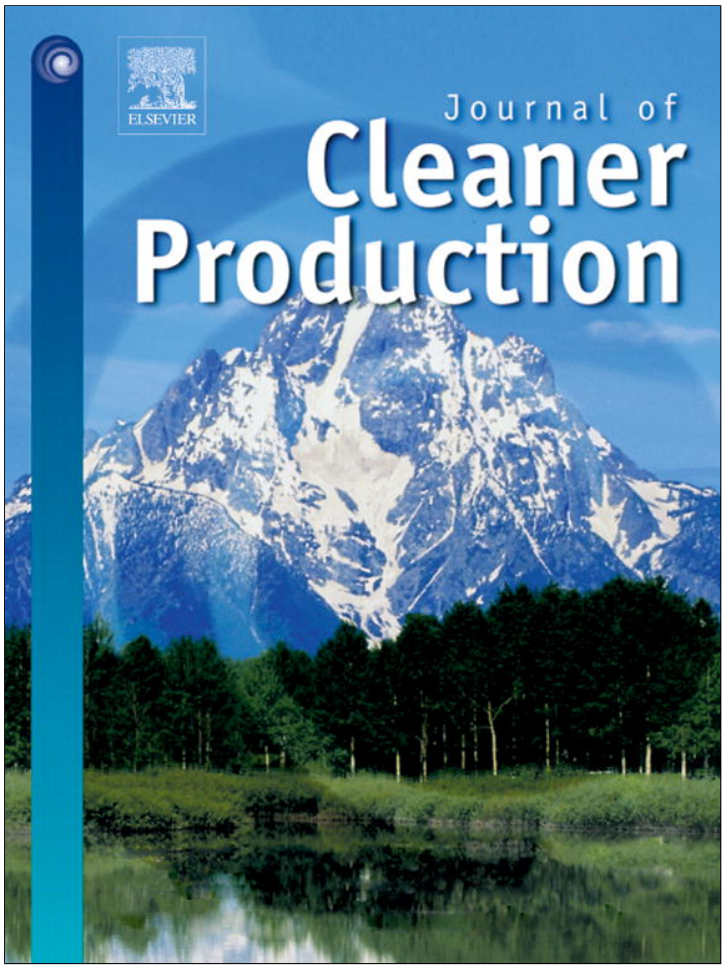


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# Determinants of corporate social disclosure in Spanish local governments

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ABSTRACT

This paper contributes to previous country-level analyses of non-financial reporting in the public sector by studying public transparency in relation to sustainability, as well as by assessing the determinants of sustainability disclosure practices in Spanish municipalities. We have carried out a content analysis of the websites of 102 Spanish local governments. Subsequently, we have employed different statistical techniques (biplots and dependence models) to analyse the extent of disclosure and to determine the impact of certain contextual and political factors on transparency in matters of sustainability. When compared to the amount of information that is revealed concerning financial issues, disclosure practices regarding social and environmental information are rather scarce. We have also observed that several political factors, more specifically, the presence of conservative governments and political rivalry, may become genuine barriers to municipal transparency. Based on these findings, we can make two policy recommendations. First, it seems necessary to establish national policies, laws or recommendations that generate similar levels of transparency among local governments in order to avoid social dilemmas. In this sense, similar accountability processes limit non-sustainable behaviours, playing a similar role to that of markets for the private sector. Second, accountability processes should focus on the addition of information concerning social and environmental actions and on informing of the effects of municipalities on them, going beyond the strictly economic dimension.



## 1. Introduction

Growing concern about the effect of organizations on society and the environment has led the public to demand from companies not only economic value added, but also socially and environmentally responsible behaviour. There are also demands of higher levels of transparency in relation to these business impacts, through the disclosure of information from the triple bottom line (Prado-Lorenzo and Garcia-Sanchez, 2010). Nowadays, these requirements have also reached the entities that make up the public sector, becoming part of their essential duties (Hinna, 2004; Farneti and Pozzoli, 2005; Farneti and Siboni, 2011).

