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Relationship between Sustainable Disclosure and Performance—An Extension of Ullmann's Model

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Abstract: Due to the lack of consensus on the Sustainable Disclosure (SD)–Sustainable Performance (SP) relationship and the absence of a robust theoretical framework base, this research tests this relationship. Based on Ullmann's argument that the execution of corporate responsibility regarding SD, SP and EP (economic performance) is determined by the management's (unobservable) overall strategy, we apply Partial Least Squares, introducing EP, size and membership in sensitive sectors and subjecting them to a multiplicity of external pressures (social, environmental and legislative) as determinants of the SD–SP link. There is a moderate SD–SP relationship, with a significant effect due to EP and conditioned by size. Specifically, (1) the companies that are concerned and which act sustainably have a higher SD, (2) the greater the EP, the greater its effect on this SD, but (3) when the sample is segmented by size, the moderating effect is only positive and significant for large companies. An awareness of the added value of the sustainable business model exists, more than simply reporting (actions beyond words), but the value that its profitability yields will not be determinant for SP, though it will affect SD, despite there being no direct relationship between performance and SD.

Keywords: stakeholders; sustainability performance; sustainability disclosure; PLS

1. Introduction

The explosion of the sustainability concept [1], and its reporting [2], has been developed mainly as a result of both the proliferation of the Sustainable Development concept emerging from the Brundtland Report (1987) (http://www.un-documents.net/wced-ocf.htm) and as a response to stakeholder demands [3].

Our interest in this research lies in examining how corporations behave with respect to sustainability in terms of strategy, performance and communication. In particular, in this paper we analyze two topics which are widely discussed in the literature: Sustainability Disclosure (SD) and Sustainability Performance (SP). Many authors have tried to measure them quantitatively, using different tools to do so for both SD [4] and SP [5–9], and classifying companies according to their sustainability [10]. More specifically, we will consider how to quantitatively measure both topics, which we will argue when developing both the theoretical constructs and the hypotheses.

Nevertheless, in the face of the consistency of the need to seek corporate social responsibility (CSR) beyond maximizing the shareholders' profit [11], the focus has been on the analysis of how SP impacts business competitiveness and how environmental and social management can be integrated better with economic business goals [12] and, therefore, the analysis of the integration of sustainability in business strategy [12,13].

In this literature, social and environmental disclosure is proposed as a dialog between firms and their stakeholders. The latter are interested in corporate social and environmental activities [14]. In this

line of argument, the main goal of this work is examining the SD in a developed country, i.e., Spain, through the stakeholders' theoretical lens and by quantitatively analyzing the link between SD and SP.

The motivations for conducting this study are manifold. Firstly, perhaps the main motivation is to contribute knowledge to reduce the disparity (and contradictions) of results found in the literature regarding the SD–SP relationship, due mainly to a consequence of the multidimensional nature of both concepts. Although it has been argued that the better performing companies are more concerned about CSR disclosure [15,16], the sustainability discourse is becoming ubiquitous, as even nowadays a significant gap persists between corporate sustainability talk and practice [17]. As a result of the discursive analysis of this Sustainability Disclosure (SD), it is noted that words are not always real actions [18], and that a critical analysis of the published discourse is necessary to improve this SD and lead to true change [19,20]. Therefore, the empirical research concludes that environmental disclosure is used by managers as a legitimization tool so that the worse the environmental performance, the greater the disclosure will be in order to reduce the negative image [21,22]. So, in this line of argument, after analyzing organized hypocrisy and organizations' façades in SD, Cho et al. [17] concluded that, despite this substantial body of research, the role that SD can play in any transition toward a less unsustainable society remains unclear, being closer to "weak sustainability" [23]. This is due to the negative effects of not reporting simulacra which are clearly disconnected from the impact of business activities [24], even camouflaging unsustainability [25] and using greenwashing, including propitiating the legitimizing of bad practices in global reporting initiative (GRI)-oriented sustainability reporting [26]. This is often used to manipulate the perception of the main stakeholders [27].

So, no unique relationship has prevailed in empirical studies in the link between SP, business competitiveness and economic success [12], patent in their different social, environment and global dimensions. A positive relationship between environmental disclosure and environmental performance can be found [28–31], or between SD and performance [32] or corporate social reporting [33,34], but also a negative relation can be found [25,35], or indeed that no significant relationship exists [36], except that it is moderated by three key variables: Region, type of disclosure and measures of organization size [37].

In view of this disparity of results, we contribute theoretically and empirically to the discussion, and identify which variables explain and moderate this relationship. With this in mind, the application of Stakeholder Theory is taken as a reference, staring from the seminal work of Ullmann in 1985, for the definition of the main theoretical constructs. Particularly, due to this relationship not being completely explained until now, we include new variables in the model. Hence, on the one hand, we analyze the impact of financial profitability on this relationship as a moderating variable. On the other hand, we discuss the amplifying effect that the size of the corporation has on this moderation. Concretely, we will determine if the size of the firms and belonging to sectors sensitive to external pressures (social, environmental and legal) condition or moderate these relations.

Secondly, there is a lack of consensus regarding a comprehensive theoretical framework for understanding SD. Hooghiemstra [38] argued that research on sustainability reporting is characterized by diverse and inconsistent findings due to a lack of a comprehensive theoretical reference point [39]. The variation found in SD and CSR disclosure in various empirical papers [40–42] has been extensively explained by numerous theoretical perspectives [16]. Although the majority of the literature does not refer to any theory at all [39], some of it adopts, or at least considers, a theory showing that there is indeed a preoccupation with a **political** theory perspective [43], **agency** theory [44], **institutional** theory [45–50], **legitimation** theory [27,33,50–57] and **stakeholder theory** [58–69] being the frameworks most preferred to explain sustainability and CSR disclosure. However, there is still **no CONSENSUS** and a comprehensive theoretical basis for the understanding of the disclosure of CSR information is not provided in the theory of legitimation [70,71] nor in the theory of the stakeholders [72,73].

Likewise, after a critical review of the literature of social and environmental accounting research, Spence et al. [74] extracted two main conclusions. On the one hand, researchers describe stakeholder theory as the dominant and most useful theory in explaining sustainability reporting practice.

However, on the other hand, most studies refer to stakeholders in general, without explicitly referring to stakeholder theory (or other theories). These conclusions were confirmed by Hahn and Kühnen [39] after analyzing the determinants of sustainability reporting.

Thirdly, as Ali et al. [16] pointed out, the disclosure of CSR information is a country-dependent phenomenon since different results have been found in different contexts [70,75–77] where these results could be attributed to the differences in national cultures, the regulatory environment and other institutional factors [78]. In this respect, as has been noted in the previous literature, most of the studies that analyze social and environmental disclosure drivers were conducted in developed countries, e.g., see [37,70,79], where SD is proposed as a dialog between firms and their stakeholders who are interested in corporate social and environmental activities [14]. This SD is used to manipulate the perception of the main stakeholders [27], and the following strategy of the company is to satisfy the interests of these stakeholders closer to "weak sustainability" [23].

Therefore, this research is interesting for many reasons. Firstly, we make a more rigorous and complete measurement of the key variables than in previous research. Secondly, we introduce profitability as a moderating variable but not an explanatory one because currently companies have assumed social responsibility as part of their business strategy, regardless of whether their profitability is greater or lesser. Thirdly, we segment the sample according to the size of the companies to test if the larger the company the greater the disclosure, irrespective of its profitability. And, lastly, we use an appropriated methodology (Partial Least Squares) to analyze and test the theoretical model.

In our findings, it is confirmed that there is a moderate relationship between SD and SP, with a significant effect due to EP and conditioned by size. Specifically, we find that (1) companies that are concerned and which act sustainably have a higher SD, and that (2) the greater the EP, the greater its effect on this SD, but (3) when the sample is segmented by size, the moderating effect is only positive and significant for large companies.

There are many practical and social implications in this work, mainly that an awareness of the added value of the sustainable business model is more than simply reporting (actions beyond words), but the value that its profitability yields will not be determinant for this type of SP, yet it will affect SD, although there is no direct relationship between EP and SD.

We contribute knowledge to the long-lasting debate about the ambiguous SD–SP link, both theoretically and empirically, and identify which variables explain and moderate this relationship. We highlight new questions about this link's temporal and contextual boundary conditions, and how managers' personal values and stakeholders' pressure can influence and encourage a more or less proactive or reactive sustainability strategy, performance and disclosure.

With these objectives, the structure of this work is as follows. Section 2 focuses on a review of the literature and the theoretical framework is presented in Section 3. The methodology used is discussed in Section 4. The results are presented in Section 5. There is a series of final discussions in Section 6 and the paper ends with a section of conclusions, research limitations and future research opportunities.

