources (including materials, energy, water, and land) and decreases the release of harmful substances during the product life-cycle. Eco-innovation is therefore a type of innovation that instigates eco-efficiency [11].

According to North [12], the aim of environmental management is to integrate environmental protection into each corporate management function in order to achieve optimal economic and environmental company performance. Unlike an environmental reactivity strategy, which only complies with current legislation requirements, corporate environmental proactivity is characterized by the voluntary adoption of measures which help reduce the environmental impact [13]. The variety and diversity of these measures transforms environmental proactivity into a complex, multidimensional construct, as indicated by Aragón-Correa and Sharma [14]. A core question in this context is to identify the dimensions of environmental proactivity in wineries, a question which has seldom been addressed in previous research and which serves as the starting point for this research work.

Many publications have analysed the impact of environmental proactivity on corporate results [15] and different conclusions have been reached. While some authors (e.g., [16,17]) believe the effects of environmental proactivity to be significant and positive, others find no clear relationship (e.g., [18]) or consider them to be negative (e.g., [19]). As Sen et al. suggest [20], one of the main reasons for the lack of any conclusive results might very well be due to the lack of homogeneity both in environmental proactivity dimensions and in the variety of corporate results employed (e.g., profit margin, sales growth, stock price, or perceived customer satisfaction). Additionally, Sharma and Vredenburg [21] point out that it is difficult to make generalizations when analysing companies from different sectors. A common sectoral context would therefore facilitate control of important external influences such as the level of environmental regulation, the amount of pressure from lobby groups, and/or environmental standards of common practices in the industry [22]. From an environmental perspective, however, very few studies analyse a specific sector and even fewer have focused on the winery sector [23].

This work therefore aims to fill a gap in current research by empirically analysing the effects of the level of environmental proactivity in wineries on perceived economic and environmental results. With this as its main contribution, we also explore the multidimensional nature of environmental proactivity in the winery sector. This sector was chosen not only because of the shortage of research work in this context but also due to the special significance of this industry in Spain in terms of surface area cultivated, quantity of wine produced, and economic importance of the sector. This is traditionally considered to have a low environmental impact but the wine-making business and related support activities affect other high value-added agricultural sectors, in particular, and the ecosystem of a region of origin, in general, with particular importance for supply chain selection [24] and as a key factor for regional competitiveness [25]. The Spanish wine sector also faces a series of threats relating to recent environmental changes that will determine company survival. Examples of such threats are the emergence of increasingly competitive countries in the worldwide wine market or the appropriate application of Common Market Organization (CMO) wine regulations [26]. In recent years we have seen how one of the tools used by wineries on a corporate level to distinguish them from their competitors is the environmental issue, both in terms of organic products and ecological processes and also in terms of protecting the environment [26,27]. In this respect, the mere fact of being more environmentally proactive could result in greater sales not only in the Spanish market but also through an increase in exports or access to countries with stricter environmental controls.

In order to achieve the objectives proposed, this article is structured as follows: firstly, the theoretical framework is explored and hypotheses formulated; secondly, the data gathering method is described; thirdly, the results obtained are presented and discussed; and finally, the main conclusions and limitations of the study are outlined and ensuing future lines of research are detailed.

2. Theoretical Approach

Generally speaking, corporate survival depends on the natural environment and it is therefore extremely important that companies find a balance to enable system supply and enrichment. The incorporation of the environmental variable into corporate strategies, however, has largely depended on the level of corporate proactiveness [28,29]. According to Lumpkin and Dess, this is understood to be an "opportunity-seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create change and shape the environment" [30] (p. 431). The aim of any environmental proactivity strategy is therefore to reduce the environmental impact and manage the interface between business and nature beyond imposed compliance [14,31], and this entails implementing a variety of voluntary practices and initiatives in order to improve environmental performance.

While environmental literature identifies different types of environmental practices, there is no common consensus about the number or content of each group. The authors González-Benito and González-Benito [32] categorize the set of possible environmental practices into three groups: planning and organizational practices, which include those for developing environmental policies and environmental impact analysis; operational practices, which include those that focus on more environmentally-friendly product design and development and manufacturing and operational methods and processes; and communicational practices, which concerns how the company informs its social and institutional environment of the environmental actions which it has adopted. The author Hart [33] also divides them into three large groups, but these are to do with practices relating to pollution prevention, which could result in lower costs by improving corporate profitability; those relating to product protection, which influences the selection of raw materials and product design in order to minimize the environmental impact of the goods and services on offer; and those of sustainable development, which foster market creation in undeveloped economies while promoting rational consumption in developed economies. Finally, other authors (e.g., [28,34]) simplify their classification by differentiating between those practices that indicate a basic environmental or control commitment, which consist of eliminating, reducing, or treating pollutants once they have been generated (i.e., at the end of the production process), and those that involve an advanced environmental or prevention commitment, which attempt to reduce resource consumption and avoid excessive waste and pollutant generation.

The diversity of environmental practices representing environmental proactivity and the consideration of environmental proactivity as a dynamic capability [14,35] highlight the complex nature of this construct. This complexity may result in the lack of any consensus in literature about the best way to measure environmental proactivity. While some authors use a one-dimensional approach (e.g., [29]), others favour a multidimensional view of environmental proactivity (e.g., [32]). In this respect, Banerjee et al. [36] identify four dimensions that comprise the components of a reliable, multidimensional proactive environmental construct: internal and external environmental orientation, and environmental corporate and marketing strategy. Walls et al. [37] point out that most companies appear to develop one or several of six capabilities for building an environmental strategy: a historical orientation, network embeddedness, stakeholder networks, ISO certification schemes, top management skills, and human resources developed to address environmental issues. Although both emphasize the importance of strategy in identifying and measuring environmental proactivity, neither considers whether it is a formative or reflective construct for inferring the direction of causal flow between the construct and its indicators [38]. Sarkis [39] therefore recommends that a generic strategic framework be used to identify the logical sequential process in the implementation of a proactive environmental process [40]: analysis and planning, organization and implementation, and control. To begin integrating environmental proactivity into the corporate strategy, each of the dimensions of

strategy should be also linked closely to various environmental issues. Since the causal action flows from the latent variable to the indicators, Wright et al. [41] consider environmental proactivity to be a second-order reflective multidimensional construct.