Citizen pressure means that the activities carried out by public organizations must also be socially responsible, as well as accountable as regards the sustainability of their operational performance (Global Reporting Initiative, GRI, 2004). More specifically, the public sector is required to display a greater extent of sustainability, accountability and transparency in the use of public resources. It should show a greater response to stakeholders' petitions and expectations, stronger public commitment and a higher degree of consultation in decision-making processes. Given the fact that the public sector operates with citizens' funds, it is understandable that citizens require an increasing amount of information and transparency to monitor the activities undertaken by public administrations (Guillamón et al., 2011). For this reason, several public entities have decided to add sustainability information to their standard budgetary and financial reports (Ball, 2004; Marcuccio and Steccolini, 2005; Crane et al., 2008). Nevertheless, previous literature about social responsibility mainly focuses on the practices of private corporations (Gray, 2002; Garriga and Melé, 2004; Leeson and Ivers, 2005), whereas its meaning and its implementation in the public sector is a relatively new and much less researched topic (Ball, 2004; Marcuccio and Steccolini, 2005).

Along this line, the purpose of this study is twofold. First, it provides an analysis of public transparency in relation to sustainability in Spanish local governments, and, secondly, it determines the main underlying factors of these disclosure practices. The study of municipalities located in a specific geographic area allows for the implementation of more homogeneous analyses and, therefore, for the obtaining of more practical results as regards the analysed

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context (Garcia-Sanchez et al., 2011a and forthcoming). At the same time, it allows us to obtain empirical evidence from a specific country, which may be added to that of the countries analysed in previous literature (Williams et al., 2009; Mussari and Monfardini, 2010; Navarro et al., 2011).

In order to achieve these goals, we began with a content analysis to address the information contained in different reports and documents available on the websites of the 102 largest Spanish municipalities, for which Act 57/2003 establishes the promotion of urban sustainability. Subsequently, we employed different statistical techniques – biplots and dependence models – to describe and determine the effect of certain factors on transparency in matters of sustainability. These factors have to do with the municipal context, the internal features of public entities and political variables.

The results obtained underscore that, on average, Spanish municipalities disclose similar percentages of information related to strategy, the profiles of municipal governments, relationships with stakeholders, and economic, social and environmental issues. However, environmental and social information (particularly the former) seem to be less important and not so closely related to the other types of information analysed. The total population size influences local transparency positively as regards social responsibility. In contrast, political factors usually have a negative influence, whereas contextual characteristics turn out to be irrelevant.

This paper is structured in eight sections, including this Introduction. The second section describes the theoretical arguments about sustainability disclosure practices, while Section 3 indicates the determinants of public transparency. Section 4 contains the methodological aspects involved. Sections 5 and 6 present the empirical results, which are discussed in Section 7. And finally, the main conclusions are established in Section 8.

## 2. Disclosure of information about sustainability

There is a growing interest and commitment regarding sustainability reporting on behalf of public administrations (Leeson and Ivers, 2005). Sustainability plays a key role in modern organizations and, consequently, in the provision of public services, for which accountability is essential (Guthrie et al., 2010). However, even though citizens' requirements as regards transparency and accountability are increasing, reporting on sustainability and social responsibility is a topic that has not yet been widely studied (Ball and Grubnic, 2007; Ball and Bebbington, 2008; Navarro et al., 2010). The practices of sustainability disclosure in the public sector are in their infancy when compared to the private sector (Dumay et al., 2010; Leeson and Ivers, 2005). However, Ball and Bebbington (2008) maintain that the public sector should be able to provide better information, both because its relationship with stakeholders is not just established through the market, and because the sustainability activities performed by public entities form part of their main functions.

Lamprinidi and Kubo (2008) argue that the reasons behind public agencies' interest in disclosing how they are addressing sustainability issues do not differ from those of private companies: the need to show the effort they are making in relation to climate change and other sustainability issues; growing interest in and demands for transparency and accountability; explanation of management to stakeholders; to show their leadership in the sector; existence of sustainability rankings that seek to promote the release of sustainability reports and share the benefits, etc.

In this regard, several theories have been suggested to explain the disclosure of information about sustainability, both in the public and private contexts: Decision Usefulness, Positive Accounting Theory, Legitimacy Theory, Stakeholder Theory and the Institutional Approach (Frost and Semaer, 2002; Marcuccio and Steccolini, 2005; Bellringer et al., 2011). However, the most widely used approaches to justify the disclosure of information about sustainability focus on Legitimacy Theory and Stakeholder Theory (Deegan, 2002; Navarro et al., 2010; Mussari and Monfardini, 2010; Farneti and Siboni, 2011).

