Esic Market Economics and Business Journal
Vol. 55, n.º 1, enero-abril 2024, e353

Environmental products and sustainability awards: The intangible benefits of sustainability strategies

Productos medioambientales y premios de sostenibilidad: Los beneficios intangibles de las estrategias de sostenibilidad

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Received: 29-11-2023; Accepted: 12-02-2024; Published: 29-04-2024

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ISSN 0212-1867 / e-ISSN 1989-3574

ESIC University
https://revistasinvestigacion.esic.edu/esicmarket

How to cite:
García-Sánchez, I. M., Piñeiro-Chousa, J. R., Aibar-Guzmán, C. & Aibar-Guzmán, B. (2024). Environmental products and sustainability awards: The intangible benefits of sustainability strategies. *ESIC Market. Economics and Business Journal,* 55(1), e353. DOI: 10.7200/esicm.55.353

Abstract

Objective: To analyse the impact of companies' commitment to the production and distribution of environmental products on the winning of sustainability awards, and whether it is affected by the effects of the crisis and uncertainty caused by the Covid-19 pandemic and the Russian invasion of Ukraine.

Methodology: Based on a sample of 718 companies from 35 countries and data from 2013 to 2022, a logistic regression for panel data was used.

Results: The results show that the production and distribution of environmental products is positively associated with winning sustainability awards, and this effect is slightly stronger in the uncertainty period that characterises the years 2020 to 2022. Sustainable packaging initiatives and end-of-life recovery and recycling initiatives are the attributes with the greatest weight in external recognition, although the latter starts to become relevant in the uncertainty period. Furthermore, both producing and distributing sustainable products and winning sustainability awards have a positive and significant impact on customer satisfaction.

Limitations: The sample consists of the world's largest companies, so the results might differ if smaller companies were analysed. The dependent variable is binary, which did not allow us to examine in detail the impact of environmental products on companies' external recognition.

Practical implications: The results may encourage managers to produce and distribute sustainable products to increase external recognition and customer satisfaction and provide guidance on the attributes to be developed. They could guide policy-makers in making companies more resilient to crises by encouraging them to innovate environmentally in their products.

Keywords: corporate social responsibility; CSR awards; disruptive periods; customer satisfaction; logistic regression model

JEL Codes: M11; M19; Q01

Resumen

Objetivo: Analizar el impacto de la fabricación y distribución de productos medioambientales en la obtención de premios de sostenibilidad, y cómo le han afectado la crisis e incertidumbre provocadas por el Covid-19 y la invasión de Ucrania.

Metodología: A partir de una muestra de 718 empresas de 35 países y datos de 2013 a 2022, se utilizó una regresión logística para datos panel.

Resultados: La fabricación y distribución de productos medioambientales afectan positivamente a la obtención de premios de sostenibilidad, siendo este efecto mayor en el periodo de incertidumbre que caracteriza los años 2020 a 2022. Los envases sostenibles y la recuperación y reciclaje al final de la vida útil son los atributos con mayor peso en el reconocimiento externo, aunque el impacto del último empieza a ser relevante en el periodo de incertidumbre. Tanto la fabricación y distribución de productos sostenibles como los premios de sostenibilidad afectan positivamente a la satisfacción del cliente.

Limitaciones: La muestra incluye las mayores empresas del mundo, por lo que los resultados podrían diferir si se analizaran empresas más pequeñas. La variable dependiente es binaria, lo que no permitió examinar en detalle el impacto de los productos medioambientales en el reconocimiento externo.

Implicaciones prácticas: Los resultados podrían incentivar la fabricación y distribución de productos sostenibles para aumentar el reconocimiento externo y la satisfacción de los clientes y orientar sobre los atributos a desarrollar. También el desarrollo de políticas para aumentar la resiliencia de las empresas a las crisis animándolas a innovar medioambientalmente en sus productos.

Palabras clave: responsabilidad social de las empresas; premios de RSE; periodos perturbadores; satisfacción del cliente; modelo de regresión logística

Códigos JEL: M11; M19; Q01

1. Introduction

Although firms may have a number of reasons for going 'green', including those of a philanthropic nature, enhancing their reputation is generally considered to be a primary motivation as a means of obtaining competitive advantages and increasing profits (Lee et al., 2019; Qiu et al., 2020; Alam & Islam, 2021). Companies are under pressure to demonstrate that they are meeting stakeholder expectations in terms of environmental and social performance (Fombrun, 2005; Dangelico & Pujari, 2010; Pritchard & Willson, 2018). Therefore, in order to improve its reputation, a company needs to compare favourably with its peers in the eyes of its stakeholders (Tetraul Sirsly & Lvina, 2019).

Sustainability awards give the winners greater visibility (Tetraul Sirsly & Lvina, 2019; Lai et al., 2022) and, to the extent that they are awarded by credible third parties, are not subject to accusations of greenwashing (Lyon et al., 2013). From this perspective, winning a sustainability award allows a company to outperform its competitors in the eyes of its stakeholders, thereby improving its image and reputation, as well as providing several other benefits (Font & Tribe, 2001; Li et al., 2018; Lee et al., 2019). Thus, recent studies (e.g., Benjamin & Biswas, 2022; Uyar et al., 2022) show that receiving a sustainability award has a positive impact on firm value. In this sense, Benjamin and Biswas (2022) find that such an impact is higher for firms with higher environmental performance in terms of reduced environmental emissions and environmental innovation in both processes and products.

On the other hand, stakeholder perceptions of corporate behaviour are not static, but change as the context changes (Tetraul Sirsly & Lvina, 2019). Crises and catastrophic situations in the business, economic and social environment create uncertainty and affect both corporate actions and stakeholder demands (Conz & Magnani, 2020; Ghobadian et al., 2022). In particular, two recent unpredictable adverse events in the external environment (i.e., the Covid-19 pandemic and the Russian invasion of Ukraine) have disrupted market and business functioning and changed stakeholder demands (He & Harris, 2020; Boubaker et al., 2022; Metsiou et al., 2023; Su & Junge, 2023).

Under these premises, the main objective of this research is to analyse the impact of companies' commitment to the production and distribution of environmentally

sustainable products on their public recognition, as reflected in the winning of sustainability awards. On the other hand, it was assessed whether the expected relationship between them has been affected by the effects of the crisis and uncertainty of the 2020-2022 period on the population and the business fabric. A sample of 718 companies from 35 different countries were collected, whose information is analysed over the years 2013 to 2022.

In doing so, we aim to fill a gap in the literature, as there are few studies that analyse the intangible benefits of sustainability strategies and even fewer that consider the enhancement of corporate reputation through sustainability awards (Benjamin & Biswas, 2022; Uyar et al., 2022; E-Vahdati et al., 2023). Moreover, no study to date has analysed the impact of two simultaneous external shocks on firms' pursuit of intangible benefits through sustainability investments. We also respond to recent calls (e.g., Benjamin & Biswass, 2022; Mattera & Soto, 2023) for more research on this topic.