Various research paradigms have attempted to explain the determining factors of corporate environmental proactivity, and these include the focus of natural resources [24], the perspective of stakeholders [25], or the cognitive focus [26]. The natural resource-based view of the firm attempts to explain the development of competitive corporate advantages through the strategic handling of the firm's relationship with the environment. This theory suggests that given the increase in restrictions imposed by the natural (biophysical) environment, the organization's willingness to deal with such restrictions will determine the appearance of valuable, rare, and imperfectly imitable capabilities that will entail a superior economic and social result [42]. This is why environmental proactivity can represent a source of sustainable competitive advantages [33,36] through cost reduction [43,44], product differentiation [45,46], or the creation of new business opportunities [47], which should impact positively on the economic results and reduce the environmental impact of companies by improving their environmental result. The authors Liu et al. [48] therefore performed a meta-analysis of sixty-eight studies which had been conducted in different countries and they reached the conclusion that environmental proactivity affects both the companies' economic and environmental results, although the strength of this impact varies according to the reference country as activity is developed with different regulations, stakeholder norms, and managerial mindsets.

The authors Judge and Douglas [49] confirm the relationship between environmental proactivity and environmental results and argue that it would be pointless otherwise since the ultimate objective and raison d'être of environmental management is to improve environmental results. The relationship between environmental proactivity and economic results, on the other hand, is not so obvious. Certain authors claim that the high costs associated with the implementation of environmental practices cancel out any possible competitive advantage that might be achieved, thereby discouraging firms from implementing them, and that economic results are unaffected [13,18] or negatively affected [19,50] by environmental proactivity. Others (e.g., [21,51]) indicate that it is the sector in which the firm operates that is responsible for this lack of consensus since environment-related practices and standards vary according to economic activity and so in many cases they are not comparable.

Very few studies have in fact been conducted in the wineries sector to identify the competitive advantage drivers in this industry in terms of environmental proactivity (e.g., [26,52]). These studies have focused on the factors leading to the adoption of an environmental management system (EMS) (e.g., [53,54]) or have examined subjects relating to consumer perceptions, brand image, or eco-labelling or eco-branding product differentiation strategies (e.g., [55,56]). Authors such as Atkin et al. [23] go even further and attempt to confirm links between the adoption of an EMS and entrepreneurship in wineries, but are unable to link this adoption with any cost reduction. One reason given by the authors for this is that although costs can easily and quickly be quantified, benefits are often long term and harder to measure. However, significant links were found with an increase in sales in new markets, an improvement in customer satisfaction, and an improvement in the corporate image. In this context, the following hypotheses are considered:

H1: *Environmental proactivity (EP) has a positive impact on the economic result of wineries (EcP).*

H2: *Environmental proactivity (EP) has a positive impact on the environmental results of wineries (EnP).*

Finally, previous articles [49,57] established the positive relationship between environmental performance and economic results, although this could be affected by the existence of resources or capabilities in addition to the implemented environmental practices [46], by the way in which these practices are implemented [13], or by the phase of the economic cycle [58]. Generally speaking, any improvement in environmental performance in terms of minimizing resource consumption and pollutant emissions [12] results in cost savings. This supports the concept of eco-efficiency [46], which is taken to be the input ratio of resources used and waste generated in relation to the final product obtained [59]. The following hypothesis can therefore be formulated:

H3: *The environmental result (EnP) has a positive impact on the economic result of wineries (EcP).*

By way of summary, Figure 1 shows the research model proposed in line with the working hypotheses. By identifying the dimensions of the environmental proactivity construct [32,60], we analyse the effects of this on the economic and environmental results of wineries [49], and of the environmental results on the economic results [57].

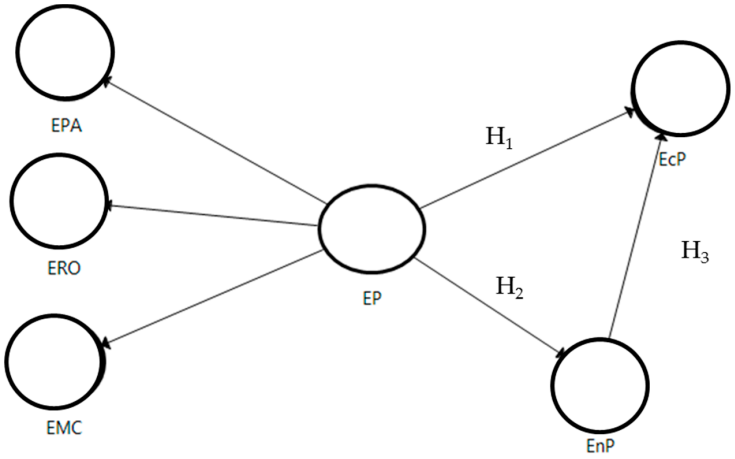

Figure 1. Research model and hypotheses. Notes: EPA: Environmental planning and analysis; ERO: Environmental responsibility and organization; EMC: Environmental management control; EP: Environmental proactivity; EcP: Economic performance; EnP: Environmental performance.