Legitimacy Theory is based on the idea that, in order to continue operating successfully, corporations must act within the boundaries of what society identifies as socially acceptable behaviour and act in response to external expectations (Dowling and Pfeffer, 1975; Richardson, 1997). Legitimacy is achieved when organizations are consistent with social values (Dowling and Pfeffer, 1975). Therefore, organizations may be required to modify their actions so that they are acceptable to society, or to increase their ability to communicate that their actions are congruent with social values. In this sense, the agencies of the public sector are more politically visible, thereby attracting a high degree of attention from external stakeholders; hence, they will require a higher degree of response to achieve organizational legitimacy (Frost and Semaer, 2002).

There are strong links between Legitimacy Theory and Stakeholder Theory. Legitimacy Theory is about compliance with the expectations of society as implied within the social contract (Richardson, 1997). Society is made up of various groups with different degrees of power or ability to influence the activities of an organization. Stakeholder Theory acknowledges that different groups have different abilities to affect an organization (Guthrie and Parker, 1989; Davidson, 1991). More specifically, Stakeholder Theory is based on the idea that each organization has a higher number of counterparts, apart from their owner (Freeman, 1984). Therefore, this theory may help public managers to identify which stakeholder groups might be relevant to particular management decisions and which stakeholder expectations should be taken into account by the organization to comply with its social contract. Consequently, it is necessary to supply information to all these stakeholders, and to expand organizations' functions and responsibility beyond their focus on shareholders (Roberts, 1992).

The connection between Legitimacy Theory and Stakeholder Theory, and the benefits that could accrue from viewing specific events through more than one lens should also be acknowledged. According to Stakeholder Theory, organizations are seen as dependent on their environment for obtaining resources, and they have to use strategies to manage their stakeholders in order to have continued access to the resources vital to their survival. Legitimacy Theory suggests that when managers consider a resource to be critical to firm survival, they will use strategies to ensure the continued supply of that resource. Therefore, both Stakeholder Theory and Legitimacy Theory portray an organization as dependent on society for resources critical to entities' survival.

## 3. Factors behind sustainability disclosure

There are certain factors that may either encourage, or limit sustainability reporting. Among them we can differentiate three main groups: municipal context, internal features of public entities and political factors.

### 3.1. Municipal context

The economic and social context within which local administration operates may influence the amount of information disclosed concerning sustainability and social responsibility. In this regard, we can stress both the economic status of the population of each municipality and its degree of sustainability and quality of life.

#### 3.1.1. Level of economic development

According to Hameed (2005) and Piotrowski and Van Ryzin (2007), the economic status of the population is positively related

to transparency in public administrations, especially with regard to financial and fiscal matters. Several variables can be identified in relation to this positive relationship, such as educational level, the services provided and the employment rate.

For instance, taking into consideration the correlation between economic and educational levels, well trained and educated populations are likely to demand greater amounts of information from their public administrations (Tolbert et al., 2008).

Moreover, the level of economic development can lead the public sector to expand the number of services. In this sense, a wide range of services would lead to an increase in the number and variety of stakeholders, which might encourage governments' interest in releasing information about sustainability.

In general, since citizen income levels are not available at the local level, the unemployment rate is normally used as a proxy for the economic status. Alonso-Villar et al. (2009) have observed that Spanish municipalities display a strong bidirectional relationship between unemployment rates and a municipality's economic level. In this regard, municipalities with high unemployment rates show homogeneity in relation to gross domestic product, public assistance benefits, health, prices for public services, etc.

Empirically, Guillamon et al. (2011) observed that municipalities with lower levels of information transparency show higher unemployment rates, which involves an inverse relationship between unemployment and the disclosure of information by public administrations; in other words, a positive association between citizens' economic status and the disclosure level. In contrast, Navarro et al. (2011) show that municipalities with higher unemployment rates display more social needs and, consequently, there is greater pressure on governments to reveal social information.

We have therefore based our study on the divergent previous evidence concerning the relationship between citizens' economic status (measured by unemployment rates) and sustainability reporting. Additionally, we have taken into account the fact that municipalities with higher levels of unemployment may be at a disadvantage regarding the implementation of sustainable practices and their disclosure, due to the insufficiency of financial and human resources (Prado-Lorenzo et al., 2012). Accordingly, we posit the following hypothesis:

**H1**. There is a negative relationship between the level of citizens' economic development (proxied by unemployment rates) and the degree of sustainability reporting.

#### 3.1.2. Level of sustainability

Several authors (e.g. Bithas and Christofakis, 2006; Helbing et al., 2010) also emphasize the need to consider municipalities' sustainability status. As far as the private sector is concerned, there appears to be a direct relationship between an organization's sustainable behaviour and its level of transparency (i.e. Clarkson et al., 2008; Prado-Lorenzo and Garcia-Sanchez, 2010). In this regard, organizations with the best sustainability practices will provide relevant information about themselves in order to achieve a competitive edge, whereas those which have the worst indicators will avoid disseminating accurate information in order to circumvent comparisons of results which would adversely affect their reputation.