2. A Review of Ullmann's Model

After a critical analysis of the prior research in the area of CSR, Ullmann [80] concluded that the advancement of knowledge in this area had been slowed down due to a lack of solid theoretical models that comprehensively explained CSR activity. This inconsistency led him to develop a robust contingent framework for predicting corporate social activity based on a stakeholder theory of strategic management that was put forward by Freeman [81] and others, in which conflicting external demands on the firm may be addressed, and which allows us to explain the relationships between SP, SD and EP [82] from three dimensions: The stakeholders' power, the managers' strategic position and the firms' EP.

Since then, this model has been widely applied in the area of CSR and social accounting (see Table 1), becoming a point of reference in the study of social and environmental disclosure and accounting.

Table 1. Studies adopting Ullmann's framework.

Authors	Sample	Country	Period	Methodology	Disclosure	Hypothesis	Findings
Al-Tuwaijri et al. [28]	198 U.S. "Standard & Poor's 500" firms	US	1994	Simultaneous equations models	Environmental	H_1: ECP—Good ENVP (N) H_2: ENVD—Good ENVP (N) H_3: Good ENVP—ENVD (N)	+ + +
Brammer and Pavelin [83]	447 large UK firms in the FTSE All-Share Index (from a diverse range of industrial sectors)	UK	1998–2000	Regression Model	Environmental	H_1: Quantity (H_{1a})/Quality ENVD (H_{1B})—Visible Environmental Issues (+) H_2: Quantity (H_{2a})/Quality ENVD (H_{2B})—ENVP (+) H_3: Quantity (H_{3a})/Quality ENVD (H_{3B})—Size (+) H_4: Quantity (H_{4a})/Quality ENVD (H_{4B})—Media Exposure (+) H_5: Quantity (H_{5a})/Quality ENVD (H_{5B})—Dispersion of share ownership (+) H_6: Quantity (H_{6a})/Quality ENVD (H_{6B})—Profitability (+) H_7: Quantity (H_{7a})/Quality ENVD (H_{7B})—Leverage (+) H_8: Quantity (H_{8a}) and Quality ENVD (H_{8B})—Non-executive directors (+)	+/+ N/+ +/+ N/N −/− N/N −/− N/N
Chiu and Wang [60]	246 firms listed on the Taiwan Stock Exchange (from a diverse range of industrial sectors)	Taiwan	2010–2011	Regression Model	CSR	H_1: Quality CSRD—RP supply chain (+) H_2: Quality CSRD—RP International Capital Market (+) H_3: Quality CSRD—Dispersal of share ownership (+) H_4: Quality CSRD—Positive Strategic posture towards CSRD (+) H_5: Quality CSRD—Profitability (+) H_6: Quality CSRD—Leverage (−) H_7: Quality CSRD—Size (+) H_8: Quality CSRD—Media Exposure (+)	+ + N + N N + +
Elijido-Ten [84]	Stock Exchange and Australia's top 100 companies ranking in Australian Conservation Foundation's (2002) (ACF's)	Australia	2002	Regression Model	Environmental	H_{1a}: Shareholder concentration—ENVP (−) H_{1b}: Financial leverage (debt/equity ratio)—ENVP (+) H_{1c}: Environment sensitive industries—ENVP (−) H_2: ENVD and Commitment and/or environmental concern—ENVP (+) H_3: EP (ROA)—ENVP (+)	− N − + N
Herbohn et al. [85]	339 mining and energy firms listed on the Australian Securities Exchange	Australia	2006	Regression Model	Sustainability	H_1: SD—SP (+)	+
Herremans et al. [3]	11 oil and gas companies	Canada	–	Qualitative Methods. Multiple-case	Sustainability	–	–
Husillos and Álvarez-Gil [72]	135 SMEs (auxiliary automobile industry)	Spain		Structural Equation Modeling	Environmental	H_1: Non-organizational Stakeholders—ENVP (+) H_2: Organizational Stakeholders—ENVP (+) H_3: Pro-active posture manager—ENVP (+) H_4: Organizational lack—ENVP (+) H_4: ENVP—ENVD (+)	+ + + + +
Kent and Chan [86]	102 of the largest companies listed on the Australian Stock Exchange	Australia	1995	Regression Model	Environmental	H_1: Quantity and Quality ENVD—Stakeholders' Power (+) H_2: Quantity and Quality ENVD—Active posture toward environmental issues (+) H_3: Quantity and Quality ENVD—ECP (+)	+ + N

Table 1. *Cont.*

Authors	Sample	Country	Period	Methodology	Disclosure	Hypothesis	Findings
Kent and Zunker [87]	970 listed companies on the Australian Securities Exchange Limited	Australia	2004	Regression Model	Social (employee)	H_1: Voluntary Employee Disclosure—Employee Power (+) H_2: Voluntary Employee Disclosure—Strategic posture of employees (+) H_3: Voluntary Employee Disclosure—ECP (+)	+ + +
Magness [88]	41 gold mining companies	Canada	1995	Regression Model	Environmental	H_1: ENVD—Number of press releases (prior year) (+) H_2: ENVD—Size (+) H_3: ENVD—Debt or equity (+) H_4: ENVD—Profitability (ROA) (+)	+ + + +/−
Michelon [89]	57 DJSI companies and 57 DJGI companies	EU, UK and USA	2003	Regression model	Sustainability	H_1: SD—Commitment with stakeholders (+) H_2: SD—ECP (+) H_3: SD—Media Exposure (+)	+ N +
Prado-Lorenzo et al. [90]	99 nonfinancial firms quoted on the Spanish continuous . . . market	Spain	–	Regression model	CSR	H_1: CSRD—Financial Institutions in ownership (+) H_2: CSRD—Person in ownership who exercises control over firm (−/+) H_3: CSRD—Independent directors in ownership (+)	N + N
Roberts [82]	130 major corporations (CEP) (Fortune 500) (from a diverse range of industrial sectors)	US	1984–1986	Regression Model	CSR	H_1: CSRD—Dispersal of share ownership (−) H_2: CSRD—Corporate political action (+) H_3: CSRD—Debt to equity (+) H_4: CSRD—Corporate public affairs staff members employed (+) H_5: CSRD—Sponsorship of philanthropy (+) H_6: CSRD—Profitability (+) H_7: CSRD—Market (−) H_8: CSRD—Age (+) H_9: CSRD—Industry sensitive (+) H_{10}: CSRD—Size (+/−)	− + + + + + − + + −
Sun et al. [91]	245 non-financial companies	UK	2006–2007	Regression Model (OLS)	CSR	H_1: EM—CSR/CSRD (+) H_2: Board size—CSR/CSRD (+) H_3: Greater board size—Lesser CSR/CSRD (−) H_4: Num. audit committee meetings—CSR/CSRD (+) H_5: Greater Num. audit committee meetings—Lesser CSR/CSRD (−)	N N N + +

PERFORMANCE: Economic Performance: ECP; Environmental Performance: ENVP; Social Performance: SOCP; Corporate Social Responsibility Performance: CSRP; Sustainable Performance: SP. DISCLOSURE: Financial/Economic Disclosure: ECD; Environmental Disclosure: ENVD; Social Disclosure: SOCD; Corporate Social Responsibility Disclosure: CSRD; Sustainable Disclosure: SD; Reporting pressure: RP. (+) Positive and significant relation; (−) Negative and significant relation; (N) Relation not supported. Meaning to contribute knowledge to cover this research gap, we will focus on the path begun by Ullmann [80], introducing the improvements proposed by Ullmann and based on the results obtained from more than 30 years of the extant literature in the field of social and environmental accounting and disclosure (see Table 2).

Table 2. Improvements introduced in Ullmann's model.

	Lack and Problem	How We Mean to Improve It
Theoretical Model	Lack of theory: How SD is used to engage stakeholders is understudied, there does not exist a robust theoretical model which explains the motivation for SD	Specifying the theoretical model more completely, elaborating a holistic model which jointly relates SD, SP and Stakeholders' power, introducing firm size and the type of activity carried out as moderators of EP
	There are few works which relate SD and SP, as they are centered mainly on the EP and especially on the ENVD	Focus on SD–SP link
	No introduction of innovative ideas	Introducing new ideas and approaches, such as legal and moral responsibility
	Inappropriate definition of key terms that are vaguely delimited	Providing an appropriate definition of all theoretical terms which make up the model for it to be replicated
	Homogeneity of strategic postures in the samples	Analyzing the role of the firm's strategic posture in general (setting out from different corporate postures) and of the managers in particular (with surveys to determine their positions)
	New ideas and approaches among social performance measures	Introducing different accounting and management tools and measures to evaluate and assess the performance, such as Full Cost Accounting, Life Cycle Analysis, Balanced Scorecard, among others
	Lack of focus of theorization of different relationships: No consideration of the interactive impact of profit and the strategic posture	Moderation imposed by the characteristics of firms, such as size, sector and profitability (variables moderating and not explanatory as in previous models)
	Lack of methodology. There does not exist a robust methodology which completely explains SD	PLS, introducing variables which moderate the relation: size, sector, profitability (because companies currently have assumed social, environmental and ethical responsibility, as part of their business strategy, regardless of whether their size or profitability is greater or lesser, and irrespective of the sector of activity to which they belong)
Empirical Data	Samples with similar strategic postures	Including samples with different strategic postures
	Similar samples	Segmenting the sample according to the size of the companies to test if the greater the company the greater the disclosure regardless of its profitability
	No examination of the nature of disclosure: Voluntary versus mandatory	Separation between mandated and voluntary disclosure

3. Theoretical Framework

3.1. Theoretical Model

Table 3 and Figure 1 graphically show the structural equation model developed for this work. This theoretical model is based on the assumption that different proxies of sustainability performance, such as the stakeholders' power and the strategic managers' posture may have different effects on SD, with the moderation of the size of the company and belonging to sensitive sectors of activity. The concepts and the hypotheses mentioned in the model are described below.