3. Materials and Methods

3.1. Data Collection and Sample

The data used in this work are part of a wider research project and were gathered from computer-assisted telephone interviews (CATI). These enabled information to be collected while data was simultaneously recorded, coded, and cleaned. The questionnaire was designed by taking into account previously published work and the opinions of a panel of environmental experts comprising managers from the Wine and Vine Institute of Castilla-La Mancha (IVICAM) and academics. The questionnaire pre-test was conducted with one-on-one interviews with those responsible for environmental matters or, in their absence, the managers of ten local wineries. Some of the questions were subsequently modified, reordered, or rewritten to aid comprehension. The final questionnaire consisted of thirty-eight questions (see Appendix A) which were grouped into three sections. The first section was entitled winery descriptive information and its seven questions collected data on turnover, number of employees, number of partners and how many of these belong to the same family, the existence of any environmental management system, and how long the winery has been operating. The second group of questions analysed environmental proactivity with twelve questions relating to environmental planning and analysis practices, environmental responsibility and organization practices, and environmental management control practices. The third section included nineteen questions about corporate performance to examine the interviewee's perception of the winery's economic and environmental results. The fieldwork was conducted during November 2015 and each interview lasted an average of 12.45 min. Every participant received the questionnaire before the interview in order to increase participation in the study and to speed up the phone data gathering process.

The study population for this study was every Spanish winery and a stratified sample was selected by regions from the information contained in the SABI database. The final sample comprised 312 Spanish wineries, which represented a sample error of 3.5% for a confidence level of 95.5%.

The model hypothesis was compared using the structural equation modelling (SEM) methodology with the partial least squares (PLS) technique and SmartPLS 3 software [61]. This technique has been

used in previous similar studies because of its ability to predict one or more dependent variables of a model with a limited theoretical base.

3.2. Measures

In order to measure the variables in the study, Likert-type 5-point scales were compiled to record the extent to which the interviewees agreed or disagreed with a series of statements, with 1 corresponding to "strongly disagree" or "not at all" and 5 to "strongly agree" or "to very great extent", depending on the question.

3.2.1. Environmental Proactivity

Previous research suggests that environmental proactivity is a second-order reflective multidimensional construct [41] due to its multifaceted nature that is reflected in a multitude of different environmental practices [13,36]. In order to develop a measuring scale for environmental proactivity dimensions in wineries, we consulted both general and sector-specific literature. Following on, therefore, from Barnerjee et al.'s [36] concept of corporate environmentalism and Sarkis's proactive environmental process [39], it was deemed appropriate to separate the environmental practices of wineries into three different dimensions:

(1) Environmental planning and analysis (EPA): this comprises five items to evaluate the integration level of environmental concerns in the winery's strategic planning process.
(2) Environmental responsibility and organization (ERO): this comprises three items and reflects the importance placed by the winery on the environment and the communication of environmental values to its members.
(3) Environmental management control (EMC): adapted from de Pondeville et al. [62], this dimension comprises four items relating to feature rules, standard operating procedures, and result controls.

3.2.2. Corporate Performance

In order to properly record the performance of wineries, economic and environmental results should be separated accordingly:

(1) Economic performance: in this research work, a subjective measure has been chosen and those responsible for environmental issues in wineries were asked to evaluate the impact of implemented environmental practices on twelve items relating to economic performance in accordance with those proposed by Sellers-Rubio [63].
(2) Environmental performance: in order to evaluate environmental performance, we chose a similar approach to the one adopted by Atienza-Sahuquillo and Barba-Sánchez [2]. These authors used objective environmental performance measures such as levels of emissions, discharge, waste, or noise in addition to consumption of water, energy, or raw materials.

4. Results

This section details the results obtained for the proposed research model. A PLS model must be analysed and interpreted in two stages, although the structural measurement parameters are estimated in a single step [64]. During the first stage, the measurement model is evaluated by analysing whether the theoretical concepts are correctly measured using the observable variables; in the second stage, the structural model is evaluated in terms of, for example, the magnitude and significance of relationships between the different variables.

4.1. Measurement Validation

The measurement model for reflective constructs is assessed in terms of individual item reliability, construct reliability, convergent validity, and discriminant validity. Individual indicator reliability is

analysed using indicator loading values. In order for an indicator to be accepted as part of a construct its loading should be ≥0.707, although Hair et al. [65] believe that indicator loadings of between 0.4 and 0.7 could remain if this helped improve content validity. In our case, the following items in the model have been debugged: epa5 of the *environmental planning and analysis* construct; ecp1, ecp3, ecp4, ecp11, and ecp12 of the *economic performance* construct; and enp6 and enp7 of the *environmental performance* construct.

Construct reliability is examined using Cronbach's alpha and the composite reliability (CR) index and results are shown in Table 1. In both cases, all construct values are greater than the critical value of 0.7, although Nunnully [66] suggests the stricter criterion of being equal to or greater than 0.8, a condition satisfied by this research except in the case of the *environmental responsibility and organization* (ERO) construct, where the value is 0.717.

Table 1. Measurement validation.

Construct [1]	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Environmental planning and analysis (EPA)	0.895	0.928	0.762
Environmental responsibility and organization (ERO)	0.717	0.830	0.621
Environmental management control (EMC)	0.844	0.895	0.681
Environmental proactivity (EP)	0.915	0.929	0.568
Economic performance (EcP)	0.847	0.884	0.523
Environmental performance (EnP)	0.902	0.921	0.566

[1] All constructs are reflective.

Convergent validity was assessed using the average variance extracted (AVE), which implies that a set of indicators represents a single construct with a value that is greater than 0.5 [67], a condition satisfied by every construct used in this research work (see Table 1).

Finally, in terms of the discriminant validity, one of the most accepted methods in PLS consists of comparing the square root of the AVE of each construct with the correlations of each construct with the others [68]. Table 2 presents the results obtained, and these enable us to confirm the existence of discriminant validity between constructs, since the diagonal elements should be larger than the off-diagonal elements. In the case of correlation between the superordinate environmental proactivity (EP) construct and its dimensions (EPA, ERO, EMC), the values are high precisely because it is a reflective second-order construct with first-order constructs which are also reflective [69,70].

Table 2. Discriminant validity [1].