Similarly, local managers in the public sector may be interested in emphasizing the degree of sustainability in their towns. According to the definition of The Regional Environment Centre for Central and Eastern Europe (2010), sustainable cities and regions are those that "[have] put in place action plans and policies that aim to ensure adequate resource availability and (re-)utilisation, social comfort and equity and economic development and prosperity for future generations". Along these lines, one of the most common approaches to determine a municipality's level of sustainability is its quality of life (Glaser, 1991; Williams et al., 2008). For instance, citizens' levels of satisfaction depend on certain factors related to sustainability issues, such as environmental quality, absence of noise, services provided and available facilities (Howley et al., 2009). This proves that quality of life and sustainability are interconnected (Prado-Lorenzo et al., 2012) and provide a full picture of the definition of well-being (Thomas and Evans, 2010).

As a result, local politicians are more prone to convincingly demonstrate that their city's residents enjoy higher levels of well-being and satisfaction (in other words, a higher quality of life) than those of other localities, reporting their efforts to improve quality of life through practices of social responsibility and sustainable development (Prado-Lorenzo et al., 2012).

Consequently, we posit the following hypothesis:

**H2**. A municipality's level of quality of life positively influences the disclosure of information about sustainability.

### 3.2. Internal features of public entities

According to previous studies, certain features of public entities, such as their size or budgetary capacity, affect the undertaking of sustainability practices and their communication. This should therefore be taken into account when analysing disclosure.

#### 3.2.1. Size of the public entity

Large populations tend to demand more services and thus public administration is forced to deal with a wider variety of stakeholders, who require, among other aspects, both the undertaking of social responsibility practices and more information about sustainability. In addition, large-sized municipalities have more qualified staff, which may foster social responsibility practices and their disclosure (Navarro et al., 2010).

Frost and Semaer (2002) argue that the aforementioned municipalities have higher degrees of political visibility, thereby attracting the attention of politicians, environmental groups and the general public. This context requires these local governments to show a higher degree of response in order to achieve institutional legitimacy and mitigate the political costs that may arise. Along this line, Navarro et al. (2011) show that the increase in population size may influence the improvement of disclosure practices regarding environmental information at a regional level. In contrast, in studies based on Spanish local governments, neither Prado-Lorenzo et al. (2012) nor Navarro et al. (2010) find a significant influence of population size on the implementation of sustainable practices and their disclosure.

Therefore, we proceed to test the following hypothesis:

**H3**. There is a positive relationship between the size of municipalities and disclosure of information about sustainability.

#### 3.2.2. Budgetary capacity

Any innovation or reform in the public sector is closely linked to the level of available government resources, particularly as regards economic and financial support.

Concerning disclosure, Alt et al. (2006) find that the results of fiscal policy may influence politicians' incentives to increase the level of transparency. Town councils with more funds in their budgets are in a better position to improve their information systems and may use more resources to extend their supply of public services. This could lead to a higher number and variety of stakeholders, thereby encouraging their governmental teams to disclose information about sustainability (Navarro et al., 2010).

In Spanish municipalities, Guillamón et al. (2011) detect that the most financially transparent local governments obtain larger amounts of financial funds from higher government levels and show higher levels of budgetary spending. However, Navarro et al. (2010) find no

evidence that the development of disclosure practices is favoured by the volume of budgetary spending.

Based on the aforementioned arguments, we propose the following hypothesis:

**H4**. A municipality's budgetary capacity positively influences the disclosure of information about sustainability.

### 3.3. Political factors

Public Choice Theory provides an appropriate frame for the complex political context in which voters, stakeholders and politicians are involved in governmental decision-making to adopt specific policies and sustainable activities. According to this theory, politicians are the main agents in the decision-making process about the future development of the town. They seek to maximize the number of votes they expect to win in the next elections, looking to satisfy demands from voters and other stakeholders in order to ensure their re-election.

For this reason, factors linked to the different political ideologies and political rivalry and stability may affect the implementation of innovations and the sustainable development of a city. More specifically, the current study focuses on ideology, stability and political strength and rivalry.

#### 3.3.1. Political ideology

The governing party's ideology may influence sustainable development and disclosure practices, given the fact that different ideologies usually propose different city styles (Prado-Lorenzo et al., 2012).

