

Analysing the Effect of Legal System on Corporate Social Responsibility (CSR) at the Country Level, from a Multivariate Perspective

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Abstract In this paper, we analyse the effect of coercive isomorphism (legal system) on Corporate Social Responsibility (CSR) at the country level by using the multivariate statistical techniques X-STATIS and HJ-biplot, which allow us to capture the role that these institutional forces play in the evolution and patterns of behaviour regarding the commitment to sustainability. The results evidence that coercive forces have an important influence on the social and environmental commitment of companies. Analysis of the legal system shows that firms located in civil law countries have a greater interest in their CSR practices and in disclosing information than companies in common law countries; the most likely companies to act in a responsible way are those operating in institutional environments with a large and developed legal system oriented towards stakeholder protection. Consequently, our results show that companies operating in countries with similar legal systems adopt homogeneous patterns of behaviour regarding the commitment to sustainability, but their degrees of development are strongly determined by the coercive institutional characteristics.

Keywords Corporate Social Responsibility (CSR) · Coercive forces · Commitment to sustainability · X-STATIS · HJ-biplot

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1 Introduction

Corporate Social Responsibility (CSR) refers to business practices involving initiatives that benefit society. The evolution and patterns of behaviour regarding CSR vary substantially across countries (e.g. Jamali et al. 2009; Hartman et al. 2007), so it is necessary to investigate further the influence of institutional diversity between countries on CSR. The postulates of institutional theory argue that business behaviour is usually homogeneous as a result of the expectations and norms of action that the institutional environments in which companies operate impose on them and that they must necessarily satisfy in order to legitimize and ensure their long-term survival (Campbell 2007; North 1990).

The expectations and rules of behaviour that provoke the business isomorphism come from normative, coercive and mimetic pressures (DiMaggio and Powell 1983). The former are imposed, formally or informally, by supra-business groups and/or derived from the cultural values prevailing in the environment in which the company operates. The rules, standards or laws that determine the legal and/or professional framework of business practices are known as coercive isomorphism (Matten and Moon 2004). Mimetic isomorphism is associated with the imitation of the practices that the most admired and successful companies perform and which, on the one hand, legitimize the company and, on the other hand, reduce the uncertainty in the decision-making processes of companies with a follower role (Matten and Moon 2004).

In relation to this isomorphism, several studies highlight the importance of the “coercive isomorphism” resulting from pressures exerted on organisations both formally and informally by other organisations on which they are dependent, such as the legal regulatory system within which organisations function (DiMaggio and Powell 1983). Accordingly, in the CSR research sphere, one would expect that the weakness or strength of the legal system acts as an influential institutional factor in the demand for CSR development.

The academic interest in CSR evolution, its determinants and consequences has shown an exponential growth in the last decades and there is currently a huge interest in deepening the impact that the institutional environment has on sustainable enterprise engagement (Jackson and Apostolou 2010; Aguilera et al. 2007). In general, the studies—e.g., Chen and Bouvain (2009), Lattemann et al. (2009), van der Laan Smith et al. (2005), Xiao et al. (2005) and Holland and Boon Foo (2003)—are characterized by facing this challenge in research by comparing a small number of countries or a single CSR dimension—e.g., Aerts et al. (2006), Cormier et al. (2005)—for companies operating in a single sector—e.g., Adelopo et al. (2013)—, which makes it difficult to obtain generalizable results in environments other than those considered.

In order to overcome these limitations, this paper will analyse the social and environmental practices of CSR for a sample of companies operating in different countries and in different sectors. More specifically, in order to obtain more precise results, this paper focuses attention on the coercive dimension of the institutional environment, analysing the impact that the strength and efficiency of legal systems have on the adoption and development of CSR practices, comparing common versus civil law countries and examining the strength of the enforcement mechanism breakdown as a proxy for the strength of the legal system.

Due to the multidimensional characteristics of the data—that is, the study of business CSR practices in the social and environmental dimensions in the decade 2004–2014—we consider the use of exploratory statistical multidimensional techniques as the X-STATIS (Jaffrenou 1978) and HJ-biplot (Galindo 1986) essential to capture this multivariate character. Thereby, (1) the X-STATIS allows us to visualize the behaviour patterns of firms

in reference to their CSR practices by the construction and plotting in a factorial plane of the compromise matrix—that is, the consensus structure of all years; and (2) the HJ-biplot allows us to classify the companies' origin countries in relation to their CSR practices and their legal system characteristics.

The paper is organized in five sections. In the next section, we describe the effect that coercive pressures exercise on business sustainability according to our institutional theoretical framework. We continue with the description of the sample, models and statistical techniques that we use in order to contrast the hypothesis. In section four, we present the results obtained. Our last section is concluding remarks, in which we establish the main implications of our analysis.

2 Coercive Isomorphism and Legal Systems

Coercive isomorphism refers to the norms, laws or external rules that give legitimacy to different practices (Matten and Moon 2004) but can also identify with the pressures on companies' external resource providers that force or limit their adoption of certain behaviours. Since the work of La Porta et al. (1998), researchers have analysed the legal system by comparing civil and common law systems (Adelopo et al. 2013; García-Sánchez et al. 2013; Simnett et al. 2009; Ball et al. 2000). According to these investigators, firms in common law countries aim to maximise shareholder wealth; however, companies in civil law countries present a more stakeholder-oriented corporate governance structure (Ekelburg 2016). The protection of investors is more important in common law countries, since its main purpose is to raise the prices of shares and dividends (Kolk and Perego 2010; Ball et al. 2000; La Porta et al. 1997). By contrast, economic benefits are not the sole purpose of corporations in civil law countries; companies have social concerns, so other stakeholders, such as those related to social welfare (e.g. society, suppliers, employees) are at least as important as shareholders (Kolk and Perego 2010).