Construct	EPA	ERO	EMC	EP	EcP	EnP
EPA	0.873					
ERO	0.612	0.788				
EMC	0.650	0.655	0.825			
EP	0.872	0.755	0.823	0.754		
EcP	0.294	0.310	0.268	0.313	0.723	
EnP	0.262	0.231	0.295	0.315	0.226	0.752

[1] Diagonal elements are the square root of variance shared between the constructs and their measures (AVE). Off-diagonal elements are the correlations between constructs. For discriminant validity, see Table 1.

4.2. Structural Validation

The main causal relationship being contrasted is how a superordinate construct (EP) determines two latent reflective variables (EcP and EnP). The structural model is assessed using the significance of the path coefficients, by observing the explained variance values (R2) of the dependent variables and the standardized root mean square residual (SRMR).

The Bootstrap resampling technique was used to determine the statistical significance of the path coefficients and this generated 5000 alternative samples from the original data matrix. The parameters for each of these subsamples were re-estimated with PLS, and the *t*-value was used to contrast the accuracy of these estimates. The results are shown in Table 3 and these confirm the significance of every path coefficient. Although the effect regarding the relationship between the *environmental performance* and the *economic performance* constructs is not as strong as the others (significant at the 0.05 level), all of the proposed hypotheses can be accepted a priori.

Table 3. Structural model.

Hypothesis	Suggested Effect	Path Coefficients	*t*-Value (Bootstrap) [1]	Support
H1: EP → EcP	+	0.269 ***	4.472	Yes
H2: EP → EnP	+	0.315 ***	6.864	Yes
H3: EnP → EcP	+	0.141 *	2.313	Yes

[1] 5000 bootstrap samples; * $p < 0.05$; *** $p < 0.001$ (based on $t(4999)$, one-tailed test).

Table 4 shows the effects of the explicative latent variables on the endogenous latent variables. Since the superordinate environmental proactivity (EP) construct can predict or explain more than 50% of all of its dimensions, in Chin's terminology the amount of construct variance that is explained by the model is substantial [5]. However, for endogenous constructs relating to the result, both for the economic (EcP) and environmental (EnP) constructs, the R^2 are around 10% which is the recommended minimum [6].

Table 4. Effects on endogenous variables.

	R^2	Direct Effect	Correlation	Variance Explained
EPA	*0.786*			
EP		0.901	0.872	78.56%
ERO	*0.570*			
EP		0.755	0.755	57.00%
EMC	*0.740*			
EP		0.899	0.823	73.98%
EcP	*0.116*			
H1: EP		0.269	0.313	8.42%
H3: EnP		0.141	0.226	3.19%
EnP	*0.099*			
H2: EP		0.315	0.315	9.92%

Finally, SRMR is a goodness of model fit measure for PLS [71], which answers the question of whether the correlation matrix implied by our model is sufficiently similar to the empirical correlation matrix. In this case, the SRMR Composite Model is 0.079 ($\leq$0.08), which means that it is adequate.

Figure 2 summarizes the final estimated model. It is possible to observe how the EP is a multidimensional construct, as suggested by specialist literature [13,16], which affects corporate results both on an economic (EcP) and environmental level (EnP). Moreover, environmental results also have a certain influence on economic results.

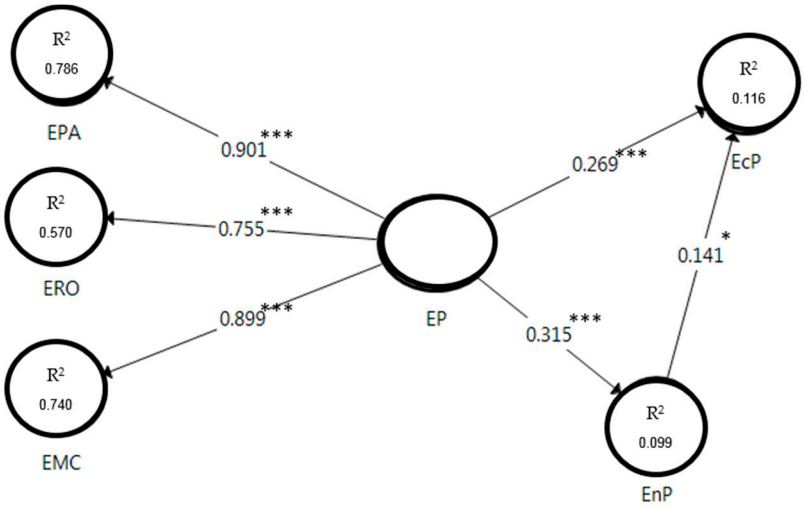

Figure 2. Structural model results. Note: Significant at * $p < 0.05$; *** $p < 0.001$.

5. Discussion

Although the results confirm the multidimensional nature of the EP construct in line with many previous studies [14,32], the dimensions identified reveal certain peculiarities. The authors Henriques and Sadorsky [51] or Lazaro et al. [72] believe that this diversity in environmental proactivity dimensions undoubtedly stems from the different circumstances that surround the environmental problem in different countries and sectors of activity, which suggests that the relationships and implications between environmental parameters are not universal but rather should be studied in different contexts. As such, in the Spanish context of wineries, EP is understood to be a strategy of integration of the environmental variable in all business areas [63] and three EP dimensions are considered [26]: environmental planning and analysis (EPA), which consists of such things as designing a defined and formal environmental policy, identifying and evaluating environmental impacts, or defining environmental objectives in the sphere of the firm's strategic plan; environmental responsibility and organization (ERO), which concerns the involvement and commitment of all organization members and their participation through suggestions or specific work teams; and environmental management control (EMC), which includes the so-called management control for sustainability [70] or environmental management control systems (EMCS) [61] (i.e., the existence of formal procedures that gather, review, and audit the environmental impact, waste, and consumption reduction programs and environmental risks). The relationships established between EP and its different dimensions are significant and positive and this explains the high variance percentages (78.6%, 57%, and 74%, respectively). There is therefore enough evidence to conclude that environmental proactivity is reflected in the environmental practices adopted by the company.