This study contributes to the literature in several ways. First, our study adds to the sustainability literature by complementing the prevailing focus on the financial outcomes of firms' sustainability commitment. Compared to the extensive literature on the financial (tangible) benefits of firms' sustainability engagement, research on its non-financial (intangible) benefits is limited (Uyar et al., 2022), and in particular, sustainability awards as a proxy for corporate reputation have received little research attention (Benjamin & Biswass, 2022; Lai et al., 2022; E-Vahdati et al., 2023). This study links the production and distribution of environmental products with public recognition of firms through sustainability awards, and shows that the generation of intangible benefits can be an important outcome of these initiatives in the context of firms' long-term sustainability commitment. We also contribute to the growing literature on organisational resilience by identifying sustainability commitment through the production and distribution of environmental products as a means to face adverse events, withstand the crisis and reap benefits. As far as we are concerned, with the exception of the study by Mattera and Soto (2023), no other empirical research has been conducted that considers the impact of the double external crisis caused by the Covid-19 pandemic and the Russian invasion of Ukraine on the outcomes of firms' sustainability commitment. We show that the positive effect of environmental product production and distribution on firms' external perceptions is higher during this period of disruption, suggesting that these initiatives promote organisational resilience.

Following this introduction, the rest of the paper is structured as follows: the second section outlines the theoretical framework, a review of previous studies and the development of the research hypotheses. The design of the empirical study is explained in the third section. The fourth section presents and discusses the findings, while the fifth section reports the results of a complementary analysis. Finally, the last section draws the main conclusions of the study, discusses its theoretical and practical implications, presents its limitations, and suggests some avenues for future research.

2. Background, literature review, and research hypotheses

2.1. Theoretical framework

Several theories contribute to improving understanding of the relationship between corporate sustainability commitment and corporate reputation. In this study, we combine the postulates of stakeholder theory and social reputation theory. According to the former, companies seek to manage the expectations of their stakeholders on a range of matters and create value for them (Freeman et al., 2020). From this perspective, a company's environmental orientation, represented by the production and distribution of environmental products, is seen by stakeholders as a sign that it takes into account their interests and demands in this regard (Pritchard & Wilsom, 2018; Aibar-Guzmán & Somohano-Rodríguez, 2021).

According to social reputation theory, social reputation constitutes a primary motivation for agents (countries, companies or people) to adopt (or avoid) certain behaviours or practices (Erickson, 2015). When applied to the context of corporate sustainability, this theory suggests that a company's interest in improving its social reputation drives its sustainability efforts (Uyar et al., 2022). From this perspective, it is plausible to assume that firms will be inclined to produce and distribute environmental products in order to build a better reputation (Álvarez-González et al., 2015; Lai et al., 2022; Uyar et al., 2022).

2.2. Environmental products and sustainability awards

As defined by Ottmam et al. (2006, p. 24), green, sustainable or environmental products are "those that strive to protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste" throughout their life cycle. Following a win-win approach (Aibar-Guzmán et al., 2023), these products not only minimise harmful impacts on the environment, but can also be a source of potential tangible and intangible benefits for companies (Dangelico & Pujari, 2010; Castro-González & Bande Vilela, 2016; Aibar-Guzmán & Somohano-Rodríguez, 2021). In particular, the production and distribution of environmentally friendly products enhances a firm's reputation (Küçüksayraç, 2015; Pritchard & Wilson, 2018; Lai et al., 2022).

Stakeholders' evaluations of environmental products are usually based on their perceptions of the products' environmental attributes (AL-Ghaswyneh, 2019; Ioannou et al., 2023), which in turn are often influenced by external cues such as labels (Majer et al., 2022). In this sense, to the extent that sustainability awards are usually associated with superior environmental performance of products (Lai et al., 2022), they promote the company's green image (Lee et al., 2019) and thus enhance corporate reputation (Benjamin & Biswas, 2022; Uyar et al., 2022; E-Vahdati et al., 2023). However, Uyar et al. (2022) found that building corporate

reputation through sustainability awards requires full corporate commitment to the environmental and social dimensions of sustainability. Indeed, companies can use advertising to increase their visibility, but this will only have a short-term impact if it is not backed by positive sustainability performance (AL-Ghaswyneh, 2019; Tetraul Sirsly & Lvina, 2019).

Based on the above discussion, it is reasonable to assume that the production and distribution of environmental products can have a positive impact on a company's public perception, as reflected in winning sustainability awards:

H1: The production and distribution of environmental products is positively associated with winning sustainability awards.

2.3. The link between environmental products and sustainability awards in times of disruption

Firms are not isolated entities but are part of the political, economic, social, etc. environment with which they are in constant interaction. The environment thus acts as a constraining force on firms, and firms in turn act by trying to mitigate the effects of the environment or change it in their favour (Wang et al., 2020). Consequently, the development of a firm is influenced by the characteristics of the environment, so that its survival and success are determined by its ability to meet the challenges posed by the environment and to cope with the uncertainty of the environment in which it operates (Amankwah-Amoah et al., 2021). The pressures and demands of the environment may cause the firm to make strategic adjustments, change its structure or alter its objectives (Haarhaus & Liening, 2020; Adam & Alarifi, 2021).

Building on a substantial body of theoretical and empirical knowledge about organisational design accumulated since the 1960s, contingency theory posits that a firm's performance is a result of the "fit" between its structure and management philosophy and the environment in which it operates, which is typically characterised by instability and uncertainty (Ghobadian et al., 2022). From this perspective, companies change their structures, strategies and management philosophies in order to adapt to changes in their environment (Safari & Saleh, 2020), and the most effective and therefore highest-performing companies are those that adapt more quickly to the new "contingency factors" (Mikalef & Krogstie, 2020; Posen et al., 2020). In this sense, the fit between environmental context and business strategy has been shown to become more important in the face of the Covid-19 pandemic (Hitt et al., 2021; Ghobadian et al., 2022). Thus, contingency theory could be used to explain organisational resilience, understood as "a firm's ability to cope with and recover from adversity by adjusting and preserving (or improving) its functions" (Su & Junge, 2023, p. 1086).

As mentioned above, two unanticipated negative events in the external environment (i.e., the COVID-19 pandemic and the Russian invasion of Ukraine) recently disrupted market and business functioning and affected stakeholder demands

(Boubaker et al., 2022; Metsiou et al., 2023; Su & Junge, 2023). Indeed, both the COVID-19 pandemic and the Russian invasion of Ukraine challenge businesses globally, triggering unprecedented increases in prices for raw materials and labour, and impacting global supply chains (Allam et al., 2022). The social and economic consequences of the war in Ukraine extend from Eastern Europe to the entire continent and around the world (da Costa et al., 2023). Furthermore, both crises have also affected the sustainability agenda in several ways (Mišík & Nosko, 2023).

In this regard, Mattera et al. (2021) and Mattera et al. (2022) found that long-term sustainability commitments contributed to organisational resilience during the COVID-19 pandemic, enabling companies to improve their financial performance. More recently, Mattera and Soto (2023) also showed that long-term sustainability engagement positively affected organisational resilience in the context of the Russian invasion of Ukraine, leading to higher financial performance.