Several authors (Ortas et al. 2015; Kolk and Perego 2010; van der Laan Smith et al. 2005) in a similar context provide evidence that firms from civil law countries (stakeholder orientation) issue more corporate environmental reports with higher quality than companies from common law countries (shareholder orientation), because the companies from civil law countries are more sensitive to stakeholders' needs (Simnett et al. 2009; Ball et al. 2000). These countries enact laws to protect the rights of different stakeholders, like employees; by contrast, common law countries enact laws to protect the shareholders (Lorenzo et al. 2013).

The survival of the company depends to a great extent on the relations with stakeholders. Whether they are in favour of the company or want to withdraw their loan to penalize inadequate behaviour, they must be informed not only of the economic impact but also of the environmental impact and social performance of this corporation (Hess 2008). Therefore, the term corporate transparency should not be left to stagnate in the financial statements but should be expanded to other issues, such as the environmental and social aspects of corporate behaviour (Gray et al. 1987), and it should be presented in an integrated form (Frias-Aceituno et al. 2013).

Consequently, the legal and social norms of different countries are related to stakeholder orientation, the welfare of employees and minorities being an important part of CSR activities. Therefore, we use "Stake Law" as a measure of stakeholder orientation (Dhaliwal et al. 2012), which captures a country's legal environment with reference to the

protection of labour rights and benefits. The social expectations regarding CSR issues are reflected in a country's laws and regulations on CSR disclosure (Kagan et al. 2003). There are laws that require the issuance of reports on policies and environmental and social activities directed at commercial companies and/or pension funds, corresponding to high expectations regarding the corporate social performance of stakeholders. Thus, we use "CSR Law" as the other stakeholder orientation measure, which captures the existence of CSR-related disclosure laws.

All these arguments lead us to think in the same way as Campbell (2006), who argues that firms operating in institutional settings with a strong and developed legal system, that is, important coercive pressures and regulations oriented towards stakeholders' protection, are most likely to act in a responsible manner and report on their behaviour. García-Sánchez et al. (2013), in their analysis of the impact of the legal system on the relevance of the information contained in sustainability reports, show that companies located in civil law countries have a greater interest in the disclosure of information about CSR standards than companies in common law countries; this line of work also contains Ball et al. (2000). Consequently, it can be expected that those companies from civil law countries with an orientation towards stakeholders are more likely to show greater commitment to sustainability.

The specific objective of this paper is to highlight the role that institutional coercive forces have in the development of CSR, considering that companies operating in environments with similar legal and judicial systems adopt homogeneous behaviour patterns with respect to their CSR practices, influencing their evolution.

3 Research Methods

3.1 Population and Sample

The target population considered in this study corresponds to all listed companies whose economic and financial information is included in the Thomson ONE Analytics database. Subsequently, the information extracted for these companies was our final sample of 6600 observations corresponding to the 600 companies for the period 2004–2014.

The companies selected are the companies that show greater commitment to CSR (Martínez-Ferrero and García-Sánchez 2016), especially in the channelled time period, being considered the most prolific in the development of CSR at the enterprise level (Martínez-Ferrero and García-Sánchez 2016).

In Table 1 it can be seen that the available information allows the use of a balanced panel of the largest listed companies present in 18 countries with a geographical bias in favour of those firms operating in Europe (50.50%), North America (25.83%), Japan (16.67%) and Australia (7%).

3.2 Variables for Analysis

The information on CSR business practices has been extracted from the EIRIS database. Specifically, CSR will be measured by the aggregation of 26 individually weighted items scored 0–4, a score that identifies an increasing scale from an inadequate commitment to an exceptional one, identifying at the intermediate scale those weak, moderate or good commitments.

Table 1 Distribution of companies according to their headquarters countries

Countries		Frequency	
		Absolute	Relative (%)
1	Australia	462	7.0
2	Austria	44	0.7
3	Belgium	77	1.2
4	Canada	440	6.7
5	Denmark	121	1.8
6	Finland	110	1.7
7	France	429	6.5
8	Germany	407	6.2
9	Italy	143	2.2
10	Japan	1100	16.6
11	Netherlands	165	2.5
12	Norway	66	1.0
13	Portugal	44	0.7
14	Spain	165	2.5
15	Sweden	275	4.2
16	Switzerland	220	3.3
17	UK	1067	16.1
18	USA	1265	19.1
	Total	6600	100.0

The 26 items, in order to correct the divergence in business behaviour within the same line of action in terms of sustainability, which may not be observed if the items were analysed in an individualized way, are grouped into five synthetic indicators of CSR associated with the social and environmental dimensions. The social dimension incorporates actions related to human rights, employees, stakeholders and ethics. Table 2 shows the main descriptive statistics of CSR practices and dimensions.

The aggregation of CSR practices into sub-dimensions and dimensions provides greater simplicity in the analysis of results, allowing a more precise determination of the implications that may arise from it (Martínez-Ferrero and García-Sánchez 2016; Garcia-Sanchez et al. 2015).