Having identified EP dimensions, the question was whether this had a positive impact on the firm's economic results, as indicated by most reference literature [13,46], either directly or indirectly through an improvement in environmental results and a reduction in consumption or environmental impacts. In the case of wineries, EP has a positive and significant effect on perceived corporate performance in line with the results obtained by Atkin et al. [23]. The first hypothesis is therefore accepted despite the very low explained variance (11.6%). Unsurprisingly, other factors do exist that determine and explain the economic results of wineries, such as label and designation of origin [27]. The importance of these results stems from the fact that wineries have traditionally ignored environmental concerns which they consider to be irrelevant since this is not one of most polluting sectors [73]. There is, however, evidence to suggest that such an approach is wrong. According to literature, the reasons for why this relationship exists include eco-efficiency and eco-innovation [6].

In terms of eco-efficiency, this research has demonstrated that EP also has a positive and significant impact on environmental results by reducing resource consumption and waste generation, and so the second hypothesis is accepted. However, environmental proactivity's contribution to the improvement of these environmental results is scarce, with low explained variance (9.9%), and this supports the conclusion that other factors exist in addition to environmental proactivity that could affect their improvement such as, for example, pressure from stakeholders or stricter legislation. According to González-Benito and González-Benito [32], the practices to change environmental behaviour must emanate from within the firm itself. Such practices include those that focus on the eco-design of products and productive processes, which are in turn the least visible for the socio-economic environment. Additionally, the implementation of standard ISO14001 on an operational level merely requires compliance with current legislation and Pomarici et al. [74] believe that this could involve limited environmental commitment to protecting the natural environment. It is therefore necessary to explore in greater depth the additional causes which lead wineries to reduce their consumption and environmental impact, and future research should be conducted and quantitative studies be supplemented with qualitative ones to enable new impact factors to be identified.

In terms of the last hypothesis proposed, indicating that the environmental result has a positive and significant effect on the economic result of wineries would lead us to accept this fourth hypothesis despite the low explained variance (3.19%). Authors such as Junquera and Del Brío [34] or Bansal and Roth [75] point out that economic motivation would not be the main reason why a firm would choose environmental proactivity, but rather that variables such as the environmental attitude, expectations, and motivations of managers would be key to explaining corporate environmental proactivity. Future research should investigate these associations and delve deeper into possible moderating and mediating effects.

In short, this research supports the conclusion that the environment can also be a differentiating factor by creating competitive advantages that improve the competitiveness of wineries through income generation as a result of cost reduction or better market perception, for example, although there are many unknown factors to be addressed in this research context.

6. Conclusions

In an increasingly competitive and more socially responsible setting, the generation of competitive advantages associated with sustainability is paramount for the survival of firms [6] in general and wineries in particular [73]. Sustainability is the path to finding economic, ecological, and social balance, resulting in prosperity and the capitalization of new resources [7]. The wineries under analysis maintained their sustainability commitments despite the economic downturn.

This research focuses on the environmental question and identifies three environmental proactivity dimensions in wineries (EPA, ERO, and EMC) and their possible relationship with corporate performance. Although the topic of economic profitability of environmental proactivity is still being discussed in environmental literature [12,19], the results obtained in this research reveal that a direct and significant relationship does exist and that this has clear management implications. This is because it could provide wineries with competitive advantages as a result of cost reduction or product differentiation thanks to eco-labelling, for example, and through an improvement in the firm's reputation [26]. Consumers might consider products to be unique or innovative if they are produced in a sustainable and environmentally-friendly way [73]. Previous studies, however, reveal that the personal environmental values of those responsible are also important for environmental proactivity in this sector [22]. It is therefore also important to analyse the relationship between this environmental proactivity and environmental results.

According to the outcomes, not only does EP reduce resource consumption and waste generation, thereby minimizing the environmental impact of wineries, but these environmental results also have a positive impact on perceived corporate performance. Future research should therefore analyse the mediating effect that environmental results have on the relationship between EP and economic results. In addition to this indirect effect, it would also be interesting to analyse the effect that other

variables such as the pressure exercised by stakeholders [38] or the perception of directives relating to the environment [30] have on environmental proactivity and their relationship with economic results in order to increase the explained variance percentage, one of the main limitations of this work.

Another limitation relates to result generalization, since this research work is based on a cross-sectorial sample limited to a single country. Future research might also focus on other national contexts in order to enable a comparison to be made between Spanish wineries and those of benchmark European Countries [72], such as France and Italy, although it would be necessary to consider the environmental regulatory differences between nations.

Although this work mainly focuses on the environmental proactivity of wineries, it would also be interesting to discover consumer opinion to analyse the impact that good corporate environmental practices have on the market. In this respect, the perception of wineries is not particularly positive [52] and the firm needs to adopt a more aggressive environmental education and communication strategy in order to reap the benefits in terms of higher sales in the medium- and long-term. Future research is needed to determine the longitudinal impacts of this environmental education and consumer awareness.

In terms of the implications of this study for practitioners working in the sector, it is possible to draw an interesting conclusion and that is environmental proactivity could be a source of competitive advantage since it directly affects a firm's performance and can improve efficiency and competitiveness. It does this either internally by reducing costs and promoting innovation, or externally by building and reinforcing the brand. It is evident that being a green winery helps to cement customer brand loyalty and generate new customers. Thanks to environmental proactivity, wineries can therefore develop new strategies to survive economic downturns and achieve better market positioning.

By way of conclusion, it is possible to extract useful data from the final analysis model regarding the global and specific environmental benefits of environmentally proactive wineries in terms of costs, differentiation, reputation, and sustainability for the stakeholders and policy-makers interested in improving the overall sustainability of the wine industry.