3.1.1. Sustainability Disclosure

The literature on sustainability reporting mirrors this terminological inconsistency and ambiguity [39]. Aras and Crowther [92] pointed out that CSR is a concern for all aspects of sustainability, crucial for long-term success and even survival. Indeed, many corporate reports which used to be designated as environmental reports and subsequently as CSR reports, have now been repackaged as sustainability reports [93].

Current sustainability-related reporting practice is primarily of a voluntary nature, so companies are flexible in experimenting with disclosing information [47]. Sustainability reporting is being increasingly recognized as an important factor contributing to corporate sustainability [39,94]. Schaltegger et al. [95] pointed out that, on the one hand, sustainability reporting which serves for the collection, analysis and communication of corporate sustainability information becomes a crucial trigger for management toward corporate sustainability [95]. On the other hand, from a pragmatic point of view, corporate sustainability can be viewed as the result of management's attempts to tackle challenges posed by the need for corporations to move toward the goal of sustainability [96,97].

Table 3. Variables of theoretical model.

Constructs				Definition	Relation	Hypothesis	Expected Sign
Sustainability Disclosure (SD)				Economic, social, ethics and environmental information	SD—SP	H1	+
Sustainability Performance (SP)	*Overall*			SP is a composite of stakeholders' power and strategic posture	SP—SD		
	Stakeholders' Power	Organizational Stakeholders		Prioritization that managers grant to the interests of some stakeholders over those of others	Stakeholders' Power—SP	H2	+
		Non-organizational Stakeholders					
	Strategic Posture	Personal characteristics of the decision makers	Managers' Perception	Managers' opinions on CSR, sustainability, ethics and pro-environment are the most important internal drivers toward sustainability from a holistic perspective	Managers' Perception—SP	H3	+
			Managers' Commitment	Personal characteristics of the decision makers to pursue sustainability and satisfy the needs of the different stakeholder	Managers' Commitment—SP		
		Integration sustainability	Company's responsibility regarding sustainability	Legal and moral corporate responsibility about economic, ethical, social and environmental development	Corporate Sustainability Responsibility—SP		
			General strategy of the firm	Strategic proactivity vs. Strategic passivity	General Strategy—SP		
			Hierarchical position of the sustainability manager	Existence and hierarchical position responsible for sustainability	Position Sustainability Manager—SP		
			Actions to achieve the SP and SD of a firm's activities and satisfy stakeholders' needs	Sustainability strategy is reflected in the different actions carried out for the integration of sustainability in the core business, strategy, performance and purpose of the company (Internal (administrative, management and evaluation) and external (diagnosis, evaluation and certification) actions)	Sustainability Actions—SP		
Economic Performance				ROA	Moderating effects on SD–SP link	H4	+
Size				Large companies		H4a	+
				Small companies		H4b	+

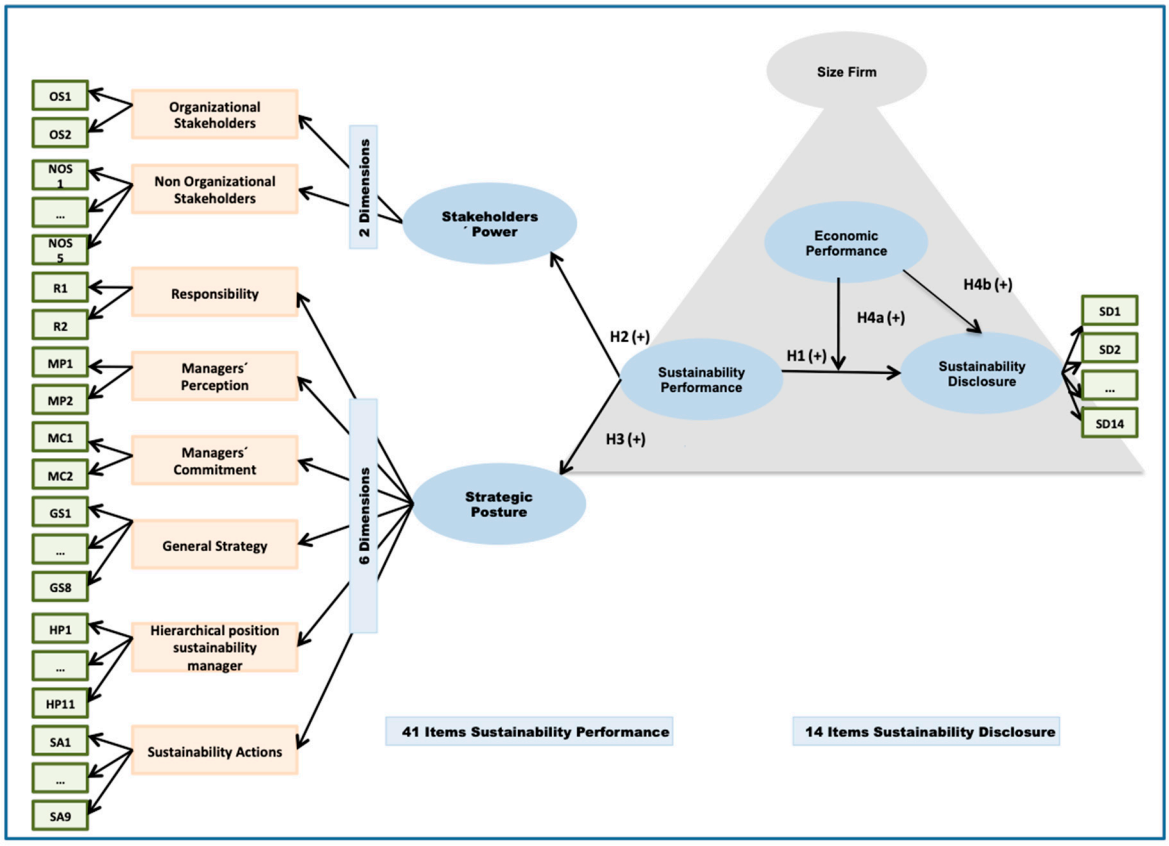

Figure 1. Theoretical model for the sustainable disclosure–sustainable performance linkage. Stakeholders' Power: Source: Own elaboration.

3.1.2. Sustainability Performance

In the absence of an agreed upon definition of exactly what CSR [98] and sustainability [96,99] are, there is no agreed-upon basis for measuring that activity and relating it to the various dimensions of corporate performance [93]. Sustainability performance management is a newly emerging term which addresses the social, environmental and economic (performance) aspects of corporate management in general and of corporate sustainability management in particular [100].

3.2. Hypothesis

3.2.1. Sustainability Disclosure–Sustainability Performance Relationship (H1)

The Performance (economic, social, CSR and sustainable)–Disclosure relationship (overall, good, bad and higher impact) has been widely analyzed in the literature (Table 4), as well as the drivers and determinants of this relationship. Further, as we have indicated, these analyses have had diverse results (Table 5).

However, previous research has focused on the analysis of the Disclosure–Financial/Economic Performance relationship. For example, Herbohn et al. [85] analyzed the SD–SP link following Ullmann's model, finding a positive relationship between both. On the contrary, as was pointed out by Cho et al. [17], the role that SD can play in any transition toward a less unsustainable society remains unclear. They called it "organized hypocrisy" and "organizations' façades" in SD, being used as a legitimizing of bad practices, without providing a complete and balanced picture of corporate SP, and even greenwashing [26]. To reduce the negative image [21,22], the negative effects are not reported but clearly disconnected from the real impact of business activities [24]. So, if the disclosing of information is really analyzed discursively, perhaps words are not always real actions [101].

Table 4. Performance–Disclosure relationship.