From this perspective, it is reasonable to expect that the production and distribution of environmental products as a long-term sustainability strategy will contribute to organisational resilience in the face of the period of crisis and uncertainty associated with both external shocks and, consequently, lead to an improved corporate reputation as reflected in the winning of sustainability awards. In other words, the positive association between the production and distribution of environmental products and the winning of sustainability awards is strengthened by the context of disruption derived from the Covid-19 pandemic and the Russian invasion of Ukraine. Therefore, the following hypothesis is proposed:

H2: The context of disruption derived from the Covid-19 pandemic and the Russian invasion of Ukraine modulates the positive association between the production and distribution of environmental products and winning sustainability awards.

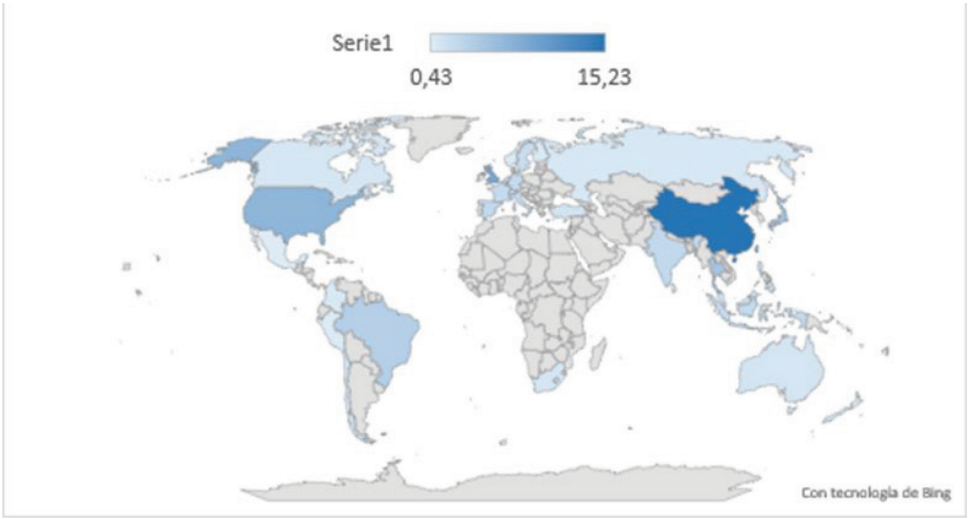
3. Methodology

3.1. Sample Collected and Indicators

The sample used for the empirical analysis is the 718 companies that have the necessary information for the estimation of Equation 1 in the Refinitiv database (LSEG Data & Analytics, 2023). It provides data on more than 15,000 firms across 76 countries.

The selected analysis period spans from 2013 to 2022. The first search resulted in 22,230 observations for 8,903 firms that present information about CSR Award. However, the unavailability of information for the other variables included in the model leads to the elimination of observations for those firms that do not have the necessary information for all variables. As a result, we obtained a sample of 718 companies located in 35 different countries, as shown in Figure 1. This corresponds to an unbalanced panel of 4,873 observations.

Figure 1. Sample distribution by geographic zones



Source: Own elaboration

It should be noted that the population frame is limited to the largest companies worldwide and, therefore, the sample has this bias (Dobrick et al., 2023).

3.2. Research model and variables

Equation 1 below shows the empirical model I designed to test the research hypotheses regarding the association between the production and distribution of environmental products and winning sustainability awards (H1), and the moderating effect of the context of disruption derived from the Covid-19 pandemic and the Russian invasion of Ukraine on such an association (H2). Regarding the first hypothesis (H1), the hypothesized positive association will be confirmed for $\beta 1 > 0$. Regarding the second hypothesis (H2), the value and significance of $\beta 3$ will indicate whether such an association is stronger during the period of disruptions related to the Covid-19 pandemic and the Russian invasion of Ukraine.

$$\text{Award}_{i,t} = \beta_0 + \beta_1 \text{EPscore}_{i,t} + \beta_2 \text{UncePeriod}_{i,t} + \beta_3 \text{EPscore} * \text{UncePeriod}_{i,t} + \sum_{n=4}^{15} \beta_i \text{Control}_{i,t} + \beta_{16} \text{country}_i + \beta_{17} \text{industry}_i + \beta_{18} \text{year}_t + \varepsilon_{i,t} + \eta_i \quad \text{[Equation 1]}$$

Following Uyar et al. (2022), the dependent variable (Award) is binary in nature, taking the value 1 for those companies that have received a sustainability award

during the period analysed and the value 0 for those that have not. This information was extracted from the Refinitiv database (LSEG Data & Analytics, 2023).

The independent variable (EPscore) has been configured as an ordinal variable, taking values between 0 and 4, to identify the degree of environmental sustainability of the products manufactured and distributed by the companies in the sample. The approach adopted in this study extends the proposals of Aibar-Guzmán and Somohano-Rodríguez (2021) and Aibar-Guzmán et al. (2022) and involves the creation of a score based on the sum of the following items: (i) there are ecological initiatives related to the product design and production process (EcoDesign); (ii) the packaging is sustainable (SostPack); (iii) the use of the product is environmentally friendly (SostUse); and (iv) there are initiatives related to recovery and recycling at the end of the product's useful life (ProdRecy).

The variable (UncePeriod), which is dichotomous in nature, identifies the disruptive effects on society and social concern for the environment associated with the uncertainty generated by the emergence of the COVID19 pandemic and the war in Ukraine. This variable therefore takes the value 1 for the period 2020-2022, and 0 otherwise. Its interaction with the variable EPscore will allow us to determine the moderating effect it has on the relationship analysed between the company's commitment to the production and distribution of sustainable products and the receipt of recognition and sustainability awards. The testing of the individual and moderating effects requires that $\beta_1>0$ and $\beta_3>0$.

In addition, 12 control variables have been proposed in the model to avoid bias in the estimation of Equation 1. These variables identify the size of the company, measured by the logarithm of assets (f_size); its level of indebtedness (f_leve); its economic profitability (f_roa); its working capital (f_wc); its dividend payout policy (f_div); its investment policy (f_capinv); its R&D policy (f_rdinv); and its advertising policy (f_advinv). We also control for the presence of strategic institutional investors in the company's ownership, based on their shareholding (strainve); the ESG information disclosed by companies according to the Refinitiv score (ESGdisclo); the good corporate governance of companies, measured by the Refinitiv G-score (governance); and the institutional impact of European regulation (EU). In addition, the model includes time, industry, and country variables.

As the dependent variable is a dummy variable, the regression model used to estimate Equation 1 is a logistic regression for panel data.

4. Results

4.1. Descriptives

Table 1 shows the main statistics, mean and standard deviation, for the variables proposed to test the research hypotheses. As can be seen, the variable EPscore has an average value of 1.12 between 0 and 4 points, which is mainly related to the

Table 1. Descriptives

Variable	Mean	Std.Dv.	Variable	Frequency
EPscore	1.12	0.99	Award	0.72
f_size	23.21	1.80	SostUse	0.67
f_leve	0.18	0.15	EcoDesign	0.15
f_roa	0.06	0.07	SostPack	0.19
f_wc	1.08	6.18	ProdRecy	0.10
f_div	1.05	5.60	UncePeriod	0.41
f_capinv	0.22	4.63	EU	0.14
f_rdinv	1.36	4.58		
f_advinv	19.87	1.68		
strainve	1.28	3.13		
ESGdisclo	88.28	22.19		
governance	57.87	21.23		
CustSatisf	84.34	11.98		

Source: Own elaboration.

sustainable use of the companies' products. On the other hand, 72% of the companies in the sample have received a CSR award during the analysis period.