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Appendix A

The questionnaire gathers information about the following items:

1. Winery descriptive information

    a Turnover
    b Number of employees
    c Number of partners and how many of these belong to the same family
    d Existence of any environmental management systems and since when
    e Age of winery

2. Environmental proactivity: rate how far you agree with the following statements in terms of your winery (1 corresponding to "strongly disagree" and 5 to "strongly agree"):

    a This winery has a clearly-defined, formal, written environmental policy.
    b Our strategic plan includes an extensive, detailed section outlining our environmental objectives.

c We constantly identify and evaluate new environmental aspects in terms of their impact.
d We provide our suppliers with a detailed, written list of environmental requirements.
e We have conducted a life cycle analysis of the main products manufactured in this company.
f Each and every one in the winery is responsible for environmental performance.
g Employee suggestions are an excellent source of ideas for improving the environmental result.
h Formal work teams are used to identify environmental problems and opportunities and to develop solutions.
i The environmental impact of operations is formally reviewed at least once a year.
j Formal procedures exist to examine the environmental implications of new investments.
k An annual audit of waste reduction programmes and their results is conducted in all production areas.
l An annual audit of the environmental risks of existing production processes is conducted in all production areas.

3. Corporate performance: Assess the extent that implemented environmental practices have had on the following questions in terms of your winery (1 corresponding to "not at all" and 5 to "to a very great extent"):

a Loyalty of existing customers
b Attracting new customers
c Access to financial aid and subsidies
d Relations with public authorities
e Product image
f Corporate image
g Turnover
h Volume of exports
i Long-term benefits
j Short-term benefits
k Cost position in relation to competitors
l Differentiation from competitors
m Atmospheric emissions
n Disposal
o Waste generation
p Noise
q Water consumption
r Energy consumption
s Raw material consumption

References

1. European Commission. *Special Eurobarometer 416: Attitudes of European Citizens towards the Environment*; European Commission (Directorate-General for Environment): Brussels, Belgium, 2014. Available online: http://ec.europa.eu/public_opinion/index_en.htm (accessed on 16 May 2016).
2. Atienza-Sahuquillo, C.; Barba-Sánchez, V. Design of a measurement model for environmental performance: Application to the food sector. *Environ. Eng. Manag. J.* **2014**, *13*, 1463–1472.
3. Garcéz-Ayerbe, C.; Rivera-Torres, P.; Murillo-Luna, J.L. Stakeholder pressure and environmental proactivity: Moderating effect of competitive advantage expectations. *Manag. Decis.* **2012**, *5*, 189–206. [CrossRef]

4. Molina-Azorín, J.F.; Tarí, J.J.; Pereira-Moliner, J.; López-Gamero, M.D.; Pertusa-Ortega, E.M. The effects of quality and environmental management on competitive advantage: A mixed methods study in the hotel industry. *Tour. Manag.* **2015**, *50*, 41–54. [CrossRef]
5. Rennings, K. Redefining innovation-eco-innovation research and the contribution from ecological economics. *Ecol. Econ.* **2000**, *32*, 319–332. [CrossRef]
6. Zagonari, F. Four sustainability paradigms for environmental management: A methodological analysis and an empirical study based on 30 Italian industries. *Sustainability* **2016**, *8*, 504. [CrossRef]
7. Elkington, J. Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environ. Qual. Manag.* **1998**, *8*, 37–51. [CrossRef]
8. Goodland, R. The concept of environmental sustainability. *Annu. Rev. Ecol. Syst.* **1995**, *26*, 1–24. [CrossRef]
9. Pujari, D. Eco-innovation and new product development: Understanding the influences on market performance. *Technovation* **2006**, *26*, 76–85. [CrossRef]
10. European Parliament. Decision 1639/2006/EC of the European Parliament and of the Council of 24 October 2006 Establishing a Competitiveness and Innovation Framework Programme (2007–2013). Available online: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3An26104 (accessed on 12 May 2016).
11. Triguero, A.; Moreno-Mondéjar, L.; Davia, M.A. Drivers of different types of eco-innovation in European SMEs. *Ecol. Econ.* **2013**, *92*, 25–33. [CrossRef]
12. North, K. *Environment Business Management: An Introduction*, 2nd revised ed.; International Labour Organization: Geneva, Switzerland, 1992.
13. González-Benito, J.; González-Benito, O. Environmental proactivity and business performance: An empirical analysis. *Omega* **2005**, *33*, 1–15. [CrossRef]
14. Aragón-Correa, J.A.; Sharma, S. A Contingent resource-based view of proactive corporate environmental strategy. *Acad. Manag. Rev.* **2003**, *28*, 71–88.
15. Albertini, E. Does environmental management improve financial performance? A meta-analytical review. *Organ. Environ.* **2013**, *26*, 431–457. [CrossRef]
16. Aragón-Correa, J.A.; Hurtado-Torresa, N.; Sharma, S.; García-Morales, V.J. Environmental strategy and performance in small firms: A resource-based perspective. *J. Environ. Manag.* **2008**, *86*, 88–103. [CrossRef] [PubMed]
17. Melnyk, S.A.; Sroufe, R.P.; Calantone, R. Assessing the impact of environmental management system on corporate and environmental performance. *J. Oper. Manag.* **2003**, *21*, 329–351. [CrossRef]
18. Naveh, E.; Link, S. Standardization and Discretion: Does the Environmental Standard ISO 14001 Lead to Performance Benefits? *IEEE Trans. Eng. Manag.* **2006**, *53*, 508–519.
19. Walley, N.; Whitehead, B. It's not easy being green. *Harv. Bus. Rev.* **1994**, *72*, 46–52.
20. Sen, P.; Roy, M.; Pal, P. Exploring role of environmental proactivity in financial performance of manufacturing enterprises: A structural modelling approach. *J. Clean. Prod.* **2015**, *108*, 583–594. [CrossRef]
21. Sharma, S.; Vredenburg, H. Proactive Corporate Environmental Strategy and the Development of Competitively Valuable Organizational Capabilities. *Strateg. Manag. J.* **1998**, *19*, 729–753. [CrossRef]
22. Bragd, A.; Bridge, G.; Den Fond, F.; Jose, P.D. Beyond greening: New dialogue and new approaches for developing sustainability. *Bus. Strat. Environ.* **1998**, *7*, 179–192. [CrossRef]
23. Atkin, T.; Gilinsky, A.J.; New, S.K. Environmental strategy: Does it lead to competitive advantage in the US wine industry? *Int. J. Wine Bus. Res.* **2012**, *24*, 115–133. [CrossRef]
24. Zucca, G.; Smith, D.E.; Mitry, D.J. Sustainable viticulture and winery practices in California: What is it, and do customers care? *Int. J. Wine Res.* **2009**, *2*, 189–194.
25. Viassone, M.; Vrontis, D.; Papasolomou, I. The relationship between wine sector and regional competitiveness. *Glob. Bus. Econ. Rev.* **2016**, *18*, 259–276. [CrossRef]
26. Barba-Sánchez, V.; Martínez-Ruiz, M.P.; Jiménez-Zarco, A.I.; Megicks, P. Good environmental practices in a traditional wine producer: An opportunity for global competition. *Int. J. Bus. Glob.* **2012**, *8*, 131–152. [CrossRef]
27. Bresciani, S.; Ferraris, A.; Sant, G. Wine sector: Companies' performance and green economy as a means of societal marketing. *J. Promot. Manag.* **2016**, *22*, 251–267. [CrossRef]
28. Aragón-Correa, J.A. Strategic Proactivity and Firm Approach to the Natural Environment. *Acad. Manag. J.* **1998**, *41*, 556–567. [CrossRef]