Performance		Disclosure			
		Environmental	**Social**	**CSR**	**Sustainable**
Economic		(+) Al-Tuwaijri et al. [28] (+) Husillos and Álvarez-Gil [72] (+) Cormier and Magnan [102] (N) Freedman and Jaggi [103] (N) Brammer and Pavelin [83] (N) Magness [88] (N) Elijido-Ten [84] (N) Sun et al. [91]	(+) Kent and Zunker [87] (+) Chiu and Wang [60] (−) Cho et al. [35]	(+) Roberts [82] (+) Haniffa and Cooke [33] (+) Orlitzky et al. [34] (+) Lu and Abeysekera [14] (N) Brine et al. [36] (N) Chiu and Wang [60]	(+) Buhr [32] (+) Weber [104] (+) Artiach et al. [105] (−) Moneva et al. [25]
Environmental	Good	(+) Al-Tuwaijri et al. [28] (+) Li et al. [106]			
	Bad	(+) Li et al. [106] (+) Cho et al. [35] (+) Patten [107]			
	Higher Impact	(+) Brammer and Pavelin [83]			
	Overall	(+) Clarkson et al. [29,30] (+) Clarkson et al. [31] (–) Cho and Patten [22] (–) De Villiers and van Staden [53] (N) Husillos and Álvarez-Gil [72] (N) Elijido-Ten [84] (N) Sun et al. [91] (N) Freedman and Wasley [108]		(N) Ingram and Frazier [109]	(+) Weber [104]
Sustainability				(N) Gallardo-Vázquez et al. [37]	(+) Herbohn et al. [85]

(+) Positive and significant relation; (−) Negative and significant Relation; (N) No significant relation.

Table 5. Disclosure and different variables.

	Type of Disclosure						
	Social		Environmental			CSR	Sustainability
	+	N	+	−	N	+	+
Stakeholder Power	Chiu and Wang [60] [1] Kent and Zunker [87]	Brammer and Pavelin [83]	Husillos and Álvarez-Gil [72] Kent and Chan [86] [1]			Prado-Lorenzo et al. [90] Roberts [82] Lu and Abeysekera [14] Chiu and Wang [60] Purushothaman et al. [110] Branco and Rodrigues [40] Reverte [42]	Michelon [89]
Strategic Posture/Managers' Concern and Commitment	Chiu and Wang [60] [1]		Elijido-Ten [84] Kent and Chan [86] [1] Sun et al. [91] Luque-Vílchez et al. [111]			Roberts [82] Chapple and Moon [112]	Herbohn et al. [85]
Size	Chiu and Wang [60] [1]		Brammer and Pavelin [83,113] [1,2,3]		Elijido-Ten [84]	Lu and Abeysekera [14] Chiu and Wang [60] Purushothaman et al. [110] Branco and Rodrigues [40] Reverte [42] Artiach et al. [105]	Herbohn et al. [85]
Media Visibility/Press	Chiu and Wang [60] [1]		Magness [88]		Brammer and Pavelin [83,113] [1,2,3]		Herbohn et al. [85] Michelon [89]
Leverage				Brammer and Pavelin [83,113] [1,2,3]			Artiach et al. [105]
Dispersed Ownership			Brammer and Pavelin [83,113] [1,2,3] Elijido-Ten [84]			Prado-Lorenzo et al. [90]	
Business activity			Brammer and Pavelin [83,113] [1,2,3] Elijido-Ten [84]			Lu and Abeysekera [14]	
Assets age					Elijido-Ten [84]		Herbohn et al. [85]
Environmental Performance			Brammer and Pavelin [83,113] [1,2,3] Al-Tuwaiji et al. [14] [1]				Weber [104]
Sustainable Performance							Herbohn et al. [85]

(+) Positive and significant relation; (−) Negative and significant relation; (N) Non-significant relation and not supported in the results; [1] Relation supported both in the quantity and in the quality of the informed disclosed; [2] Sectors most closely related to environmental concerns (industry sensitivity); [3] Larger firms.

Given this disparity in empirical findings, and given this research gap in the analysis of this relationship, our research objective raises the following general hypothesis:

Hypothesis 1 (H1). *The sustainability performance is a composite of the stakeholders' power and the strategic posture that directly and positively affects their sustainability disclosure.*

SP depends on different attributes that, taken together, determine the value of this output. That is why this variable is defined in this work as a multidimensional latent variable whose indicators are themselves latent variables or sub-constructs [114]. Specifically, we consider SP as a composite of the stakeholders' power and the strategic posture. So, subsequently, we will explain the role of each of the variables that constitute SP in this study; that is, the stakeholders' power and the strategic posture.

3.2.2. Stakeholders' Power (H2)

Following Ullmann's [80] contingent model through the variable "stakeholder power", we will bring together the different behaviors of the firms in terms of SP and SD, depending on the prioritization that managers grant to the interests of some stakeholders over those of others (p. 552). If this power is low, their demands tend to be ignored by the focal organization.

As Freeman [115] advanced, this integration can occur in two opposite directions: True moral commitment or hiding a pragmatic and utilitarian management to obtain stakeholders' approval. This constitutes an instrument of manipulation. Only the firms' organizations that are committed to the stakeholders on the basis of mutual trust and cooperation will build legitimacy and a reputation that will give them a competitive advantage [115] (p. 46). In this line of argument, only the firms which really integrate and consider their stakeholders to be important will advance toward proactive strategies of environmental protection [116] and of sustainability [10].

A greater exposure to pressure from different stakeholders (internal and external), will lead to corporate governance acting in a more sustainable responsible manner [46,117], and consequently a disclosure of social and environmental actions [16].

SD is being increasingly recognized as an important factor contributing to leading to a more sustainable way of doing business, benefiting both corporations and their stakeholders [2,94,118,119]. This rendering of accounts serves as a vehicle between the company's social activity and SP and its main stakeholders' perception (Lu and Abeysekera [14] and Hasseldine et al. [120] in large companies, and Husillos and Álvarez-Gil [72] and Perrini et al. [121] in SMEs). The empirical literature highlights the power of stakeholders in social [60,87], environmental [72,86], CSR [90] and sustainability [89] disclosure (see Table 5).

The above contribution allows us to observe a significant and direct relationship between stakeholders' power and SP, and hence SD. Consequently, it is suggested that stakeholders' power is an important component of SP, not in isolation but rather in combination with other additional variables described and explained in the following paragraphs. This question justifies the first hypothesis:

Hypothesis 2 (H2). *Sustainability Performance is a reflection of Stakeholders' Power.*

3.2.3. Strategic Posture (H3)

As the "strategic posture" dimension, Ullmann [80] described the mode of response of an organization's key decision makers toward social demands (p. 552). However, Ullmann did not thoroughly elaborate this point, and it is necessary to turn to other research works where it is analyzed in more detail.

Sustainability must be an integral component of corporate strategy and sustainability strategies should be supported with a mission, culture and people, as appropriate [122]. In this way, to refer to the strategic position of firms regarding sustainability, we will have to take into account

different dimensions following the previous literature to propose a framework to position sustainable entrepreneurship toward meeting stakeholders' and sustainable goals [123,124].

Specifically, in this work, strategic posture is a composite of 1) the personal characteristics of the decision makers for the responsibility to pursue sustainability and satisfy the needs of the different stakeholders (as a reflection of managers' perception and managers' commitment), and 2) the integration of sustainability in the core business, strategy, performance and purpose (as a consideration of the company's responsibility regarding sustainability, corporate strategy, the sustainability manager's hierarchical position and different actions to achieve SP and SD and satisfy stakeholders' needs).

(1). Personal characteristics of the decision makers.

(a) Managers' perception

Many managers remain unconvinced that pursuing initiatives to address the demands and expectations of society contributes to making businesses more profitable. This is basically because these initiatives have been developed in isolation from the business activity and have not yet been directly linked to business strategy [125] and business purpose. All the same, empirical evidence has been found that the opinion on CSR and ethics [126], pro-environmental managers' personal values [111], leadership in sustainability [127,128] and the perception that managers have of the relevance of these aspects [72,129,130] are the most important internal drivers toward sustainability from a holistic perspective. In this way, they will be considered discriminating elements in the degree of integration of these responsibilities within the philosophy of business [129,131] integrating them at different strategic levels [132] and reporting [133,134].

(b) Managers' commitment

Ullmann determines that the personal characteristics of the decision makers in the firms to pursue sustainable competitive advantages through the active management of their relationship with the different stakeholders is a function of the greater or lesser proactivity of these managers [72,131], being key in the implementation of social and environmental programs, as has been empirically verified [111,135,136]. So, managers must integrate sustainability into all strategic and operational decisions, and leadership must be committed to sustainability and build additional organizational capacity [122]. Empirically it is demonstrated that a higher commitment is related to the management's own attitudes and perceptions influencing the social and ecological responsibility of firms [82,135]. That is due to this factor being considered a discriminating element in the degree of integration of these responsibilities within the philosophy of business [129,131] and reporting [133,137].

(2). Sustainability integration.

(a) Company's responsibility

Following Likierman and Creasey [138], we distinguish between legal and moral corporate responsibility. Legislative pressure can mean the starting point as a driver toward sustainability, as has been empirically demonstrated [128], and sometimes, more regulation may be necessary to tackle unsustainable corporate practices [139]. But only those companies that carry out voluntary practices that complement the legal minimum will be covering the moral responsibility, which is essential to achieve sustainable competitive advantages [140] in the long run.