For coercive forces, to characterise the legal system of the countries in the sample, we used three variables. “*Civil Law*” is a dummy variable, for which countries governed by civil law receive the value 1 and countries governed by common law receive the value 0 (La Porta et al. 1998). “*Stake Law*” is a measure of stakeholder orientation, which captures a country’s legal environment with reference to protecting labour rights and benefits; it is a numerical variable that presents an average value of the following three indices from Botero et al. (2003) and one index from La Porta et al. (2004): the first measure, employment laws, refers to the protection of employment and labour based on the cost and dismissal procedures, the cost of an increase in the hours worked and alternative contracts of employment; the second, social security laws, is an indication of social security benefits that includes unemployment, sickness, disability, old age and death benefits; the third, collective relations laws, captures the protection of collective relations regarding collective disputes and labour union power; and the fourth, human rights laws, measures the human

Table 2 Corporate social responsibility performance composition

			Mean	SD
<i>Social performance</i>				
Human rights			0.98	0.87
HR1	Human rights policy	What is the extent of policy addressing human rights issues?	1.37	1.11
HR2	Human rights systems	What is the extent of systems addressing human rights issues?	1.00	0.93
HR3	Human rights reporting	Does the company report on human rights issues?	0.58	0.81
Employees			1.09	0.56
Emp1	Equal opportunities (policy)	How good is the company's policy on equal opportunity and diversity issues?	1.94	0.96
Emp2	Equal opportunities (systems)	How clear is the evidence of systems and practices to support equal opportunities and diversity?	1.00	0.81
Emp3	Health and safety systems	How clear is the evidence of health & safety systems?	1.27	0.79
Emp4	Trade unions and employee participation	How clear is the evidence of systems to manage employee relations?	0.89	0.88
Emp5	Training	How clear is the evidence of systems to support employee training and development?	0.81	0.73
Emp6	Job creation and security	How clear is the evidence of systems and practices to advance job creation and security?	0.64	0.64
Stakeholders			1.55	0.76
Sth1	Community relations	How clear is the company's commitment to community or charitable work?	1.70	0.68
Sth2	Customer/supplier relations (policy)	Does the company have policies on maintaining good relations with customers and/or suppliers?	1.38	0.99
Sth3	Community involvement	How clear is the evidence of systems to maintain good relations with customers and/or suppliers?	1.47	0.93
Sth4	Responsibility for stakeholders	How many stakeholder issues have been allocated to board members?	1.25	1.21
Sth5	Stakeholder engagement	What level of engagement with stakeholders is disclosed by the company?	1.46	1.04
Sth6	Stakeholder policy	How good are the company's policies towards its stakeholders overall?	1.93	0.89
Sth7	Stakeholder systems	How good are the company's management systems for stakeholders overall?	1.84	1.05
Sth8	Stakeholder reporting	How good is the company's quantitative reporting on stakeholder relationships?	1.66	1.15
Ethics			1.76	0.88
Eth1	Codes of ethics	Does the company have a code of ethics and, if so, how comprehensive is it?	3.12	1.15
Eth2	Codes of ethics systems	Does the company have a system for implementing a code of ethics and, if so, how comprehensive is it?	2.76	1.18
Eth3	Countering bribery policy	What is the extent of the company's policy for countering bribery?	2.07	1.10
Eth4	Countering bribery systems	What is the extent of the company's system for countering bribery?	1.75	0.89

Table 2 continued

			Mean	SD
Eth5	Countering bribery reporting	What is the extent of the company's reporting on countering bribery?	0.87	0.64
<i>Environmental performance</i>				
Environment			1.74	1.11
Env1	Environmental policy	How does EIRIS rate the company's environmental policy and commitment?	2.25	1.29
Env2	Environmental management	How does EIRIS rate the company's environmental management system?	2.40	1.48
Env3	Environmental reporting	How does EIRIS rate the company's environmental reporting?	1.29	1.40
Env4	Environmental performance	What level of improvements in environmental impact can the company demonstrate?	1.04	1.18

rights protection. The average value of these four indices indicates stakeholder orientation, with a higher value presenting greater stakeholder orientation. “CSR Law” is another measure of stakeholder orientation, which captures the existence of CSR-related disclosure laws; it is a categorical variable equalling 1 when the country's mandatory disclosure requirement is only for industrial firms or only for pension funds, 2 if this requirement is for both industrial firms and pension funds and 0 otherwise.

3.3 Multivariate Analysis

3.3.1 The X-STATIS Technique

The X-STATIS technique (Jaffrenou 1978) is suitable to study three-way data—that is, the CSR practices of 600 companies during the 2004–2014 period. It is a data analysis technique belonging to the STATIS family method (Escoufier 1976; L’Hermier des Plantes 1976) that has been developed to extract the relevant information stored in three-way data tables. It is an exploratory tool that consists of three phases: the interstructure, the compromise and the infrastructure. Focusing on our objectives, we will only apply the first two.