The bivariate correlations are summarised in Table 2. As can be seen, there are no relationships that could lead to multicollinearity problems.

4.2. Main results

The first column of Table 3 shows the results of the estimation of Equation 1. The following column shows estimations including each of the items that make up the EPscore variable.

Focusing on the first column, the results of Equation 1 show that the variable EPscore has a positive effect (β_1 = 0.449) on the receipt of a CSR award at a 99% confidence level. This result allows us to accept hypothesis H1, which states that the production and distribution of environmental products is positively associated with the winning of sustainability awards. Our results support the findings obtained by Küçüksayraç (2015), Pritchard and Wilson (2018), Baah et al. (2021) and Lai et al. (2022), who found that the production and distribution of environmentally friendly products enhances a firm's reputation. Specifically, our results are consistent with those of Uyar et al. (2022) regarding the fact that building a firm's reputation

Table 2. Bivariate correlations

		1	2	3	4	5	6	7	8	9	10
1	Award	1									
2	UncePeriod	0.06***	1								
3	EPscore	0.17***	0.07***	1							
4	SostUse	0.18***	0.06***	0.64***	1						
5	EcoDesign	0.10***	0.05***	0.71***	0.29***	1					
6	SostPack	0.10***	0.09***	0.65***	0.06***	0.32***	1				
7	ProdRecy	0.05***	-0.03*	0.60***	0.11***	0.27***	0.36***	1			
8	f_size	0.21***	-0.06***	0.06***	0.30***	-0.05***	-0.15***	-0.02	1		
9	f_leve	0.00	-0.06***	-0.11***	-0.07***	-0.08***	-0.12***	-0.01	-0.03*	1	
10	f_roa	-0.01	-0.04**	0.06***	-0.09***	0.06***	0.15***	0.07***	-0.30***	-0.10***	1
11	f_wc	0.07***	0.04**	0.14***	0.07***	0.15***	0.08***	0.06***	0.17***	-0.09***	0.07***
12	f_div	-0.05***	-0.02	-0.02	-0.02	-0.01	-0.02*	0.00	0.01	0.08***	-0.01
13	f_capinv	-0.04**	-0.02	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.01	-0.01
14	f_rdinv	-0.05***	0.04**	0.11***	-0.02	0.10***	0.15***	0.09***	-0.13***	-0.17***	-0.04***
15	f_advinv	0.18***	-0.09***	0.25***	0.18***	0.11***	0.14***	0.26***	0.64***	-0.09***	0.01
16	strainve	0.05***	0.03**	-0.08***	-0.04***	-0.07***	-0.06***	-0.04**	0.06***	0.00	0.00
17	ESGdisclo	-0.06***	-0.02	-0.14***	-0.09***	-0.09***	-0.11***	-0.07***	-0.07***	0.03*	0.04***
18	governance	0.12***	0.06***	0.16***	0.15***	0.09***	0.09***	0.07***	0.13***	0.06***	0.02
19	EU	-0.14***	0.00	0.02	0.03**	0.02	-0.04***	0.06***	0.02	0.10***	-0.04***
20	CustSatisf	0.08***	0.15***	0.01	0.00	-0.01	0.06***	-0.02*	-0.03*	-0.11***	0.02

(continued)

Table 2. Bivariate correlations *(continued)*

		11	12	13	14	15	16	17	18	19	20
11	f_wc	1									
12	f_div	0.02	1								
13	f_capinv	-0.01	-0.01	1							
14	f_rdinv	0.08***	-0.02	0.00	1						
15	f_advinv	0.12***	-0.13***	-0.06***	-0.02	1					
16	strainve	-0.08***	-0.06***	-0.01	-0.06***	0.02	1				
17	ESGdisclo	-0.03*	0.01	0.01	-0.03**	-0.13***	0.02	1			
18	governance	0.05***	-0.10***	0.00	-0.02	0.12***	-0.08***	0.05***	1		
19	EU	-0.04***	0.02	0.04**	-0.07***	0.11***	-0.01	0.00	0.02	1	
20	CustSatisf	0.02	-0.03*	0.00	0.11***	-0.09***	-0.03**	0.00	-0.05***	-0.10***	1

(*** p<0.01, ** p<0.05, * p<0.1)
Source: Own elaboration.

Table 3. The impact of environmental products on sustainability awards

	Equation 1 coeff. (SD)	**Equation 1 breakdown coeff. (SD)**
EPscore	0.449**	
	(0.186)	
UncePeriod (UP)	0.405	0.430
	(0.258)	(0.270)
EPscore*UP	0.285*	
	(0.161)	
SostUse		0.419
		(0.397)
EcoDesign		0.374
		(0.536)
SostPack		1.276**
		(0.533)
ProdRecy		-0.391
		(0.590)
SostUse*UP		0.101
		(0.391)
EcoDesign*UP		0.115
		(0.647)
SostPack*UP		-0.0794
		(0.604)
ProdRecy*UP		1.473*
		(0.844)
f_size	1.107***	1.157***
	(0.224)	(0.230)
f_leve	-0.441	-0.373
	(1.319)	(1.338)
f_roa	3.168	3.068
	(2.286)	(2.308)

(continued)

Table 3. The impact of environmental products on sustainability awards *(continued)*

	Equation 1 coeff. (SD)	**Equation 1 breakdown coeff. (SD)**
f_wc	0.000	0.000
	(5.64e-11)	(5.63e-11)
f_div	-0.0220	-0.0216
	(0.0382)	(0.0386)
f_capinv	-0.124	-0.119
	(0.119)	(0.119)
f_rdinv	-0.0619	-0.0640
	(0.0423)	(0.0430)
f_advinv	0.00174	-0.00239
	(0.167)	(0.172)
strainve	0.217**	0.223**
	(0.110)	(0.111)
ESGdisclo	-0.00316	-0.00245
	(0.00698)	(0.00702)
governance	0.00834	0.00778
	(0.00726)	(0.00731)
EU	-3.540***	-3.525***
	(0.599)	(0.607)
country	yes	yes
industry	yes	yes
year	yes	yes
Constant	-22.10***	-23.19***
	(4.320)	(4.411)
Log likelihood	-756.84131	-754.32525
LR test of rho=0		
chibar2	658.67	654.91
Prob >= chibar2	0.000	0.000

(*** p<0.01, ** p<0.05, * p<0.1)
Source: Own elaboration

through sustainability awards requires a firm's full commitment to the environmental dimension of sustainability, and also support the claim of Lai et al. (2022) that firms produce and distribute environmentally friendly products with the aim of gaining third-party recognition.

Furthermore, this effect is slightly higher in the period of uncertainty that characterises the years 2020 to 2022. Specifically, we observe that the effect increases by 0.285 in this period, as reflected in the coefficient β_3 of the interaction EPscore* UncePeriod. This result allows us to confirm hypothesis H2 regarding the moderating effect of the context of disruption derived from the Covid-19 pandemic and the Russian invasion of Ukraine on the association between the production and distribution of environmental products and winning sustainability awards. In this case, our results complement those of Mattera et al. (2021; 2022) and Mattera and Soto (2023), who show that long-term sustainability engagement contributed to organisational resilience and enabled firms to improve their financial performance during the COVID-19 pandemic and the Russian invasion of Ukraine, respectively.