29. Buysse, K.; Verbeke, A. Proactive environmental strategies: A stakeholder management perspective. *Strateg. Manag. J.* **2003**, *24*, 453–470. [CrossRef]
30. Lumpkin, G.T.; Dess, G.G. Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environmental and industry life cycle. *J. Bus. Ventur.* **2001**, *16*, 429–451. [CrossRef]
31. Sharma, S. Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Acad. Manag. J.* **2000**, *43*, 681–697. [CrossRef]
32. González-Benito, J.; González-Benito, O. A review of determinant factors of environmental proactivity. *Bus. Strat. Environ.* **2006**, *15*, 87–102. [CrossRef]
33. Hart, S.L. A natural resource based view of the firm. *Acad. Manag. Rev.* **1995**, *20*, 986–1014.
34. Junquera, B.; Del Brío, J.A. Preventive command and control regulation: A case analysis. *Sustainability* **2016**, *8*, 99. [CrossRef]
35. Russo, M.V. Explaining the impact of ISO 14001 on emission performance: A Dynamic Capabilities Perspective. *Process Learn. Bus. Strat. Environ.* **2009**, *18*, 307–319. [CrossRef]
36. Banerjee, S.B.; Iyer, E.S.; Kashyap, R.K. Corporate environmentalism: Antecedents and influence of industry type. *J. Market.* **2003**, *67*, 106–122. [CrossRef]
37. Walls, J.L.; Phan, P.H.; Berrone, P. Measuring environmental strategy: Construct development, reliability, and validity. *Bus. Soc.* **2011**, *50*, 71–115. [CrossRef]
38. Chin, W.W. The partial least squares approach to structural equation modeling. In *Modern Methods for Business Research*; Marcoulides, G.A., Ed.; Lawrence Erlbaum Associates: Mahwah, NJ, USA, 1998; pp. 295–336.
39. Sarkis, J. Manufacturing strategy and environmental consciousness. *Technovation* **1995**, *15*, 79–97. [CrossRef]
40. Rueda, A.; Aragón-Correa, J.A.; Sharma, S. The influence of stakeholders on the environmental strategy of service firms: The moderating effects of complexity, uncertainty and munificence. *Br. J. Manag.* **2008**, *19*, 185–203. [CrossRef]
41. Wright, R.T.; Campbell, D.E.; Thatcher, J.B.; Roberts, N. Operationalizing multidimensional constructs in structural equation modeling: Recommendations for IS research. *Commun. Assoc. Inf. Syst.* **2012**, *30*, 367–412.
42. Chan, W.W. Partial analysis of the environmental costs generated by hotels in Hong Kong. *Tour. Manag.* **2005**, *24*, 517–531. [CrossRef]
43. Porter, M.; Van der Linde, C. Green and competitive: Ending the stalemate. *Harv. Bus. Rev.* **1995**, *73*, 120–134.
44. Nakamura, E. Does environmental investment really contribute to firm performance? An empirical analysis using Japanese firms. *Eurasian Bus. Rev.* **2011**, *1*, 91–111.
45. López-Gamero, M.D.; Molina-Azorín, J.F.; Clave-Cortés, E. The whole relationship between environmental variables and firm performance: Competitive advantage and firm resources as mediator variables. *J. Environ. Manag.* **2009**, *90*, 3110–3121. [CrossRef] [PubMed]
46. Christmann, P. Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Acad. Manag. J.* **2000**, *45*, 663–680. [CrossRef]
47. Tomomi, T. Environmental management strategy for small and medium-sized enterprises: Why do SMBs practice environmental management? *Asian Bus. Manag.* **2010**, *9*, 265–280. [CrossRef]
48. Liu, Y.; Guo, J.; Chi, N. The antecedents and performance consequences of proactive environmental strategy: A meta-analytic review of national contingency. *Manag. Organ. Rev.* **2015**, *11*, 521–557. [CrossRef]
49. Judge, W.Q.; Douglas, T.J. Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *J. Manag. Stud.* **1998**, *35*, 241–262. [CrossRef]
50. Lanoie, P.; Laurent-Lucchetti, J.; Johnstone, N.; Ambec, S. Environmental policy, innovation and performance: New insights on the Porter hypothesis. *J. Econ. Manag. Strat.* **2011**, *20*, 803–842. [CrossRef]
51. Henriques, I.; Sadorsky, P. The Relationship between Environmental Commitment and Managerial Perceptions of Stakeholder Importance. *Acad. Manag. J.* **1999**, *42*, 87–99. [CrossRef]
52. Taplin, I. Competitive pressures and strategic repositioning in the Napa wine industry. *Int. J. Wine Mark.* **2006**, *18*, 61–71. [CrossRef]
53. Dodds, R.; Graci, S.; Ko, S.; Walker, L. What drives environmental sustainability in the New Zealand wine industry? An examination of driving factors and practices. *Int. J. Wine Bus. Res.* **2013**, *25*, 164–184. [CrossRef]
54. Marshall, R.S.; Akoorie, M.E.; Hamann, R.; Sinha, P. Environmental practices in the wine industry: An empirical application of the theory of reasoned action and stakeholder theory in the United States and New Zealand. *J. World Bus.* **2010**, *45*, 405–414. [CrossRef]