Due to the previous literature demonstrating the need to achieve a "fit" between the types of corporate social performance undertaken and the firm's stakeholder environment [83], it is necessary for managers to rethink strategies to go further and assume these new responsibilities [13,141,142].

(b) General strategy

Proactivity in the overall strategy of a firm favorably contributes to the development of proactive approaches in terms of social responsibility and in the search for a more SP of its activities [10,122,143–148].

(c) Hierarchical position of the sustainability manager

The relation between corporate governance and SP has been empirically determined through the lens of agency theory and stakeholder theory [149]. We consider that both the existence of a sustainability department [150] and the greater hierarchical position of the sustainability manager will

be a reflection of the importance given to sustainability performance [89,119,131] and its disclosure will be even strategically revealed [106]. So, we consider the implementation of sophisticated corporate governance mechanisms, such as the independence of the board, sustainability committees, board size and sustainability-based incentives in highly sensitive companies [16,33,44,151] to be a discriminatory driver of different SD strategies.

(d) Actions to achieve the sustainability of a firm's activities

Ullmann [80] dichotomizes the company's strategic position toward the realization of social responsibility activities, both active and passive, establishing that the more active a company, the greater the expectations awoken among the interest groups (p. 552). This is the intention of a management with an active vision. Specifically, Griffin and Mahon [152], Hart [153], Porter and Linde [154], Sharma and Vredenburg [116] and Schaltegger [119] established a direct relationship between social and environmental proactivity and the realization of activities that encourage their integration, forming part of the business strategy and processes [155] and, in sum, of their core business, ceasing to consider these activities as an additional expense for businesses [10,140].

In light of these findings, it can be concluded that a strategic posture is an important discriminating driver that must be considered. This leads us to raise the second hypothesis:

Hypothesis 3 (H3). *Sustainability Performance is a reflection of a Strategic Posture.*

3.2.4. Economic Performance (H3)

A firm's past and current economic performance has been considered as a formative character and variable of the firm's SP, which has been empirically corroborated [72,80,119,123,156] and in SD [14]. However, recently, after analyzing the prior literature which studies the CSR and financial or EP relation [157,158], or the SP and EP relation [159,160], or the relation between CSR disclosure and performance [37], it has been found more convenient to introduce certain moderating variables that strengthen the connection between the two. Further advancements in this field are thereby facilitated. Therefore, and given that sustainable action is currently a basic requirement for the company's survival, we consider its moderating nature instead of formative character. Hence, it is hypothesized that:

Hypothesis 4 (H4a). *The economic performance positively moderates the relation between SP and SD.*

Hypothesis 4 (H4b). *The economic performance is positively related to sustainability disclosure.*

3.2.5. Company's Size (H5)

Company size is one of the most analyzed variables in the literature, being confirmed as one of the most important drivers used as a proxy, both in the strategic integration of sustainability [83,105,161] in the social [60], environmental [57,83], CSR [14,40–42,162] and sustainability [85,163–165] disclosure. Thus, based on the existing literature, the following hypothesis can be formulated.

Hypothesis 5 (H5). *The size positively moderates the relation between SP and SD.*

4. Methodology

4.1. Structural Equation Modelling

Structural equation modeling (SEM) was used for performing the empirical analysis. To be more specific, our research model was tested using the technique of Partial Least Squares (PLS). The SEM approach allows (a) directly incorporating unobservable abstract constructs (latent variables) [166]; (b) determining the degree to which the measured variables are capable of describing the latent variables;

(c) modeling the relationships between the dependent variables and the predictor (independent) variables; and (d) testing the hypotheses suggested by the initial theoretical framework against data collected empirically [167]. According to Chin [168] one of the prime advantages of SEM is the ability to include latent (unobserved) variables in causal models. Thus, the researcher may model abstract constructs comprised of many indicators (observed variables).

Partial Least Squares (PLS) is used taking into account that the study is explanatory. We wish to obtain consistent estimates of the relationships between constructs [169]. We have used PLS for the following reasons: (1) the use of composite models (Mode A) [170]; (2) the complexity of the research model [171], (3) the utilization of latent variable scores in the subsequent analysis [172] and (4) the identification of key driver constructs to achieve partnership success [173]. The software used for the PLS analysis was Smart PLS Version 3.0. [174].

The evaluation of PLS models typically follows a two-level process. The first level includes the assessment of measurement models where different approaches for reflective and formative measurement models are used. The measurement model specifies the relationship between the observable variables which build the items of the questionnaire and the latent constructs. This is followed by the evaluation of the structural model, which covers the relationships between hypothetical constructs [175].

Initially, this model was validated for the whole sample (195 cases). Then the sample was separated into two sets: Large firms (we selected large Spanish companies in accordance with the IV European Directive which qualifies them as such when the following circumstances are present: More than 250 employees, a turnover of more than 50 million Euros and assets of more than 45 million Euros) and small firms. We compared the differences in the model between the segments using PLS-multigroup analysis (MGA). We analyzed the different disclosure of each segment in the structural model with this technique.

4.2. Sample Selection

We conducted a survey to test the proposed hypotheses. The questionnaire was composed of three parts. The first part included the firm's strategy and its interrelation with the management of sustainability. The second part consisted of statements about sustainability. The measures and information on sustainability constituted the third part.

The questionnaire was sent to 440 sustainability directors of firms located in Spain (a total of 195 usable questionnaires were received, which represents a response rate of 44.32%, a value in accordance with what Nunnally and Bernstein [176], Gorsuch [177], Anderson and Gerbing [178], Marsh et al. [179] and Bentler [180] propose. We also submitted the measurement scale to a "reliability analysis". This shows a Cronbach Alpha of 0.963 which, being over 0.9, indicates an excellent general reliability [180].

The respondents came from a variety of industries, selected among those affected by the Kyoto Protocol (The Kyoto Protocol, adopted in 1997 and which came into force in February 2005, establishes, for the first time, objectives to reduce net emissions of greenhouse gases (carbon dioxide, methane gas, nitrous oxide, hydro fluorocarbons, per fluorocarbons and sulfur hexafluoride) for the major developed countries and economies in transition. Greenhouse gas emissions from industrialized countries must be reduced by at least 5% below 1990 levels for the period 2008–2012. Spain is allowed to increase the emissions of the base year by 15%, and even so it is one of the countries with fewer possibilities of fulfilling the proposed objective) regulations, which appear in Annex I of Directive 2003: Electrical energy, petroleum refining, coking, metallurgy, cement, glass, ceramic products, chemical products, and paper and cardboard. We centered on these firms given that we are focusing on the analysis of firms with greater legal and external pressure, having a strong negative impact, and considering that they would show leadership regarding their SP and SD.

The data sheet (Table 6) shown below presents the data that characterize the study.

Table 6. Methodological details from the empirical study.

Technical Data Sheet	
Universe	Electrical energy, petroleum refining, coking, metallurgy, cement, glass, ceramic products, and paper and cardboard
Geographical area	Spain
Population	440 Spanish companies affected by the Kyoto Protocol
Period	October 2010–March 2011
Method of gathering information	Electronic questionnaire reinforced by previous phone calls and e-mails
Sampling unit	Managers in charge of social, environmental and sustainability management
Final sample	195
Participation rate	44.32%
Maximum error sample	0% (no error sample)
Confidence Level	95%

Source: Own elaboration.

Regarding the 195 participants, some descriptive data are presented below which allow us to draw up the company profile which was analyzed (Table 7). Also see Table 8 regarding the profile of the managers surveyed.

Table 7. Main descriptive data from the sample of Spanish companies affected by the Kyoto Protocol used.

Variable	**Category**	**Frequency**	**Percentage (%)**	**Cumulative Percentage (%)**
Kind of company	Electrical energy	104	53.33	53.33
	Petroleum refining	5	2.56	55.90
	Metallurgy	33	16.92	72.82
	Cement	8	4.10	76.92
	Glass	12	6.15	83.08
	Ceramic products	15	7.69	90.77
	Chemical products	4	2.05	92.82
	Paper and cardboard	14	7.18	**100.00**
Operating Income	0–10 Mill. €	42	21.54	21.54
	11–50 Mill. €	49	25.13	46.67
	51–100 Mill. €	30	15.38	62.05
	101–150 Mill. €	12	6.15	68.21
	151–200 Mill. €	8	4.10	72.31
	201–500 Mill. €	20	10.26	82.56
	501–1000 Mill. €	14	7.18	89.74
	1001–2000 Mill. €	8	4.10	93.85
	2001–5000 Mill. €	5	2.56	96.41
	More than 5000 Mill. €	7	3.59	**100.00**

Source: Own elaboration.