In terms of which components of the EPscore have the greatest weight for a company to obtain external recognition for sustainability, the second column shows that these are sustainable packaging initiatives (SostPack: coeff.=1.276; p-value=0.017) and the promotion of end-of-life recovery and recycling initiatives (ProdRecy*UP: coeff.=1.273; p-value=0.081). However, it should be noted that the impact of the latter type of initiatives starts to become relevant in the uncertainty period, i.e. from 2020 to 2022 (ProdRecy*UP: coeff.=1.273; p-value=0.081). Regarding sustainable packaging initiatives, several studies have shown that the sustainability of packaging is a key factor in product choice, due to growing consumer awareness about the elimination of plastics and other initiatives to take care of the planet (e.g. McKinsey & Company, 2023). Regarding the promotion of end-of-life recovery and recycling initiatives, in a circular economy model, the role that companies play in the management of end-of-life products through take-back programmes for their customers and the promotion of initiatives that allow them to market these products externally to encourage their reuse and redistribution is becoming increasingly important. On the other hand, the fact that this type of initiative became more relevant during the period of uncertainty could be explained by the fact that the Covid-19 pandemic generated a great deal of interest in the safety of workers and consumers, as well as in waste management due to the risks involved (Hantoko et al., 2021; Sarkodie & Owusu, 2021).

With regard to the control variables, larger companies and those with a greater presence of strategic investors in their shareholdings are more likely to receive a sustainability award.

5. Complementary analysis

According to Mohd Suki (2017), customer satisfaction is related to the customer's feeling that consuming a product is enjoyable because the product's performance exceeds their expectations. It influences consumer behaviour by increasing loyalty

and is positively associated with customers' perceptions of product value (Chen, 2010; Castro-González & Bande Vilela, 2016; Mohd Suki, 2017; Lee et al., 2019). In this sense, a positive image helps customers enjoy social and psychological benefits by making the consumption experience more enjoyable (López-Menchero & Delgado de Miguel, 2015; Morgan & Townsend, 2022) and, in the tourism sector, Lee et al. (2019) show that sustainability awards have a positive impact on consumers' perceived value and brand image, thereby increasing consumer satisfaction.

To complement the previous results and delve deeper into the intangible effects of product sustainability, we develop Equation 2 to determine the effect of EPscore on customer satisfaction and whether this effect is moderated by receiving a sustainability award.

$$CustSatisf_{i,t} = \beta_0 + \beta_1 EPscore_{i,t} + \beta_2 Award_{i,t} + \beta_3 EPScore * Award_{i,t} + \sum_{n=4}^{15} \beta_i Control_{i,t} + \beta_{16} country_i + \beta_{17} industry_i + \beta_{18} year_t + \varepsilon_{i,t} + \eta_i \quad \text{[Equation 2]}$$

In addition, to observe whether the previous effects are affected by the uncertainties that characterize the 2020-2022 period, we propose the following equation:

$$CustSatisf_{i,t} = \beta_0 + \beta_1 EPscore_{i,t} + \beta_2 Award_{i,t} + \beta_3 EPScore * Award_{i,t} + \beta_4 UncePeriod_{i,t} + \beta_5 EPscore * UncePeriod_{i,t} + \beta_6 Award * UncePeriod_{i,t} + \beta_7 EPScore * Award * UncePeriod_{i,t} + \sum_{n=8}^{19} \beta_i Control_{i,t} + \beta_{20} country_i + \beta_{21} industry_i + \beta_{22} year_t + \varepsilon_{i,t} + \eta_i \quad \text{[Equation 3]}$$

The first column of Table 4 reflects the results obtained, showing that the production and distribution of sustainable products has a positive and significant effect on the level of customer satisfaction (EPscore: coeff. = 0.822; p-value=0.025). This effect also extends to the fact that companies have received a sustainability award (Award: coefficient=1.328; p-value=0.029). This finding confirms that obtained by

Table 4. The impact of environmental products and sustainability awards on customer satisfaction

	Equation 2 coeff. (SD)	**Equation 2 breakdown coeff. (SD)**	**Equation 3 coeff. (SD)**
EPscore	0.822**		0.732*
	(0.367)		(0.393)
Award	1.328**	0.305*	0.959*
	(0.609)	(0.189)	(0.516)
Epscore*Award	-0.703*		-0.572
	(0.365)		(0.404)

(continued)

Table 4. The impact of environmental products and sustainability awards on customer satisfaction *(continued)*

	Equation 2 coeff. (SD)	**Equation 2 breakdown coeff. (SD)**	**Equation 3 coeff. (SD)**
SostUse		-0.405	
		(0.777)	
EcoDesign		3.664***	
		(1.037)	
SostPack		-0.0165	
		(1.002)	
ProdRecy		-0.177	
		(1.128)	
SostUse*Award		2.686***	
		(0.806)	
EcoDesign*Award		-3.972	
		(3.023)	
SostPack*Award		-0.694	
		(1.001)	
ProdRecy*Award		-0.983	
		(1.118)	
UncePeriod (UP)	1.840***	1.775***	1.503***
	(0.256)	(0.255)	(0.309)
Epscore*UP			0.245
			(0.386)
Award*UP			1.030
			(0.635)
Epscore*Award*UP			-0.450
			(0.472)
f_size	0.326	0.216	0.278
	(0.376)	(0.378)	(0.376)
f_leve	-1.139	-1.415	-1.189
	(1.962)	(1.952)	(1.961)
f_roa	2.414	1.781	2.370
	(2.552)	(2.540)	(2.555)

(continued)

Table 4. The impact of environmental products and sustainability awards on customer satisfaction *(continued)*

	Equation 2 coeff. (SD)	**Equation 2 breakdown coeff. (SD)**	**Equation 3 coeff. (SD)**
f_wc	1.24e-10**	1.14e-10**	1.17e-10**
	(5.13e-11)	(5.12e-11)	(5.14e-11)
f_div	-0.0496	-0.0486	-0.0493
	(0.0813)	(0.0818)	(0.0812)
f_capinv	0.0573***	0.0598***	0.0587***
	(0.0164)	(0.0162)	(0.0164)
f_rdinv	0.237***	0.238***	0.237***
	(0.0842)	(0.0847)	(0.0841)
f_advinv	-0.661**	-0.591*	-0.634**
	(0.304)	(0.306)	(0.304)
strainve	0.537**	0.521**	0.527**
	(0.221)	(0.222)	(0.220)
ESGdisclo	0.00530	0.00616	0.00527
	(0.00931)	(0.00922)	(0.00931)
governance	0.0105	0.0103	0.00873
	(0.00973)	(0.00965)	(0.00976)
EU	-3.845***	-4.081***	-3.810***
	(1.209)	(1.218)	(1.209)
country	yes	yes	yes
industry	yes	yes	yes
year	yes	yes	yes
Constant	88.72***	90.71***	89.51***
	(7.303)	(7.339)	(7.315)
Log likelihood	-7436.0406	-7417.9502	-7433.8738
LR test of sigma_u=0			
chibar2	2313.09	2328.83	2310.13
Prob >= chibar2	0.000	0.000	0.000

(*** p<0.01, ** p<0.05, * p<0.1)
Source: Own elaboration

Lee et al. (2019) in the tourism sector, who also find a positive impact of sustainability awards on customer satisfaction.