The first phase is the study of the interstructure. As a first step, the structure of k matrices is compared: a matrix of scalar products between the k data tables is constructed so the element in row k and column l is $\text{Cov}_v(X_k, X_l) = \text{Tr}(X_k^t D_n X_l D_p)$, where X_k is the k th table of the sequence and D_n and D_p are the two metrics for the rows and columns, respectively. The second phase comprises the construction and analysis of the compromise matrix, which synthesizes and summarizes the common structure of the k matrices, filtering the noise and representing the statistically relevant information. For this construction, a vectorization of each of one of the k matrices is performed—i.e. each matrix is converted into a column vector by a linear transformation: these vectors are stacked on top of one another, constructing the matrix Z . A singular value decomposition is applied to this matrix, resulting in the matrix ZV . We pick the first eigenvector of that matrix and through unfolding this vector we construct the compromise matrix. Finally, if we apply a principal components analysis to this matrix, we can plot the averages for the variables and individuals and interpret its structure (Fig. 1).

For this study, the principal purpose of the X-STATIS analysis is to extract a multi-variate structure showing the different years 2004–2014. By the study of interstructure, we can plot the matrix of scalar products between k data tables and, in this way, compare the structure of the k matrices (years), so each data matrix is represented as a point in a low-dimensional Euclidean subspace. Connecting each point with the origin of the coordinates, we obtain an estimation of the correlation between each pair of matrices—thus, a small distance between points and acute angles are associated with high positive correlation, similarity among years, which will indicate that the variables (CSR indicators) maintain their behaviour over time with regard to the individuals (companies) studied. In the second phase, we construct the compromise matrix, which summarizes the structure of the k matrices: this matrix contains the values that synthesise the information that comprise the 11 years of the study pertaining to each company in relation to the CSR indicators. In this way, we can plot that structure and represent the statistically relevant information to visualize the behaviour patterns of firms in reference to their CSR practices.

All the calculations processed in the X-STATIS analysis and in the graphs are performed using the ADE-4 software (Thioulouse et al. 1997).

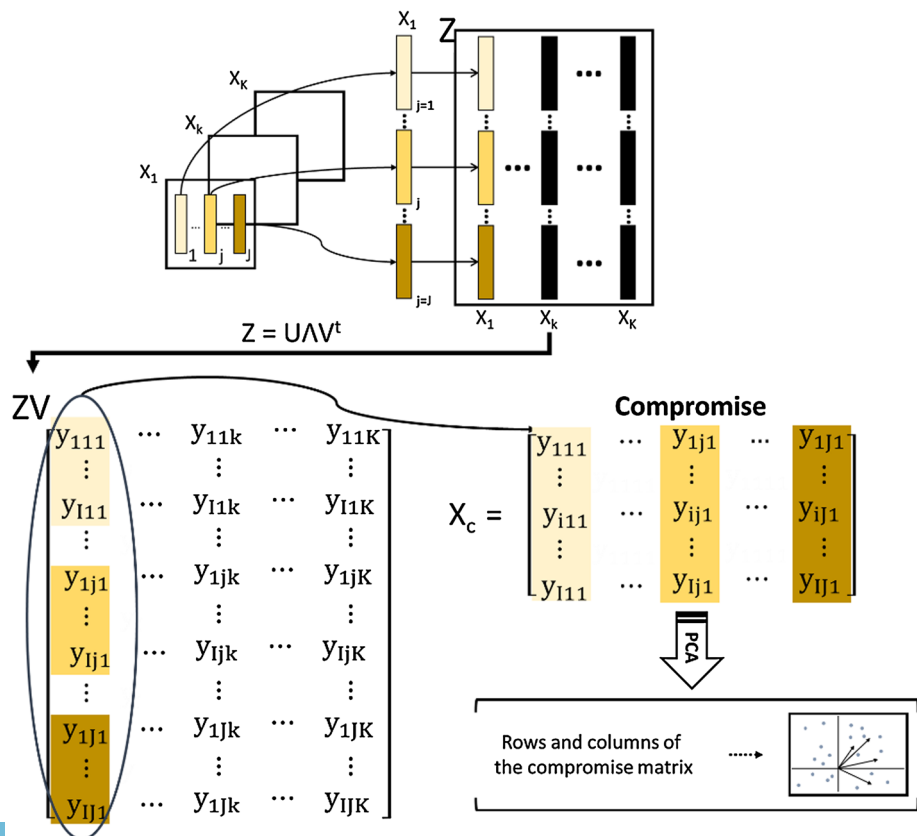


Fig. 1 X-STATIS compromise analysis scheme

3.3.2 The HJ-Biplot Technique

Biplots (Gabriel 1971) are statistical exploratory multidimensional techniques that represent the joint structure of the individuals (headquarters countries of companies) and variables (CSR practices and measures of country legal systems) of a multivariate data matrix X . The HJ-biplot (Galindo 1986) is a representation in a low dimensional space of a matrix $X_{n \times p}$. Let $X = UDV^T$ be the usual singular value decomposition (SVD) of X with U and V orthogonal matrices and $D = \text{diag}(\lambda_1, \dots, \lambda_p)$ containing the singular values. Let J and H be the matrices of the first two columns of UD and VD , respectively. This method allows, by the suitable selection of markers, $j_i = (j_{i1}, \dots, j_{in})$ for its rows and $h_j = (h_{j1}, \dots, h_{jn})$ for its columns, to represent simultaneously in the same Euclidean space the rows and columns with the highest quality of representation.