4.3. Measurement Instrument and Data Extraction Method

Based on the previous literature, the items corresponding to the different constructs of the measurement scale that make up the questionnaire were constructed. Each construct was measured by multiple-item scales. Based on Chulián and González [181], in total 41 items were proposed to analyze the SP construct through six sub-constructs and, additionally, the study of SD had a total of 14 specific items (Table 9).

Table 8. Main descriptive characteristics from the manager surveyed.

Variable	Category	Frequency	Percentage (%)	Cumulative Percentage (%)
	Chairpersonship	2	1	1
	Higher level manager (Sustainability/Environment)	60	30.8	31.8
	Intermediate level manager (Sustainability/Environment)	38	19.5	51.3
	Lower level manager (Sustainability/Environment)	8	4.1	55.4
	Associate to managers (Sustainability/Environment)	25	12.8	68.2
	Environmental Department Director	51	26.3	94.5
	Quality Department Director	1	0.5	95
	Productive Process Director	1	0.5	95.5
	Marketing Director	3	1.5	97
	Externally Subcontracted Service	3	1.5	98.5
	Other	3	1.5	**100**

Source: Own elaboration.

Table 9. Proposed indicators for the variables used in the survey.

Variable	Name	In This Company Greater Importance is Given to...
Organizational Stakeholders	**OS1**	Customers
	OS2	Shareholders
Non-Organizational Stakeholders	**NO1**	Trade Unions
	NO2	Employers' Associations
	NO3	Ecological Associations
	NO4	Financial Entities
	NO5	Investment Funds
Responsibility	**R1**	Legal Responsibility (legislation)
	R2	Moral Responsibility (commitment greater than what is legal)
Managers' Perception	**MP1**	The activity of the company affects the environment and society
	MP2	The activity of the company has a greater effect than other sectors
Managers' Commitment	**MC1**	Manager's Proactivity (Responsibility)
	MC2	Adverse attitude toward the search for Sustainable Development
General Strategy	**GS1**	Products Leadership
	GS2	Cost Leadership
	GS3	Differentiation and competitive advantage
	GS4	Excellence of the productive process
	GS5	Proximity to clients
	GS6	Segmentation or market approach
	GS7	Sustainability
	GS8	Other
Hierarchical Position Sustainability Manager	**HP1**	Chairpersonship
	HP2	Higher level manager (Sustainability/Environment)
	HP3	Intermediate level manager (Sustainability/Environment)
	HP4	Lower level manager (Sustainability/Environment)
	HP5	Associate to managers (Sustainability/Environment)
	HP6	Environmental Department Director
	HP7	Quality Department Director
	HP8	Production Process Director
	HP9	Marketing Director
	HP10	Externally Subcontracted Service
	HP11	Other
Sustainability Actions (Administrative, Diagnostic and Certification)	**SA1**	Environmental Policy

Table 9. *Cont.*

Variable	Name	In This Company Greater Importance is Given to...
	SA2	Environmental/CSR/Sustainability Manager
	SA3	Protection Manual
	SA4	Social and Environmental Disclosure
	SA5	Staff Training
	SA6	Diagnostic Analysis: Social and Environmental Impacts
	SA7	Analysis of the Cycle Life
	SA8	ISO 14001
	SA9	EMAS
Sustainability Disclosure	**SD1**	Social and Environmental Provisions
	SD2	Social and Environmental Contingencies
	SD3	Financial Estimates of Social and Environmental Cost Not Internalized
	SD4	Social and Environmental Investments
	SD5	Estimation of social and environmental costs
	SD6	Waste Management
	SD7	Energy Saving
	SD8	Recycling
	SD9	Compliance with legislations
	SD10	Sanctions
	SD11	Litigations
	SD12	Social and environmental audit and management systems
	SD13	Estimation of social and environmental income
	SD14	Assurance of Social and Environmental Responsibilities

Source: Own elaboration.

The companies' managers were asked to evaluate themselves according to their perceptions and rate their level of agreement on a seven-point Likert scale, where 1 represented "strongly disagree" and 7 represented "strongly agree".

5. Results

5.1. Inner Model Evaluation

As Henseler et al. [170] point out, PLS Path modeling results can be assessed globally (overall model) and locally (for the measurement models and the structural model).

The content validity is based on the theoretical and empirical evidence supported by the measurement instruments used. Specifically, the content validity of Ullmann's model scales is based on the rigorous procedure in the development of the scales included in the questionnaire. Thus, theoretical, conceptual and empirical aspects were considered in the literature review.

The objective of this step is to verify whether the measurement scales are valid. To evaluate the measurement model, we analyzed the composite reliability of each item, the internal consistency of the scale and the convergent validity. To measure the relationship and individual reliability of each item (λ), a standardized load of the factor greater than 0.707 ($\lambda > 0.7$) is recommended [182–185]. This is the most stringent criteria and a less strict one accepts indicators above 0.5 [168] in the early stages of developing scales, as we consider is our case. As shown in Table 10 (whole sample) and 10 (segmented sample), the scores were either close to or above the recommended threshold value of 0.7.

The research values are in a range of 0.663 to 0.927, above 0.7, observing that of the 56 initial items we have maintained a total of 41 indicators (Table 10). The composite reliability shows values in a range of 0.904 to 0.961. The indicator must be above 0.80 for basic research, according to what Nunnally [186] and Vandenberg and Lance [187] proposed.

The traditional Cronbach's Alpha coefficient [188] was used to examine the construct reliability that is the reliability index of the latent variables. As recommended by Nunnally [186] and Hair et al. [189], values above 0.70 were considered acceptable and sufficient.

Table 10. Cronbach's Alpha, average variance extracted (AVE), composite reliability and factor loadings.

Items			All
SP		AVE	0.826
		Composite Reliability	0.904
		Cronbach's Alpha	0.789
	Stakeholders' Powers		0.901
	Strategic Position		0.916
SD		AVE	0.677
		Composite Reliability	0.961
		Cronbach's Alpha	0.956
	Accountability on environmental provisions		0.927
	Accountability on environmental contingencies		0.857
	Accountability on non-internalized environmental costs estimates		0.806
	Accountability on internalized environmental costs estimates		0.860
	Accountability on resource management		0.663
	Accountability on energy savings		0.793
	Recycling		0.763
	Compliance with legislations		0.791
	Accountability on sanctions		0.701
	Accountability on litigations		0.913
	Accountability on estimation of environmental income		0.915
	Accountability on the assurance of environmental responsibilities		0.841
EP			
	Economic Performance	N.A.	N.A.

The average variance extracted (AVE) was used to calculate the convergent validity of each construct in the model [190]. This indicator provides the amount of variance that each construct obtains from its indicators in relation to the amount of variance due to measurement error. The value that the AVE indicators of constructs in a model should present is at least 0.50 [189,190]. In our case, the values of the AVE indicators are in a range of 0.677 to 0.826 (Tables 10 and 11). The analysis of the measurement scale for performance and the factor analysis results obtained play a crucial role in this study in ensuring the unidimensionality and discriminant validity of the proposed scale. Such a result confirms the theoretical specific nature of SP and SD made up of as a mix of items of both a financial and non-financial character.

Table 11. Cronbach's Alpha, AVE, composite reliability and factor loadings.

Items			All	Large	Small
SP		AVE	0.826	0.804	0.800
		Composite Reliability	0.904	0.891	0.930
		Cronbach's Alpha	0.789	0.757	0.850
	Stakeholders' Powers		0.901	0.910	0.922
	Strategic Position		0.916	0.883	0.942
SD					
	SD			N.A.	N.A.
EP					
	EP			N.A.	N.A.

The factor model can be assessed in various ways. The reliability and validity of the measurement model have been analyzed following the recommendations published in the literature [170,190]. The individual reliability of each item is ensured through loadings of more than 0.7. We analyze the reliability of the constructs using the ρ_A [191]. This is currently the only consistent reliability measure for PLS construct scores and composite reliability ρ_c [192]. In addition, convergent validity has been ensured by analyzing the AVE. In our analysis, all the indicators offered levels above the 0.5 score proposed by the literature. Finally, discriminant validity was assessed in two ways: Using the Fornell and Larcker test and using the heterotrait–monotrait index [170,193] (see Tables 12 and 13). If the

correlation coefficient b is compared with the square root of the AVEs, in all cases the traditional condition is fulfilled. This analysis is completed by examining the correlations of each indicator with the construct which shows that the correlation is always higher with the construct to which the indicator belongs. In addition, the analysis calculated the heterotrait–monotrait index. This value is well below the 0.90 threshold established by the authors. After these three complementary tests, it can be asserted that the model's constructs possess discriminant validity. Consequently, hypotheses H_2 and H_3 are accepted, having proved the nature of SP as a multidimensional second order construct.

Table 12. Fornell and Larcker test.

	Moderating Effect EP	EP	SD	SP
Moderating Effect EP	1.00			
EP	−0.11	1.00		
SD	0.04	0.07	0.82	
SP	−0.16	0.15	0.52	0.90

Table 13. Heterotrait–monotrait ratio (HTMT).