Ni and Bretschneider (2007) suggest that right-wing governments tend to carry out programs or activities of a markedly economic nature, such as those associated with market development, inflation control, and the introduction of reforms in the public sector (budget discipline, privatizations, etc.). In contrast, governments with other ideologies tend to focus on social policies, such as the development of state pensions, health care, etc.

As for disclosure practices, politicians may vary the degree of transparency in order to achieve their own goals (Alt et al., 2006). Ferejohn (1999) holds that politicians who wish to enhance the size of the public sector must increase the disclosure of information in order to receive more resources and obtain voters' trust. Therefore, given that left-wing governments tend to argue in favour of a stronger public sector, they will be more prone to implement higher levels of transparency than conservative ones. Left-wing political parties argue that the importance and weight of the state's role could enhance the visibility of public administrations. This visibility would be achieved through the promotion of social welfare, explanations regarding budgetary funds, the improvement of social rights for citizens, the achievement of equality as regards social standards, etc. (Steurer and Hameter, 2010). Online disclosure may be an appropriate mechanism to reveal the achievement of these goals, as well as to foster the role played by the public sector in the provision of public services.

The scarce previous studies that have analysed this issue have found a negative relationship between conservative ideology and the implementation of sustainable practices (Garcia-Sanchez and Prado-Lorenzo, 2008; Anderson and Mizak, 2006; Steurer and Hameter, 2010). In the Spanish context, Prado-Lorenzo et al. (2012) find that left-wing governments negatively influence sustainable practices, concluding that conservative parties undertake additional efforts concerning sustainability in order to attract centre or left-wing ideology voters.

As for disclosure, the results obtained are not sufficiently conclusive. For instance, whereas Guillamón et al. (2011) show that municipalities ruled by left-wing majorities are more transparent than those governed by conservatives, Navarro et al. (2010) find that a governing party's political tendency does not explain the development of public sector sustainability reporting.

Given the aforementioned mixed evidence, we have tested the following hypothesis:

**H5**. Municipal governments with a left-wing ideology are more prone to disclose information about sustainability.

#### 3.3.2. Political stability and strength

In relation to the electoral support obtained by the ruling party last election, it is necessary to consider that a greater or lesser level of political stability can lead to an advancement of or a halt in the activities related to sustainability. In this vein, the implementation of these practices tends to require adequate support for the choice of assigning resources to be taken. Hence, the electoral support obtained by the ruling party, its popularity and the achievement of the highest number of votes lead to a stable context in which reforms can be undertaken.

Political strength is another related issue. Roubini and Sachs (1989a, 1989b) argue that coalition governments may experience a certain degree of weakening due to internal conflicts, and could therefore prove less effective in the undertaking of budgetary reforms that may affect sustainability. Prado-Lorenzo and Garcia-Sanchez (2009) and Prado-Lorenzo et al. (2012) underscore the need for strong political leadership to successfully promote sustainability.

In addition, Alt et al. (2006) and Guillamón et al. (2011) point out that fragmented governments increase their transparency levels above those of single party majority governments. In this context, the political rivalry among the parties included in a coalition leads to the desire to restrict the activities undertaken by other parties that may be future election opponents by increasing transparency levels.

Therefore, we establish the following two hypotheses:

**H6**. Political stability influences the disclosure of information about sustainability.

**H7**. Political strength influences the disclosure of information about sustainability.

#### 3.3.3. Political rivalry

Party composition, ideology and stability may not be enough to reflect the complex political environment surrounding decision-making as regards sustainability policy. The increase in political competition could establish a favourable context for reforms, since it is a way to favour the planning and implementation of new measures that affect not only economic aspects, but also social and environmental factors.

According to Navarro et al. (2011), the less political rivals a government has, the less pressure it will receive from opposing political groups to reveal information about sustainability. In the Spanish context, Prado-Lorenzo et al. (2012) and Navarro et al. (2011) find a positive influence of political rivalry on the implementation of sustainable practices at the municipal level and on the disclosure of generic information about sustainability at the regional level.

Therefore, we have tested the following hypothesis:

**H8**. There is a positive relationship between political rivalry and the disclosure of information about sustainability.