For this study, the principal purpose of the HJ-biplot analysis is to extract and describe the relationships between CSR practices and legal system variables, and classify the headquarters countries of companies according to these. For its interpretation, we have to keep several guidelines going, so row markers (countries) are represented as points and column markers (variables) as vectors. In this way, we can visualize a set of countries with similar behaviours—i.e. interpret the distance between points as similarity, so that countries closer to other countries present similar profiles. To describe the relationships between CSR practices and legal system measures, acute angles between vectors are associated with a high positive correlation. To classify the countries in reference to CSR practices and legal system measures—i.e. by the orthogonal projections of the points (countries) on the vectors (variables)—we can order the different countries in relation to each variable. Note that the countries and variables can only be interpreted correctly with good quality of representation in the subspace observed.

All the processes and representations performed in the HJ-biplot analysis are implemented by the software MultBiplot (Vicente-Villardón 2010).

4 Results of Empirical Analysis and Discussion

In this section, the influence or effect of the coercive forces on the environmental and social performance in CSR practices of 600 firms in the decade 2004–2014 is evaluated. As a first point, we compare the structures of the years by studying the inter-structure of an X-STATIS analysis that provides a graphical estimate of the vector correlation coefficient between years (data tables) (see Fig. 2). By observing the angles formed among vectors (acute angles are associated with positive correlation), we found relationships produced in a gradual manner between the years of study: thus the years present similar structures and we infer a growth in CSR practices in the indicated period. This representation connects with the factorial plane 1–2, accounting for more than 91% of variability.

The next step comprises the construction and analysis of the compromise matrix, which synthesizes and summarizes the common structure of all the matrices. This matrix contains the company's values in relation to the mentioned variables, synthesized for the 11 years of study. In this way, we plot the structure of this matrix to investigate and compare the behaviour of each company in reference to the rest, capturing the multivariate information of that period, filtering the noise and representing the statistically relevant information. This representation with the first two axes collects approximately 85% of the variability. All the matrices receive a good quality of representation (Table 3, “Cos²” column) and

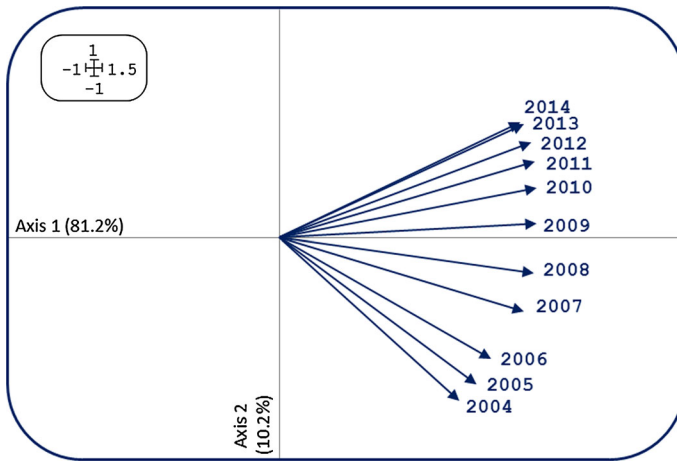


Fig. 2 Graphical estimate of the vector correlation coefficient between years, X-STATIS interstructure analysis

Table 3 Weights of the matrices (years) and their quality of representation on compromise analysis

Axis	Weights	Cos ²	Axis	Weights	Cos ²
2004	2.30E+02	0.523	2010	3.28E+02	0.757
2005	2.48E+02	0.590	2011	3.26E+02	0.750
2006	2.56E+02	0.620	2012	3.21E+02	0.736
2007	3.16E+02	0.695	2013	3.12E+02	0.699
2008	3.25E+02	0.734	2014	3.06E+02	0.676
2009	3.28E+02	0.757			

obtain similar weights for the construction (Table 3, “Weights” column), somewhat smaller for the first three.

Subsequently, with factorial plane 1–2 of compromise subspace, we present the position of our 600 firms in the decade 2004–2014 in relation to the five variables that measure the CSR practices (see Fig. 3). The firms are scattered throughout the plane, presenting high variability; in addition, the graph shows two dimensions, one related to ethics and human rights in the first quadrant, the other related to stakeholders, employees and environment, located in the fourth quadrant.

To evaluate the effects of coercive forces on the commitment to sustainability, we used the variables “Civil Law”, which identifies whether a country is governed by the civil or common law, “Stake Law”, where a higher value indicates a greater stakeholder’s orientation and “CSR Law”, which captures the existence of disclosure laws. According to the literature, these variables promote commitment to sustainability, i.e. it is expected that those countries who obtain high values in these variables show greater commitment. To test this, we created the “Legal” variable, which is the sum of these three variables, thus each country of study receives a value in reference to its legal system and therefore its companies. By using percentiles (25th, 50th and 75th) in this variable, we divided the sample into four typologies according to levels of development of their legal system, the fourth being the most developed. Thereby, we visualized the behavioural patterns of companies with respect to CSR practices according to the degree of development of the