	Moderating Effect EP	EP	SD	SP
Moderating Effect EP				
EP	0.11			
SD	0.04	0.07		
SP	0.18	0.17	0.57	

5.2. Outer Model Evaluation

A structural model was used to assess the hypothesized relationship of the constructs, the coefficient of determination (R^2), the path coefficient and their corresponding significance scores.

In order to verify that there is no multicollinearity between the variables of each of the endogenous constructs, and according to Hair et al. [194], we analyzed the variance inflation factor (VIF) values of the structural model (see Table 14). All the VIF values are less than 5 and therefore there is no evidence of multicollinearity.

Table 14. Variance inflation factor (VIF) values.

	Moderating Effects	EP	SD	SP
Moderating Effects			1.035	
EP			1.031	
SD				
SP			1.041	

To assess the statistical significance between latent variables (constructs), traditional parametric tests are inappropriate in PLS [195]. Therefore, bootstrapping was used as a non-parametric test to test the hypothesized relationship between constructs [196]. In order to do this, 5000 bootstrap samples were established by resampling with replacements from the original samples.

Hypotheses H_1 and H_{4b} were verified by exploring the path coefficients and hypothesis H_{4a} was rejected for the whole sample (see Table 15). The outcomes of the multi-group analysis for the model with the groups of large and small firms are shown in Table 7. Based on these results, hypothesis H_1 is accepted because this hypothesized relationship is statistically significant for both large and small companies. From this table we cannot accept hypothesis H_{4a} (statistically significant differences between large and small firms exist in the relationship between variables of the EP, see Table 16)

because statistically significant differences between large and small firms do not exist in the direct relationship between the variables of the EP and SD. Hypothesis H_{4b} is accepted for large companies and rejected for small companies as the moderating effect of EP is positive and significant in the relationship between SP and disclosure for large companies. Figure 2 shows the result for the model considering the whole sample.

Table 15. Path coefficients of the whole model.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t Statistics (|O/STDEV|)	*p* Values
Moderating Effect ≥ SD	0.120 **	0.123	0.047	2.586	0.010
EP ≥ SD	0.003 (n.s.)	0.005	0.066	0.048	0.962
SP ≥ SD	0.543 ***	0.548	0.048	11.380	0.000

Statistical significance: (**) $p < 0.01$; (***) $p < 0.001$; n.s. non-significant.

Table 16. Path coefficients of the model by segments.

	Large	Small	Large–Small	Henseler's *p* Value (sig)
Moderating Effects ≥ SD	0.38 ***	0.05 (n.s.)	0.33	0.33 (n.s.)
EP ≥ SD	0.08 (n.s.)	−0.14 (n.s.)	0.22	0.22 (s.)
SP ≥ SD	0.44 ***	0.48 ***	0.04	0.04 (n.s.)

Statistical significance: (***) $p < 0.001$; n.s. non-significant.

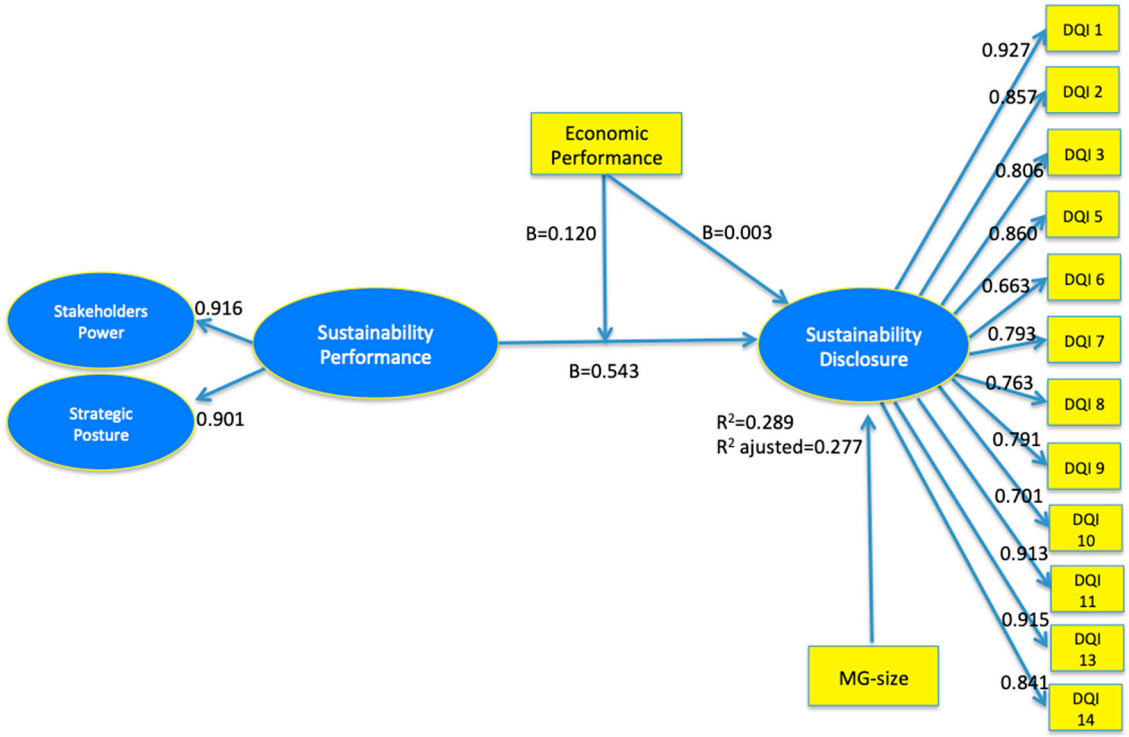

Figure 2. Partial Least Squares results for the whole sample.

Chin [195] proposes values exceeding 0.19 for the R^2 value. The value obtained of 0.289 is the closest to the established moderate limits. In addition, the adjusted R^2 value is 0.277, so the model has a moderate predictive power. Supporting the hypothesis of this work, it can be observed that SP, reflected by the dimensions commented on, can account for approximately 55% of the SD in the sample.

The fit of the global model can be carried out in two ways: (i) by inferential statistics or by exact bootstrap-based fit tests [170,191,197,198]; or (ii) by fit indices that provide a rough estimate of the model's fit.

Accurate bootstrap-based matching tests [198] determine the probability of obtaining a discrepancy between the correlation matrix implied by the model and the empirical correlation matrix. If it gives a value above 5% (depending on the Alpha level) of the bootstrap samples (Standardized Root Mean Square Residual (SRMR), d_{ULS}, D_G), producing discrepancy values above the real model, it is not unlikely for the sample data to come from a population that works according to the hypothesized model and it is unlikely that the model will be rejected [199].

Approximate fit measures of the model [170,199] try to assess how important the discrepancy between the correlation matrix implied by the model and the empirical correlation matrix is. The test recommended by Hu and Bentler [200,201] is the Standardized Root Mean Square Residual (SRMR), which measures the differences between the matrix of correlations observed and that implied by the model. The lower the value given by the SRMR, the better the fit will be. According to Hu and Bentler [200] the model will have a good fit when the SRMR <0.08, although Ringle proposes that SRMR <0.10 (see Table 17). For their part, Bentler and Bonett [202] established the Normed Fit Index (NFI) for factor-based models, and the closer to 1, the better, although values above 0.9 represent an acceptable fit [203]. And, for the compounds the root mean square error correlation (RMS_{theta}) is used, in which values below 0.12 are initially considered a good fit, although this only works with models with reflective indicators.

Table 17. The bootstrap-based tests of exact fits.

SRMR	**(O)**	**2.5%**	**97.5%**
Saturated model	0.086	0.032	0.046
Estimated model	0.086	0.032	0.046
d_ULS	**(O)**	**2.5%**	**97.5%**
Saturated model	0.880	0.119	0.255
Estimated model	0.880	0.120	0.258
d_G	**(O)**	**2.5%**	**97.5%**
Saturated model	1.099	0.167	0.439
Estimated model	1.099	0.170	0.442

5.3. Moderating Effects

Moderating effects are evoked by variables whose variation affects the strength of a relation between an independent and a dependent variable [204]. Such causes of moderating effects are called "moderator variables" or just "moderators" (p. 1174).

In recent years, there has been a growing interest in the methodology aimed at detecting moderating effects in PLS path models, among them Chin et al. [205], Henseler and Chin [206], Henseler and Fassott [207] and Fassott et al. [208].

We present the moderation analysis to detect the moderating effect of EP on the relationship between SP and SD. To test the possibility of such an effect, SP and EP were multiplied to create an interaction construct to predict SD.