## 4. Methodology

### 4.1. Population and sample

In order to achieve the objectives established, we have chosen Spanish local governments as our population target. The choice of a specific country allows us to obtain a higher volume of data and

more homogeneous results compared to analyses of public entities from different countries (Garcia-Sanchez et al., 2011a and forthcoming). Among the organizations comprising the public sector, the role played by local corporations has been emphasized. The services and functions of the public sector tend to be developed at community-level, with decisions directly affecting citizens' economic, social and environmental welfare (Williams et al., 2008). In this vein, Potts (2004) argues that the proximity of local governments to communities provides them with an ideal location to foster regional and national development and makes them effective agents to advance towards sustainability. Likewise, this closeness to citizens as public service consumers allows them to be aware of information demands from the different stakeholders regarding social responsibility (Navarro et al., 2010).

Moreover, local governments in Spain control most of the daily activities that generate the amount of energy and other resources used by citizens, as well as the waste produced. In addition, they are in charge of long-term community planning, ranging from land use to investment in infrastructures, the options for public transport, delivery of municipal services, and the management of schools and parks (Prado-Lorenzo and Garcia-Sanchez, 2007). Hence, they are in a special position to influence citizens' behaviour as regards transport choices, energy consumption patterns, education, commitment to the environment and behaviour incentives (ICLEI, 2009). However, it is necessary to clarify that Bellringer et al. (2011), in their analysis of local governments in New Zealand, find that disclosure does not seem to derive from an idealistic wish to achieve a sustainable world, but that it is rather due to pragmatism and economic rationalization.

Furthermore, the high number of Spanish municipalities and their disparity as regards size required us to establish certain criteria for selecting the sample, population size being the most appropriate (Navarro et al., 2010). We therefore selected the largest municipalities, according to the definition contained in Article 121 of Act 7/1985 for the Regulation of Local Municipalities, modified by Act 57/2003, incorporating measures to modernize local government. All these municipalities have a population of over 250,000 inhabitants or are capitals of provinces. Moreover, the same law considers municipalities with over 75,000 inhabitants as large population ones if they show specific economic, social, historical or cultural circumstances.

In larger municipalities, the electoral candidates are professional politicians and must make important decisions about municipality management and transparency. In contrast, management is much more informal in the smallest towns, as it is the responsibility of a single inhabitant, termed as a "non-professional" mayor. These small villages can count on an administrative expert, available one day a week, to resolve specific problems. In this sense, the smallest towns do not take decisions about sustainability actions or accountability since they are grouped within higher administration levels for such purposes.

Following these criteria, and according to the latest statistics on the population of Spanish municipalities (National Statistics Institute, 2010), the final sample comprises 102 municipalities, whose population distribution is displayed in Appendix 1. Nevertheless, there are important differences among the cities analysed in relation to their population size, which ranges from 35,241 (Teruel) to 3,273,049 inhabitants (Madrid).

### 4.2. Dependent variable: information index

Act 57/2003 regarding initiatives to modernize Spanish local governments states that the highly populated municipalities chosen are to pursue, as key objectives, the promotion of urban sustainability and the implementation of citizen participation mechanisms.

Concerning information transparency, all the town councils in Spain are legally bound to be accountable in financial and budgetary matters, although there are important disparities in accountability processes (International Transparency – Spain, 2010). In contrast, regarding the social and environmental impact of local administrations, there is no legal regulation that requires public bodies to draw up and formally disclose a Social Responsibility or Sustainability Report. Along these lines, Navarro et al. (2010) emphasize the scarce experience of local administrations concerning this last type of information. As a consequence, we have decided to create an information index based on previous studies.

This information index was devised after analysing the following documents and articles:

- Structure and recommendations from the guidelines for sustainability reports in the public sector, proposed by the Global Reporting Initiative (GRI, 2005).
- Studies focused on the disclosure of sustainability information in the public sphere: Frost and Semaer (2002), Marcuccio and Steccolini (2005), Navarro et al. (2010), Farneti and Siboni (2011), Bellringer et al. (2011).
- Analyses of the disclosure of economic-financial and budgetary information in the public sphere; for instance, Caba et al. (2008), Laswad et al. (2005), Carcaba and Garcia (2008), Rodriguez-Dominguez et al. (2009a), Gallego-Álvarez et al. (2011).
- Indicators of transparency in municipalities (International Transparency – Spain, 2010).
- Papers related to citizen participation in sustainability matters (i.e., Prado-Lorenzo and Garcia-Sanchez, 2009) and to participatory e-government (i.e., Rodriguez-Dominguez et al., 2009b: Garcia-Sanchez et al., 2011b).
- Other papers about e-government in general (i.e., Rodríguez et al., 2005; Gandía and Archidona, 2008; Gallego-Álvarez et al., 2010; Rodriguez-Dominguez et al., 2011).