55. Forbes, S.L.; Cohen, D.A.; Cullen, R.; Wratten, S.D.; Fountain, J. Consumer attitudes regarding environmentally sustainable wine: An exploratory study of the New Zealand marketplace. *J. Clean. Prod.* **2009**, *17*, 1195–1199. [CrossRef]
56. Brugarolas, M.; Martínez-Carrasco, L.; Martínez-Poveda, A.; Rico, M. Determination of the surplus that consumers are willing to pay for an organic wine. *Span. J. Agric. Res.* **2005**, *3*, 43–51. [CrossRef]
57. De Burgos, J.; Céspedes, J.J. Environmental performance as an operations objective. *Int. J. Oper. Prod. Manag.* **2001**, *21*, 1553–1572. [CrossRef]
58. Muhammad, N.; Scrimgeour, F.; Reddy, K.; Abidin, S. The relationship between environmental performance and financial performance in periods of growth and contraction: Evidence from Australian publicly listed companies. *J. Clean. Prod.* **2015**, *102*, 324–332. [CrossRef]
59. Fernández-Viñéa, M.B.; Gómez-Navarro, T.; Capuz-Rizo, S.F. Eco-efficiency in the SMEs of Venezuela. Current status and future perspectives. *J. Clean. Prod.* **2010**, *18*, 736–746. [CrossRef]
60. Aragón-Correa, J.A.; Martín-Tapia, I.; Hurtado-Torres, N.E. Proactive environmental strategies and employee inclusion: The positive effects of information sharing and promoting collaboration and the influence of uncertainty. *Organ. Environ.* **2013**, *26*, 139–161. [CrossRef]
61. Ringle, C.M.; Wende, S.; Becker, J.M. SmartPLS 3. 2015. Available online: http://www.smartpls.com (accessed on 10 May 2016).
62. Pondevillea, S.; Swaen, V.; De Ro, Y. Environmental management control systems: The role of contextual and strategic factors. *Manag. Account. Res.* **2013**, *24*, 317–332. [CrossRef]
63. Sellers-Rubio, R. Evaluating the economic performance of Spanish wineries. *Int. J. Wine Bus. Res.* **2010**, *22*, 73–84. [CrossRef]
64. Roldán, J.L.; Sánchez-Franco, M.J. Variance-based structural equation modeling: Guidelines for using partial least squares in information systems research. In *Research Methodologies, Innovations and Philosophies in Software Systems Engineering and Information Systems*; Mora, M., Gelman, O., Steenkamp, A.L., Raisinghani, M., Eds.; Information Science Reference: Hershey, PA, USA, 2012; pp. 193–221.
65. Hair, J.F.; Hult, T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage: Thousand Oaks, CA, USA, 2014.
66. Nunnally, J.C. *Psychometric Theory*; McGraw-Hill: New York, NY, USA, 1978.
67. Fornell, C.; Larcker, D. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]
68. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94. [CrossRef]
69. Polites, G.L.; Robert, N.; Thatcher, J. Conceptualizing models using multidimensional constructs: A review and guidelines for their use. *Eur. J. Inf. Syst.* **2012**, *21*, 22–48. [CrossRef]
70. Falk, R.F.; Miller, N.B. *A Primer for Soft Modelling*; The University of Akron Press: Akron, OH, USA, 1992.
71. Henseler, J.; Dijkstra, T.K.; Sarstedt, M.; Ringle, C.M.; Diamantopoulos, A.; Straub, D.W.; Ketche, D.J.; Hair, J.F.; Hult, G.T.; Calantone, R.J. Common beliefs and reality about partial least squares: Comments on Rönkkö & Evermann (2013). *Organ. Res. Methods* **2014**, *17*, 182–209.
72. Lazaro, J.C.; Sá de Abreu, M.C.; de Assis Soares, F. A review of environmental factors determining to proactivity: The case of the footwear industry. *Iberoam. J. Strat. Manag.* **2012**, *11*, 197–224.
73. Gilinsky, A.; Newton, S.K.; Atkin, T.; Santini, C.; Cavicchi, A.; Casas-Romero, A.; Huertas, R. Perceived efficacy of sustainability strategies in the U.S., Italian, and Spanish wine industries: A comparative study. *Int. J. Wine Bus. Res.* **2015**, *27*, 164–188. [CrossRef]
74. Pomarici, E.; Vecchio, R.; Mariani, A. Wineries' perception of sustainability costs and benefits: An exploratory study in California. *Sustainability* **2015**, *7*, 16164–16174. [CrossRef]
75. Bansal, P.; Roth, K. Why companies go green: A model of ecological responsiveness. *Acad. Manag. J.* **2000**, *43*, 717–736. [CrossRef]