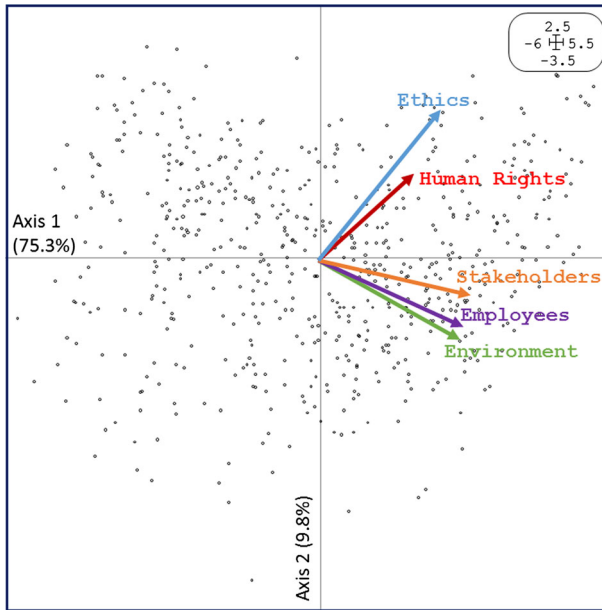


Fig. 3 Factorial plane 1–2 of compromise subspace, representing the position of 600 firms in relation to the five indicators that measure the CSR practices

legal system of their headquarters countries. For that, firms were projected in the subspace generated by a compromise analysis of X-STATIS, partitioning them in the four typologies for a better understanding (see Fig. 4).

The five indicators that measure CSR practices position their vectors to the right, so that firms situated more to the right present a greater CSR commitment. In this way, the horizontal latent axis can be seen as a combination of these indicators. Regarding the vertical latent axis, firms situated in the lower part of the graph give higher preference to stakeholders (“Sth”), employees (“Emp”) and the environment (“Env”); on the other hand, those situated in the top part show greater interest in human rights (“HR”) and ethical issues (“Eth”). Regarding the companies, we observed high variability, with companies being scattered throughout the graph. We can therefore say that companies worldwide adopt similar CSR commitment, regardless of the legal system that characterizes their country of origin. However, taking into account our legal system classification, we found companies with varying degrees of CSR commitment. More concretely, we

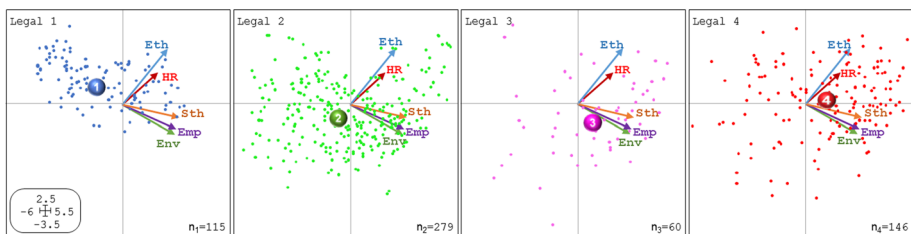


Fig. 4 Factorial plane 1–2 of compromise subspace, divided into four typologies according to levels of development of their legal system

found differences in the degree of CSR evolution of businesses by typology: specifically, when most of the companies are located in the left or right side of the graph, it can be noted that the fourth and third typologies (which are those with the most developed legal system) have most of their businesses on the right side, indicating greater commitment. We also noted that companies in the first typology were mostly located in the second quadrant, which means that their priorities are ethical and human rights issues, yet their commitment to sustainability appears to be well behind the rest of the typologies. In conclusion, we observe that there is a trend in the centres of the clouds, showing higher average degrees of CSR for companies belonging to countries with advanced legal systems.

With the aim of delving into the differences among typologies regarding the degree of CSR evolution, we applied a parallel coordinates (Inselberg 1992), graph to each of the CSR indicators, being a technique that allows us to visualize k-dimensions in a two-dimensional system. So, a point in a k-dimensional space (typologies values on CSR indicators) is transformed into a polygonal line through k parallel axes (our years of study) (see Fig. 5).

Companies operating in countries with further development of the legal system show a greater commitment to sustainability in each one of the CSR indices of the study, as the higher development typologies (fourth and third) have the highest CSR values. With one notable difference to the remaining ones, both typologies have similar values in all CSR indexes, with the fourth typology being positioned first, except for “Environment”, which

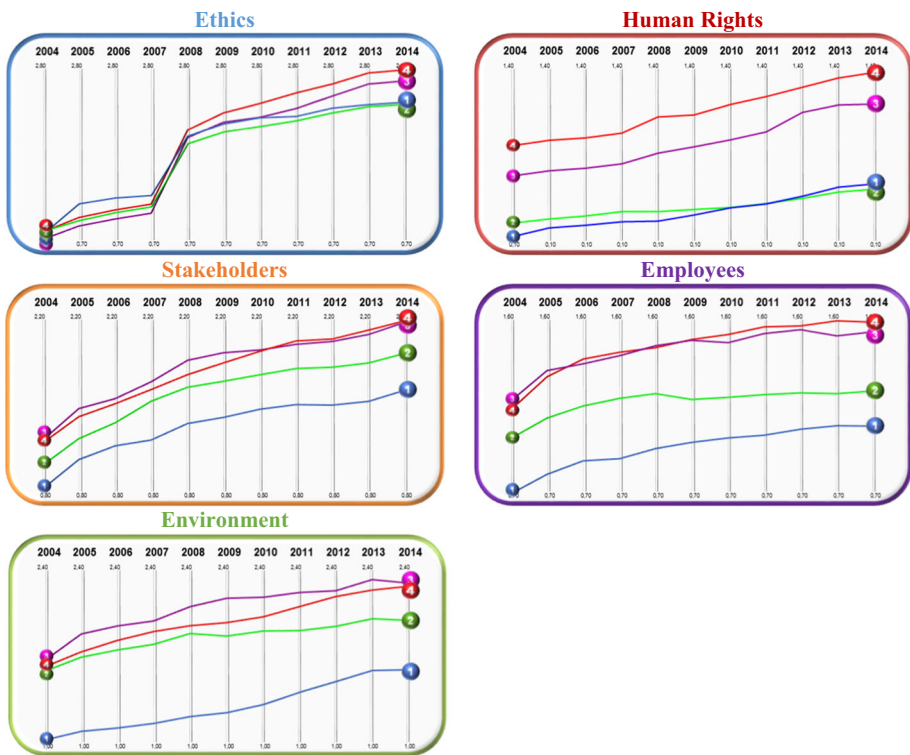


Fig. 5 Coordinates of parallel graphs: evolution of typologies (levels of development of the legal system) in each CSR indicator during the years 2004–2014