The result of this process is a survey made up of 72 items grouped into two sections: a) strategy, town council profile and relationships with stakeholders (25 items), and b) economic, social and environmental information (47 items). Appendix 2 reflects the contents of each section.

The information contained in this index was obtained through a content analysis of the town councils' websites during May and June 2011. Content analysis is one of the main techniques used to study online information, and it is based on checking the presence/absence of a set of sections on the website, typically using binary values (1: presence of the information sought; 0: absence of the information sought). Subsequently, we added these values without prior potential weighting of the items, in order to avoid the arbitrariness inherent to the use of weighted indexes.

### 4.3. Independent variables

Table 1 contains the explanatory variables proposed to test the hypotheses. The information needed to create the variables proposed was obtained from the websites of the Spanish Home Office [Ministerio del Interior], Spanish Ministry of the Economy and the Spanish Statistics Office.

### 4.4. Descriptive analysis techniques

To achieve the objectives pursued, we have used a set of different methodologies. More specifically, each municipal score is initially studied according to transparency levels through graphical analyses and descriptive statistics that allow for qualitative and quantitative analyses of the trends.

Descriptive statistics focus on mean, standard deviation, minimum and maximum. Graphs are one of the main and simplest

**Table 1**
Independent variables.

| Variable | Definition | Hypothesis |
|---|---|---|
| *Municipal context* | | |
| ECONOMIC LEVEL | Numerical variable that reflects the level of local economic development measured by the municipality's unemployment rate | H1 |
| SUSTAINABILITY | Numerical variable representing the level of local sustainability measured by the municipality's score in the MERCO ranking of quality of life | H2 |
| *Internal features of the public body* | | |
| SIZE | Size of the public body, measured by the number of inhabitants in the municipality | H3 |
| BUDGET | Institutional capacity represented by the budgetary spending per inhabitant | H4 |
| *Political factors* | | |
| CONSERV | Binary variable that takes the value 1 if the political tendency of the ruling party is conservative, and 0 otherwise | H5 |
| DFAVOTES | Numerical variable that proxies for the popularity of the party in office using the difference in percentage of votes with respect to the second most voted party. | H6 |
| STRENGTH | Numerical variable that reflects the local government's level of political strength. To represent this strength, in accordance with Garcia-Sanchez et al., 2011a, we use a Herfindahl index which ranges between 0 (maximum fragmentation) and 1 (maximum strength). Maximum fragmentation implies the existence of one town councillor from each party, whereas maximum strength would mean that all the councillors belong to the same political party. | H7 |
| PARTIES | Political rivalry measured by the number of political parties taking part in general elections | H8 |

methods to display information, owing to their capacity for attracting readers' attention easily, and for providing fast and overall information about data. Specifically, we used biplot methodology (Vicente-Villardón, 2000).

Biplot methodology is a statistical technique that consists of graphically depicting a data matrix $X$ (nxp) derived from analysing $n$ individuals according to $p$ numerical characteristics. There are two markers related to two types of information: markers for individuals (or rows) and markers for variables (or columns). Both markers can be represented in the same reference system with the highest quality of representation (Galindo, 1985, 1986). As a significant advantage, compared to other statistical and graphical techniques, biplots permit the visualization of observations and variables in the same space. Thus, it is possible to identify associations among observations, among variables, and among variables and observations.

The markers are the vectors representing individuals or rows and variables or columns in the figure. In Gabriel (1971), the method for obtaining the vectors is not specified, and the method of least squares and decomposition in vectors and singular values of $X$ is used. However, it is argued that although this adequately reflects the statistical and geometric properties of the variables, the individuals are not appropriately represented.

Galindo (1985) generalized the concept of simultaneous representation by creating a new type of biplot, HJ-Biplot, which is applied to the complete data set, allowing individuals and variables to be represented with the same quality. This type of biplot contributes to the improvement of other approaches, such as that of Gabriel (1971). Hence, Galindo (1985, 1986) defines HJ-Biplot as a multivariate graphical representation of matrix $X$ (nxp) through vectors for the rows and columns, so that both vectors appear in the same reference systems with the highest quality of representation.

As for the interpretation of biplots, according to Gower and Hand (1996), points are used to represent individuals (in our study, the municipalities) and axes to reflect variables (in our study, the five sections the informative index is made up of). Interpretation is based on the angles between the different vectors: variables with vectors displaying a small angle show similar behaviours, points of close individuals correspond to similar individuals and points of remote individuals have to do with non-similar individuals.