However, the joint effect of both variables is lower than the sum of the individual effects, as can be seen from the coefficient of the Epscore*Award interaction (coeff.= -0.703; p-value= 0.054). In this case, our results contradict the results obtained by Mohd Suki (2017) on the positive influence of corporate image on customer satisfaction regarding environmental products. On the other hand, the results of Equation 3 (column 3) show that the impact of both variables on customer satisfaction does not differ when the uncertainty associated with the crisis period (2020-2022) due to the Covid-19 pandemic and the Russian invasion of Ukraine is considered.

The breakdown of the EPscore variable into its components, column 2, shows that eco-design and sustainable use of the product are the initiatives that lead to higher customer satisfaction. However, in the case of sustainable use, its impact is associated with the company having a sustainability award.

Regarding the control variables, customer satisfaction is higher in companies with a greater presence of strategic investors in their shareholdings, higher investments in R&D and advertising, and higher working capital.

Comparing the results of the two models, it can be seen that firm size has a significant effect on winning sustainability awards (Table 3), but has no significant effect on customer satisfaction (Table 4). In the first case, the results are consistent with those of Uyar et al. (2022) and suggest that larger firms are more interested in their reputation and therefore will try to obtain external endorsements. In the second case, the results suggest that customer satisfaction is not related to the size of the firm, but to the extent to which products meet customer expectations (Modh Suki, 2016).

Conversely, other control variables (namely R&D policy and advertising policy) have an impact on customer satisfaction (Table 4) but not on winning sustainability awards (Table 3). In this case, the results could be explained by the fact that advertising that emphasizes the benefits of products may influence customers' expectations about them and, consequently, their satisfaction. However, sustainability awards are based on objective criteria that are independent of the advertised benefits of the products.

Additionally, it can be seen that different attributes of environmental products have different effects on winning sustainability awards (Table 3) and customer satisfaction (Table 4). Again, these results can be attributed to the different objective versus subjective nature of each variable. Finally, it is noteworthy that the crisis period has a significant positive effect on customer satisfaction, which to some extent reflects customers' recognition of the efforts made by companies during the crisis period.

6. Conclusions

Based on a sample of 718 companies from 35 different countries and ten years of data (2013-2022), this study analyses the impact of the production and distribution of environmentally sustainable products on the public perception of companies, as reflected in the winning of sustainability awards, and whether such an effect is

affected by the impact of the crisis and uncertainty that characterises the years 2020 to 2022 as a result of the context of disruptions stemming from the Covid-19 pandemic and the Russian invasion of Ukraine.

In line with our research hypotheses, the results show that the production and distribution of environmental products is positively and strongly associated with winning sustainability awards. This effect was slightly higher in the period of uncertainty from 2020 to 2022 as a result of the context of disruption caused by the Covid-19 pandemic and the Russian invasion of Ukraine. We also show that sustainable packaging initiatives and the promotion of end-of-life recovery and recycling initiatives are the environmental product attributes that have the greatest weight in winning sustainability awards, although the impact of the latter begins to be relevant in the uncertainty period (2020-2022). Finally, we show that both the production and distribution of sustainable products and winning sustainability awards have a positive and significant impact on customer satisfaction.

These results have both research and practical implications. First, we extend the understanding of the effects of firms' long-term commitment to sustainability by providing empirical evidence on the positive impact of the production and distribution of environmental products on firms' public recognition as reflected in sustainability awards. Second, by considering how a context of disruption affects this relationship, we contribute to the understanding of how companies can develop sustainable business models that make them more resilient to crisis. Third, by documenting the positive impact of both the production and distribution of environmental products and the winning of sustainability awards on customer satisfaction, we extend the empirical research on how customers respond to corporate sustainability initiatives and corporate sustainability reputation. Fourth, from a theoretical point of view, our theoretical framework combines several theories whose postulates complement each other to explain the intangible benefits of sustainability commitment from a dynamic perspective. Thus, we add to stakeholder theory by showing that focusing on stakeholders' environmental demands not only enables firms to improve their image and reputation, but also facilitates organisational resilience in a context of disruption. We also inform social reputation theory by providing empirical evidence that the production and distribution of environmental products contributes to the enhancement of corporate reputation, which in turn generates positive feelings among customers. In addition, we extend the use of contingency theory by considering the context of disruption caused by the Covid-19 pandemic and the Russian invasion of Ukraine as a contextual variable affecting the impact of sustainability initiatives on firms' external reputation.

In terms of the practical implications of this study, from a managerial perspective, our findings may encourage managers to produce and distribute sustainable products as a long-term sustainability initiative that positively affects companies' external recognition and customer satisfaction, as well as provide guidance on which product sustainability attributes should be developed by companies interested in enhancing their social reputation through sustainability awards. Our findings also inform other key stakeholders, in particular institutional investors and shareholders,

of the intangible benefits of producing and distributing environmentally friendly products, thereby encouraging investment in companies committed to such initiatives. With respect to the policy implications of the study, our findings could provide guidance to policy makers to encourage environmental innovation in products by firms to make them more resilient to crises. Thus, as large consumers, governments can establish purchasing criteria that favour green products and encourage their production. They could also impose green taxes on polluting production activities and, conversely, introduce subsidies and tax breaks to encourage the production of green products and their purchase by consumers. Finally, given the positive impact of institutional ownership, public policies could incentivize this type of ownership.

This research has some limitations that should be considered when interpreting the results. Firstly, the sample is made up of the largest companies in the world, which are not only the most visible and environmentally proactive, but also have huge financial, human, and technological resources to face the effects of the double external crisis motivated by the Covid-19 pandemic and the Russian invasion of Ukraine. The results may be different when analysing smaller companies. Second, the effects of the Covid-19 crisis and the Russian invasion of Ukraine were not the same for all countries and sectors. Although we have included country and sector effects as control variables, a more detailed analysis of their effects would provide more precise information. Finally, the fact that our dependent variable is binary did not allow us to examine the impact of the production and distribution of environmental products on the external recognition of companies, given that there are different types of sustainability awards granted by different associations with different prestige and motives. All these limitations open up avenues for future research on the subject. For example, future studies could focus on smaller firms or on specific industries and/or geographic areas. In addition, future research could also analyse the effect of each crisis separately. Lastly, it would be desirable in the future to quantify the nature of the association between variables using another type of model, such as structural equations (SEM).

Declaration of competing interests

The authors declare that they have no conflicts of interest in relation to the research, authorship or publication of this paper.

Funding

This research was supported by Consejería de Educación, Junta de Castilla y León [Grant/Award Number: SA069G18]; Junta de Castilla y León y Fondo Europeo de Desarrollo Regional [Grant/Award No. CLU-2019-03 Unidad de Excelencia “Gestión Económica para la Sostenibilidad” (GECOS)]; and Xunta de Galicia [Grant/Award Number: 2020 GPC GI2016].