was overtaken by the third. With respect to the typologies of less development, the second typology obtained higher values in “Stakeholders”, “Employees” and “Environment” and, similar to the first typology, in “Ethics” and “Human Rights” values, albeit somewhat lower in the recent years of this study, most likely because most companies of the first typology prioritise in ethical and human rights issues (Fig. 4). In short, all companies bet on the same CSR practices (common patterns) but, according to the legal system in the country of origin, show a greater or lesser commitment to them (development degrees). These differences in the development of CSR practices observed between different legal systems are constant over time—i.e. the evolution of CSR patterns differs between legal systems but is common within them in the analysed period.

Subsequently, the application of an HJ-biplot, working with data at country level, allowed us to investigate within the typologies. This method allows us to plot the structure of headquarters countries of companies in relation to our set of variables in a low dimensional space, with the aim of characterizing countries in accordance with their legal system development and commitment to CSR practices simultaneously. For the application of the HJ-biplot in the right way, several quality measures are essential—specifically, eigenvalue and explained variance, and the relative contribution of the factor to the element (see Table 4) which explains the importance of each variable for the position of axes.

The factorial plane 1–2 of this representation collects 69% of the total information. All of this information is represented in Fig. 6.

The countries are represented by circular flags and their position on the graph is according to the CSR indicators and variables that evaluate the legal system. The value responsible for the position of each one is the average value of firms of each country in the 2004–2014 period in each one of the variables. By observing the angles formed by the variables, those with small acute angles indicate high positive correlation, highlight “*Stake Law*” and “*Civil Law*”, as they are positively interrelated as well as related with all CSR variables. The strongest relationship was found between “*Civil Law*” and “*Environment*”; “*Stake Law*” was strongly related with the four variables that measure the commitment of companies to social practices (“*Ethics*”, “*Human Rights*”, “*Employees*”, “*Stakeholders*”) and slightly related with “*Environment*”.

In order to analyse the typologies or the countries that form them, it is interesting to know that all of the countries obtained a good quality representation, which was somehow smaller for Denmark and Belgium. Table 4 shows that all variables, except “*CSR Law*”, highly contribute to axis 1 and only slightly to axis 2, somewhat less for the variable “*Ethics*”; therefore, the horizontal latent axis is largely explained by these variables, so that those countries governed by civil law (“*Civil Law*”) and greater stakeholder

Table 4 Relative contribution of the factor to the element

Variables	Axis 1	Axis 2
CSR Law	2	711
Ethics	185	131
Human rights	650	69
Stake Law	800	40
Employees	766	3
Stakeholders	589	6
Environment	698	89
Civil Law	658	98

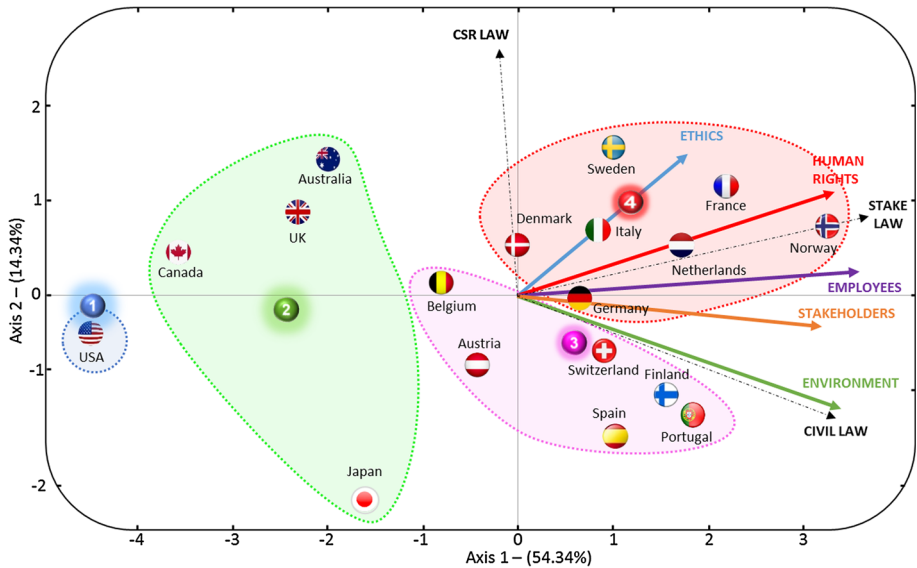


Fig. 6 Factorial plane 1–2 of HJ-biplot showing the position of the 18 headquarters countries of companies in relation to the CSR indicators (continuous vectors) and legal system (discontinuous vectors)

orientation (“*Stake Law*”) are positioned on the right side of the graph. Since these variables are positively related to CSR indicators, these countries show a greater commitment to sustainability, emphasising the social practices in the upper area and giving higher priority to environmental issues in the lower area.