To test the moderating effect, we have estimated the influence of SP on the SD variable, the direct impact of the moderating variable on SD and the influence of the interaction variable on SD. The significance of a moderator can be confirmed if the interaction effect is meaningful, irrespective of the size of the path coefficients. In this case, we have estimated a path coefficient of 0.120 for the interaction construct that is significant at $p < 0.010$. The effect size is calculated as follows:

$$f^2 = \frac{R_i^2 - R_m^2}{1 - R_i^2} = \frac{0.289 - 0.273}{1 - 0.289} = 0.023.$$

The results show that the size of the moderating effect is significant but small: $0.15 > f^2 > 0.02$; [209]. Consequently, we confirm that EP does moderate the relationship between SP and SD, and we accept H_{4b} (see Figure 2).

However, the moderating effect of EP for the segmented sample in large and small companies changes in relation to the whole sample. For large companies, the moderating effect of profitability is significant for $p < 0.01$ and the coefficient presents a positive sign; that is, the greater the EP of large companies, the greater the relationship between SP and the disclosure of the information (explanation). However, for small companies the moderating effect of EP on SD is positive but not significant (see Table 16).

6. Discussion

This study adds to the extant literature on SD with an empirical contribution in specific sectors in three ways. The first is due to the contradictory evidence that there has been until now in the relationship between SP and SD, mainly as a consequence of the multidimensional nature of both concepts, as the empirical evidence of their relationship is, in some cases, contradictory (positive, negative and even neutral). The second is because, given that the variables included in the analysis of their relationship do not completely explain it, it is necessary to include new variables in the model. Aiming to do so, we therefore analyze the impact of financial profitability on this relationship as a moderating variable. Third, the authors discuss the amplifying effect that the size of the corporation has on this moderation. More specifically, it completes previous research on disclosure in the following subjects.

First, it confirms the positive sense for SD–SP. Authors have confirmed the relation between economic performance and (1) environmental disclosure [28,72,102]; (2) social disclosure [60,87]; (3) CSR disclosure [14,33,34,82]; and (4) SD [32,104]. Others have confirmed this positive relationship between environmental disclosure and (1) good [28,106]; (2) bad [35,106,107]; (3) a higher impact [83]; and overall (4) [29–31] environmental performance. Our results therefore corroborate previous studies about SD–SP [85]. However, in this study there are different variables that influence the relationship between performance and disclosure, a variable, economic profitability also being introduced as a moderating variable of this relationship.

Second, this study adds changes to Ullmann's model [80], where SP will be explained by two dimensions, the stakeholders' power and the strategic posture, and economic profitability moderates the relationship between performance and disclosure. The results of this study corroborate that SP, as a third-order construct, is formed by the participation of two variables: (1) the stakeholders' power and (2) the strategic posture. In turn, and as a second-order construct, the variable (1) stakeholders' power is explained by the organizational stakeholders as in Husillos and Alvarez-Gil [72] and Chiu and Wang [60] and by those who are non-organizational. The latter is a dimension that is a new empirical contribution in relation to Husillos and Alvarez-Gil's study [72] on Spanish SMEs, although other studies such as Chiu and Wang's [60] obtained similar results but in the Taiwan Capital Market. On the other hand, (2) the strategic posture variable, as a second-order construct, has six dimensions: Responsibility [210–212], mangers' perception [72,129,130], managers' commitment [122,135,136], managers' values [111], general strategy [122,148,154,213], the position of the sustainability manager [149] and sustainability actions [72,126,153]. In this sense, the management of each of these variables will affect the performance and its objectives. The results confirm that the strategic posture and stakeholders' power are multidimensional constructs as well as the performance variable. If CEOs take this study into account, they will save effort and time in the management and achievement of SP-related objectives.

Third, in relation to the variable economic profitability, this study makes a new contribution to Ullmann's theoretical model [80] since it has been introduced as a moderating variable of the relationship between SP and SD, unlike previous studies [72,80,123] in which it was inserted as an SP dimension. Our results show that the relationship between performance and disclosure is moderate, with a significant effect due to economic profitability. Today, companies are aware that

designing the management of their business in a socially responsible environment is an added value that will allow them to maintain their long-term results. Therefore, the value that their profitability yields will not be determinant for this type of socially responsible management, but it will affect the disclosure of this activity. However, there is no direct relationship between profitability and disclosure of sustainability information, as other previous studies concluded ([14,82–84,88,91,102,103,214], among others in environmental disclosure), and Brine et al. [36], Chiu and Wang [60] and Roberts [82] in CSR disclosure.

Fourth, the variable of control "size" has been introduced into our model as a segmented multigroup variable in large and small companies. The results show that the relationship between SP and SD is positive and significant for both large (both in social information disclosure [60], that which is environmental [83], that concerning CSR [14,40,42,60,110] and that to do with sustainability [85,163–165]) and small companies [72]. However, the moderating effect of economic profitability on the relationship between SP and its disclosure is positive and significant but is not significant for small companies.

Also, the level of quality in sustainability reports enhances their credibility and, in turn, influences the perception of stakeholders, improving corporate reputation [215] or damaging it [83]. So, we conclude that ***the stakeholders' power and the strategic posture strongly affect the firm's quantity and quality of SD***. Our research shows that SD and Organizational Change Management for Sustainability have reciprocal reinforcing relationships where SD provides a starting point for planning organizational change for sustainability, and organizational change for sustainability improves the reporting process [2,110,216].

7. Conclusions

The need for transparency and for "democratizing information" is an ethical and legal imperative, since it allows a fairer distribution of wealth and power in society. Companies have become aware of the importance of the disclosure of information on sustainability, partly due to the pressure of their stakeholders and somewhat to legitimize their activities. But it is really the actions on sustainability that show us the company's identity and its commitment to society in general.

Having analyzed that there are disparate empirical results regarding the relationship between SP and SD, we provide new evidence about this relationship. In addition, we have examined the reasons that lead the large Spanish companies bound by the Kyoto Protocol to disseminate information about their social responsibility and their contribution to sustainable development. To do so, the application of stakeholder theories, from the fundamental work of Ullmann in 1985, is taken as a reference for the definition of the main theoretical constructions. Given that previous research works [72,82] have shown that this model alone does not fully explain the disclosure of information on social responsibility and the search for the company's sustainability, it was necessary to complete this model and incorporate other variables that have been analyzed in the literature according to other theoretical postulates, such as the search for legitimacy or the fulfillment of responsibility. In this research, we have updated Ullmann's work, by developing his theoretical constructs and introducing new ones in order to improve the empirical testing. Firstly, we have analyzed the constructs that make up SP in companies, which have been comprised of two variables used by Ullmann [80]. Firstly, "stakeholders' power", which refers to the main reasons why managers prioritize demands from some stakeholders instead of others, has been dissected and analyzed by applying the model proposed by Mitchell et al. [217]. Likewise, managers' "strategic posture", referring to the qualities and proactivity of managers in their relationship with different stakeholders and the search for sustainability, has been considered. Secondly, we have defined the Sustainability Reporting construct and the strategic use of this information. Thirdly, in reference to the "economic performance" variable proposed by Ullmann as a formative variable, we have developed this through the profitability construct, widely employed in the literature on management as a moderating variable. In line with Ullmann, we consider that in addition to economic profitability, external pressures and the company's own values, SD should also be related to other variables such as the organization's size.

Therefore, with this work we contribute to the improvement of Ullmann's theoretical model by providing more appropriate definitions of the key concepts through the introduction of different strategic positions, using both voluntary and mandatory disclosures of information and the introduction of new approaches concerning the definition of the constructs, such as the effect of legal and moral responsibility. Of special relevance is the contribution to the moderating effect of economic profitability instead of explanatory variables as in previous studies [72,80,123]. Our results conclude that economic profitability moderates the relationship between SP and SD for both the complete sample and for large companies but not for small companies. However, the direct relationship between economic profitability and disclosure is not significant.

This study is not without limitations, which will become future research. Firstly, it has focused on large companies in Spain, so this study cannot be applied to small- and medium-sized enterprises. Future research should incorporate these data because of their enormous importance from the perspective of sustainability. Secondly, this study took a sample of companies from a single developed country, so our findings cannot be generalized to other countries, such as developing countries where CSR and sustainable management and dissemination are in their embryonic state, both culturally, legally and contextually. Thirdly, we could have included other measures of sustainable disclosure, such as its level and quality. Fourthly, we considered data from 2011, so more recent data would enable us to understand the up-to-date picture of SD and SP in Spain. This would allow us to compare our results with new realities of the relationships and disclosures relating to the sustainability concept in the light of the 2014/95/EU directive's requirements [218]. (In Spain it has been transposed through Law 11/2018, coming into effect in the financial year 2019.) Fifthly, we include sensitive sectors with a high environmental impact, traditionally considered in previous investigations. In future research, we ought to include sectors traditionally considered non-sensitive, clean or of a low impact, for example, the financial or banking sector [218], extremely active in their SD and SP, and in their role of intermediation with families, companies and governments for the achievement of sustainable development and a true inclusion due to "an economy is not sustainable in the long term if it excludes people or community" (UNEP, 2015:8).

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