References

Adam, N. A., & Alarifi, G. (2021). Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: the role of external support. *Journal of Innovation and Entrepreneurship*, *10*(1), article 15. https://doi.org/10.1186/s13731-021-00156-6

Aibar-Guzmán, B., Aibar-Guzmán, C., Piñeiro-Chousa, J. R., Hussain, N., & García-Sánchez, I. M. (2023). The benefits of climate tech: Do institutional investors affect these impacts? *Technological Forecasting and Social Change*, *192*, article 122536. https://doi.org/10.1016/j.techfore.2023.122536

Aibar-Guzmán, B., García-Sánchez, I. M., Aibar-Guzmán, C., & Hussain, N. (2022). Sustainable product innovation in agri-food industry: Do ownership structure and capital structure matter? *Journal of Innovation & Knowledge*, *7*(1), article 100160. https://doi.org/10.1016/j.jik.2021.100160

Aibar-Guzmán, C., & Somohano-Rodríguez, F. M. (2021). Do consumers value environmental innovation in product? *Administrative Sciences*, *11*(1), article 33. https://doi.org/10.3390/admsci11010033

Alam, S. S., & Islam, K. Z. (2021). Examining the role of environmental corporate social responsibility in building green corporate image and green competitive advantage. International *Journal of Corporate Social Responsibility*, *6*(1), article 8. https://doi.org/10.1186/s40991-021-00062-w

Allam, Z., Bibri, S. E., & Sharpe, S. A. (2022). The rising impacts of the COVID-19 pandemic and the Russia–Ukraine war: energy transition, climate justice, global inequality, and supply chain disruption. *Resources*, *11*(11), article 99. https://doi.org/10.3390/resources11110099

AL-Ghaswyneh, O. F. M. (2019). Factores que afectan el comportamiento de decisión de los consumidores de comprar productos ecológicos. *ESIC Market*, *50*(163), 419-449. https://doi.org/10.7200/esicm.163.0502.4

Álvarez-González, P., López Miguens, M. J., & González-Vázquez, E. (2015). El perfil del consumidor ecológico en España. *ESIC Market*, *46*(151), 269-297. https://doi.org/10.7200/esicm.151.0462.1e

Amankwah-Amoah, J., Khan, Z., & Wood, G. (2021). COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice. *European Management Journal*, *39*(2), 179-184. https://doi.org/10.1016/j.emj.2020.09.002

Baah, C., Opoku-Agyeman, D., Acquah, I. S. K., Agyabeng-Mensah, Y., Afum, E., Faibil, D., & Abdoulaye, F. A. M. (2021). Examining the correlations between stakeholder pressures, green production practices, firm reputation, environmental and financial performance: Evidence from manufacturing SMEs. *Sustainable Production and Consumption*, *27*, 100-114. https://doi.org/10.1016/j.spc.2020.10.015

Benjamin, S. J., & Biswas, P. K. (2022). Does winning a CSR Award increase firm value?. International *Journal of Disclosure and Governance*, *19*(3), 313-329. https://doi.org/10.1057/s41310-022-00142-8

Boubaker, S., Liu, Z., & Zhan, Y. (2022). Customer relationships, corporate social responsibility and stock price reaction: lessons from China during health crisis times. *Finance Research Letters*, 47, article 102699. https://doi.org/10.1016/j.frl.2022.102699

Castro-González, S., & Bande Vilela, B. (2016). Influencia de las emociones en la relación entre la Responsabilidad Social Corporativa y la lealtad del consumidor. *ESIC Market*, *47*(155), 397-421. https://doi.org/10.7200/esicm.155.0473.1e

Chen, Y. S. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business Ethics*, *93*, 307-319. https://doi.org/10.1007/s10551-009-0223-9

Conz, E., & Magnani, G. (2020). A dynamic perspective on the resilience of firms: A systematic literature review and a framework for future research. *European Management Journal*, *38*(3), 400-412. https://doi.org/10.1016/j.emj.2019.12.004

da Costa, J. P., Silva, A. L., Barcelò, D., Rocha-Santos, T., & Duarte, A. (2023). Threats to sustainability in face of post-pandemic scenarios and the war in Ukraine. *Science of the Total Environment*, 892, article 164509. https://doi.org/10.1016/j.scitotenv.2023.16450

Dangelico, R. M., & Pujari, D. (2010). Mainstreaming green product innovation: Why and how companies integrate environmental sustainability. *Journal of Business Ethics*, *95*, 471-486. https://doi.org/10.1007/s10551-010-0434-0

Dobrick, J., Klein, C., & Zwergel, B. (2023). Size bias in Refinitiv ESG data. *Finance Research Letters*, *55*, article 104014. https://doi.org/10.1016/j.frl.2023.104014

Erickson, J. L. (2015). *Dangerous Trade: Arms Exports, Human Rights, and International Reputation*. New York: Columbia University Press.

E-Vahdati, S., Wan-Hussin, W. N., & Mohd Ariffin, M. S. (2023). The Value Relevance of ESG Practices in Japan and Malaysia: Moderating Roles of CSR Award, and Former CEO as a Board Chair. *Sustainability*, *15*(3), article 2728. https://doi.org/10.3390/su15032728

Font, X., & Tribe, J. (2001). Promoting green tourism: The future of environmental awards. *International Journal of Tourism Research*, *3*(1), 9-21. https://doi.org/10.1002/1522-1970(200101/02)3:1<9::AID-JTR244>3.0.CO;2-Q

Fombrun, C. J. (2005). A world of reputation research, analysis and thinking—building corporate reputation through CSR initiatives: evolving standards. *Corporate Reputation Review, 8*, 7-12. https://doi.org/10.1057/palgrave.crr.1540235

Freeman, R. E., Phillips, R., & Sisodia, R. (2020). Tensions in stakeholder theory. *Business & Society*, *59*(2), 213-231. https://doi.org/10.1177/000765031877375

Ghobadian, A., Han, T., Zhang, X., O'Regan, N., Troise, C., Bresciani, S., & Narayanan, V. (2022). COVID-19 pandemic: the interplay between firm disruption and managerial attention focus. *British Journal of Management*, *33*(1), 390-409. https://doi.org/10.1111/1467-8551.12556

Haarhaus, T., & Liening, A. (2020). Building dynamic capabilities to cope with environmental uncertainty: The role of strategic foresight. Technological Forecasting and Social Change, 155, 120033. https://doi.org/10.1016/j.techfore.2020.120033

Hantoko, D., Li, X., Pariatamby, A., Yoshikawa, K., Horttanainen, M., & Yan, M. (2021). Challenges and practices on waste management and disposal during COVID-19 pandemic. *Journal of Environmental Management*, *286*, article 112140. https://doi.org/10.1016/j.jenvman.2021.112140

He, H., & Harris, L. (2020). The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research*, *116*, 176-182. https://doi.org/10.1016/j.jbusres.2020.05.030

Hitt, M. A., Holmes Jr, R. M., & Arregle, J. L. (2021). The (COVID-19) pandemic and the new world (dis) order. *Journal of World Business*, *56*(4), article 101210. https://doi.org/10.1016/j.jwb.2021.101210