As mentioned in the previous analysis, the fourth and third typologies have very high values in terms of their CSR practices compared with those of the second and first typologies. This is mainly because these typologies are both formed by European countries governed by civil law and greater stakeholder orientation, unlike the other typologies, which are formed by countries governed by common law and greater shareholder orientation, except for Japan. Our results are in agreement with those found by Campbell (2006), who argue that firms operating in institutional settings with a strong and developed legal system, that is, important coercive pressures and regulations with an orientation towards stakeholders’ protection, are most likely to act in a responsible manner and report on their behaviour. Similarly, García-Sánchez et al. (2013), in their analysis of the impact of the legal system on the relevance of the information contained in sustainability reports, show that companies operating in civil law countries have a greater interest in disclosing information about CSR standards than companies in common law countries. Several authors (Ortas et al. 2015; Kolk and Perego 2010; van der Laan Smith et al. 2005) in a similar context provide evidence that companies from civil law countries (stakeholder orientation) issue more corporate environmental reports with higher quality than companies from common law countries (shareholder orientation), because the companies from civil law countries are more sensitive to stakeholders’ needs (Simnett et al. 2009; Ball et al. 2000). This is in line with the work of Ball et al. (2000), who describes common law countries as countries with shareholder orientation, which are characterised by a further development of laws protecting shareholders (Lorenzo et al. 2013), more dispersed ownership structures and poor government intervention in markets (Adelopo et al. 2013).

On the contrary, civil law countries, considered as countries with stakeholder orientation (Ball et al. 2000), have a higher concentration of ownership in banks, and financial institutions play a much more important role than in common law countries. Another difference is the high level of protection of the rights of employees in civil law countries (Adelopo et al. 2013; Ferner and Quintanilla 1998). Thus, employers in continental European countries tend to consider employees as part of their strategic strength and resources of the company and are more willing to invest in their training and development (Ferner and Quintanilla 1998).

It is noteworthy that in our study countries with a higher stakeholder orientation, relevant to the fourth typology, show greater commitment to sustainability, emphasising their practices regarding social issues (“Ethics”, “Human Rights”, “Employees” and “Stakeholders”). The countries that make up the third typology, with somewhat smaller values in their stakeholder orientation than the fourth typology, give higher priority to environmental issues (“Environment”). Accordingly, the results obtained show that firms adopt homogeneous degrees of CSR commitment to sustainability when operating in countries with similar legal systems, although the patterns are similar worldwide.

5 Conclusions

This paper focuses on the analysis of the role that the coercive institutional forces that characterize the country of origin of companies play in the development of CSR practices. Specifically, it has been observed that strong coercive institutional contexts assume that the evolution of the commitments that companies have acquired in social and environmental issues evolve isomorphically. However, these characteristics of the institutional environment do not influence the adopted practices, being internationally common among the large listed companies.

Our main conclusion is that coercive forces have an important influence on the social and environmental commitment of companies. An analysis of the legal system shows that firms located in civil law countries have a greater interest in their CSR practices and in disclosing information than companies in common law countries; the most likely ones to act in a responsible way are the companies operating in institutional environments with a large and developed legal system oriented towards stakeholder protection. Consequently, the results show that firms adopt homogeneous degrees of CSR commitment to sustainability when operating in countries with similar legal systems.

Our evidence contributes to previous literature by adopting a multi-country international approach, expanding existing evidence on the comparisons of two countries (Weber 2014; Hodge et al. 2009; Xiao et al. 2005). In addition, our analysis has a multi-period approach, overcoming the disadvantages of cross-sectional analyses that do not allow controlling unobservable heterogeneity (Hodge et al. 2009; Perego 2009). Furthermore, the analysis of the 2004–2014 period contributes to update the results obtained in previous studies (Tower and Rusmin 2012; Kolk and Perego 2010; Simnett et al. 2009). Finally, a more subtle contribution is methodological. The use of exploratory statistical techniques such as the X-STATIS allows us to visualize the behaviour patterns of firms in reference to their CSR practices by the construction and plotting in a factorial plane of the compromise matrix, which represents the consensus structure of all years, while the HJ-biplot allows us to classify the companies’ origin countries in relation to their CSR practices and their legal system characteristics. In this sense, our results offer evidence that companies worldwide

adopt similar patterns of CSR practices but that their degrees of development are strongly determined by the coercive institutional characteristics.

Our results show possible decisions that can be taken at the country level by political leaders and responsible public administrations in order to promote sustainability in the business world. At the corporate level, our evidence allows companies to know the coercive pressures that social and environmental issues can support in those geographic environments which they expect to enter according to their strategy of geographic diversification. Even for companies without internationalization strategies, the results obtained allow managers to specify the actions they undertake in order to legitimize themselves before their stakeholders and the society in which they operate. In addition, knowing the CSR practices of large companies and their temporal evolution facilitates decision-making processes in the securities market by providing information to investors that allows them to formulate their expectations on the level of corporate commitment to CSR.

This paper presents limitations that should be taken into account in future research. The need to consider possible divergences within the institutional environments that have been determined in this study should be noted especially. In this sense, although coercive institutional pressures may be similar, the possible differences caused by the typologies of corporate governance prevailing in each environment and relevant in terms of business sustainability have not been controlled. In this sense, future work should be oriented towards analysis of the interaction between the different characteristics of the macro-environment.

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