Ioannou, I., Kassinis, G., & Papagiannakis, G. (2023). The impact of perceived greenwashing on customer satisfaction and the contingent role of capability reputation. *Journal of Business Ethics*, *185*(2), 333-347. https://doi.org/10.1007/s10551-022-05151-9

Küçüksayraç, E. (2015). Design for sustainability in companies: strategies, drivers and needs of Turkey's best performing businesses. *Journal of Cleaner Production*, *106*, 455-465. https://doi.org/10.1016/j.jclepro.2015.01.061

Lai, H., Wang, F., & Guo, C. (2022). Can environmental awards stimulate corporate green technology innovation? Evidence from Chinese listed companies. *Environmental Science and Pollution Research*, *29*, 14856-14870. https://doi.org/10.1007/s11356-021-16632-1

Lee, K. H., Lee, M., & Gunarathne, N. (2019). Do green awards and certifications matter? Consumers' perceptions, green behavioral intentions, and economic implications for the hotel industry: A Sri Lankan perspective. *Tourism Economics*, *25*(4), 593-612. https://doi.org/10.1177/1354816618810563

Li, J., Yi, X., Shi, W., & Zhang, D. (2018). Do CSR Awards Motivate Award Winners' Competitors to Undertake CSR Activities?. *Academy of Management Proceedings*, *2018*(1), p. 14718. https://doi.org/10.5465/AMBPP.2018.180

López-Menchero, T. B., & Delgado de Miguel, J. (2015). Influencia de la Marca de Distribuidor en la evaluación del consumidor hacia productos de alimentación. *ESIC Market*, *46*(151), 371-392. https://doi.org/10.7200/esicm.151.0462.3e

LSEG Data & Analytics (2023). *Environmental, Social and Governance Scores from LSEG - December 2023*. Available online at https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf. Retrieved on 02/02/2023

Lyon, T., Lu, Y., Shi, X., & Yin, Q. (2013). How do investors respond to Green Company Awards in China?. *Ecological Economics*, *94*, 1-8. https://doi.org/10.1016/j.ecolecon.2013.06.020

Majer, J. M., Henscher, H. A., Reuber, P., Fischer-Kreer, D., & Fischer, D. (2022). The effects of visual sustainability labels on consumer perception and behavior: A systematic review of the empirical literature. *Sustainable Production and Consumption*, *33*, 1-14. https://doi.org/10.1016/j.spc.2022.06.012

Mattera, M., & Soto, F. (2023). Dodging the bullet: overcoming the financial impact of Ukraine armed conflict with sustainable business strategies and environmental approaches. *The Journal of Risk Finance*, *24*(1), 122-142. https://doi.org/10.1108/JRF-04-2022-0092

Mattera, M., Alba Ruiz-Morales, C., Gava, L., & Soto, F. (2022). Sustainable business models to create sustainable competitive advantages: strategic approach to overcoming COVID-19 crisis and improve financial performance. *Competitiveness Review: An International Business Journal*, *32*(3), 455-474. https://doi.org/10.1108/CR-03-2021-0035

Mattera, M., Soto Gonzalez, F., Alba Ruiz-Morales, C., & Gava, L. (2021). Facing a global crisis-how sustainable business models helped firms overcome COVID. *Corporate Governance: The International Journal of Business in Society*, *21*(6), 1100-1116. https://doi.org/10.1108/CG-07-2020-0309

McKinsey & Copany (2023). *Sustainability in packaging: US survey insights*. https://www.mckinsey.com/industries/packaging-and-paper/our-insights/sustainability-in-packaging-us-survey-insights

Metsiou, A., Broni, G., Papachristou, E., & Kiki, M. (2023). Business Ethics Covid and War in the Center of Lignite Production. *Journal of Finance & Investment Analysis*, *12*(1), 11-30. https://doi.org/10.47260/jfia/1212

Mikalef, P., & Krogstie, J. (2020). Examining the interplay between big data analytics and contextual factors in driving process innovation capabilities. *European Journal of Information Systems*, *29*(3), 260-287. https://doi.org/10.1080/0960085X.2020.1740618

Mišík, M., & Nosko, A. (2023). Post-pandemic lessons for EU energy and climate policy after the Russian invasion of Ukraine: Introduction to a special issue on EU green recovery in the post-Covid-19 period. *Energy Policy*, *177*, article 113546. https://doi.org/10.1016/j.enpol.2023.113546

Mohd Suki, N. (2017). Green products usage: structural relationships on customer satisfaction and loyalty. *International Journal of Sustainable Development & World Ecology*, *24*(1), 88-95. https://doi.org/10.1080/13504509.2016.1169563

Morgan, C., & Townsend, C. (2022). Why the drive: The utilitarian and hedonic benefits of self-expression through consumption. *Current Opinion in Psychology*, *46*, article 101320. https://doi.org/10.1016/j.copsyc.2022.101320

Ottman, J. A., Stafford, E. R., & Hartman, C. L. (2006). Avoiding green marketing myopia: Ways to improve consumer appeal for environmentally preferable products. *Environment: science and policy for sustainable development, 48(5)*, 22-36. https://doi.org/10.3200/ENVT.48.5.22-36

Posen, H. E., Yi, S., & Lee, J. (2020). A contingency perspective on imitation strategies: When is "benchmarking" ineffective? *Strategic Management Journal*, *41*(2), 198-221. https://doi.org/10.1002/smj.3101

Pritchard, M., & Wilson, T. (2018). Building corporate reputation through consumer responses to green new products. *Journal of Brand Management*, *25*(1), 38-52. https://doi.org/10.1057/s41262-017-0071-3

Qiu, L., Jie, X., Wang, Y., & Zhao, M. (2020). Green product innovation, green dynamic capability, and competitive advantage: Evidence from Chinese manufacturing enterprises. *Corporate Social Responsibility and Environmental Management*, *27*(1), 146-165. https://doi.org/10.1002/csr.1780

Safari, A., & Saleh, A. S. (2020). Key determinants of SMEs' export performance: a resource-based view and contingency theory approach using potential mediators. *Journal of Business & Industrial Marketing*, *35*(4), 635-654. https://doi.org/10.1108/JBIM-11-2018-0324

Sarkodie, S. A., & Owusu, P. A. (2021). Impact of COVID-19 pandemic on waste management. *Environment, Development and Sustainability*, *23*, 7951-7960. https://doi.org/10.1007/s10668-020-00956-y

Su, W., & Junge, S. (2023). Unlocking the recipe for organizational resilience: A review and future research directions. *European Management Journal, 41*(6), 1086-1105. https://doi.org/10.1016/j.emj.2023.03.002

Tetrault Sirsly, C. A., & Lvina, E. (2019). From doing good to looking even better: The dynamics of CSR and reputation. *Business & Society*, *58*(6), 1234-1266. https://doi.org/10.1177/0007650315627996

Uyar, A., Kuzey, C., & Karaman, A. S. (2022). ESG performance and CSR awards: Does consistency matter?. *Finance Research Letters*, *50*, article 103276. https://doi.org/10.1016/j.frl.2022.103276

Wang, Y., Hong, A., Li, X., & Gao, J. (2020). Marketing innovations during a global crisis: A study of China firms' response to COVID-19. *Journal of Business Research*, *116*, 214-220. https://doi.org/10.1016/j.jbusres.2020.05.029