Moreover, if there is a small angle between an individual and a variable, it means that the individual is significant for the explanation of the variable and that the variable has a high value for the individual. The distance between points reflects the variability of those points in the study. By analysing the length of the variables, we obtain their variability, providing researchers with an idea of the dispersion in the figure. When the variables are close, it is said that they are highly correlated, with similar behaviour; when they take different directions, they are highly correlated in an inverse sense; if they are perpendicular, they are independent. Regarding the angles, the smaller the angle between two vectors joining the centre of gravity with the points that represent the variables, the more concentrated the characters are; finally, covariance of variables is obtained by observing the angle.

Unlike other techniques, the biplot method allows us to easily detect differences in the behaviour of municipalities with regard to different dimensions (types of information disclosed) in visual form, as well as the closeness of each municipality to a specific dimension. In fact, biplots can be regarded as graphical representations associated to principal component analysis, being thereby related to factorial analysis. The advantage derived from the figure is that it permits to locate individuals and studies their similarity in relation to factors. It also enables us to represent the variables so that it is possible to graphically study the correlations among them, the correlations with the factors or axes and the relationship with individuals. In short, this technique enables us to reflect both indicators, and municipalities, showing the closeness of the latter to the former. Also, it permits the simultaneous analysis of the different dimensions (types of information).

### 4.5. Model of explanatory analysis

In order to detect the factors behind information transparency in municipalities, we have used dependency models. The aim of the models that use these techniques are to predict the impact made by a set of independent or explanatory variables, considered simultaneously, on sustainability disclosure practices (Hair et al., 1992). Hence, the variables selected to test the hypotheses proposed in Section 2, have been used as a basis to define the following model (1), in which the level of transparency as regards social responsibility in Spanish local administrations is determined by institutional features and municipal' policies.

$$TransparencySRi = \beta_0 + \beta_1\, ECONOMIC + \beta_2\, SUSTAINABILITY + \beta_3\, SIZE + \beta_4\, BUDGET + \beta_5\, CONSERV + \beta_6\, PARTIES + \beta_7\, STRENGHT + \beta_8\, DFAVOTES + \varepsilon \quad (1)$$

**Table 2**
Descriptive statistics.

| | Minimum | Maximum | Mean | Standard deviation |
|---|---|---|---|---|
| OVERALL | 13 | 64 | 41.1433 | 14.15194 |
| STRATEGY | 2 | 25 | 15.1284 | 6.12019 |
| INDICATORS | 7 | 42 | 26.0150 | 9.15163 |
| ECONOMIC | 0 | 18 | 11.2520 | 6.49424 |
| ENVIRONMENTAL | 1 | 8 | 6.3824 | 1.16928 |
| SOCIAL | 1 | 18 | 8.3807 | 3.61164 |

where:

*ECONOMIC*: economic level of the municipality measured by the unemployment rate.

*SUSTAINABILITY*: level of the municipality's sustainability measured by the QoL level.

*SIZE*: size of the local administration measured by number of inhabitants.

*BUDGET*: institutional capacity represented by the budgetary spending per inhabitant.

*CONSERV*: the ruling party in the municipality has a conservative ideology.

*PARTIES*: political rivalry measured by the number of political parties taking part in general elections.

*STRENGTH*: electoral strength of the governing party measured by Herfindahl index.

*DFAVOTES*: popularity of the party in power using the difference in percentage of votes with respect to the second most voted party.

Model (1) has been empirically tested through a multiple linear regression. According to the classification into two sections of the information analysed, the dependent variable is defined from the global information index and from the different sub-indices for each group forming the disclosure index in the municipalities' websites.

## 5. Results of the descriptive analysis

Table 2 summarizes the descriptive statistics for each group into which the information index is clustered and that have been termed OVERALL (corresponding to A + B in Appendix 2), STRATEGY (corresponding to A in Appendix 2), ECONOMIC (corresponding to B.1 in Appendix 2), ENVIRONMENTAL (corresponding to B.2 in Appendix 2) and SOCIAL (corresponding to B.3 in Appendix 2). The last three typologies (ENVIRONMENT, SOCIAL and ECONOMIC) are grouped in INDICATORS. As can be observed, the Spanish municipalities analysed report 41 indicators on average, 56 per cent of the items analysed, with a standard deviation of 14 indicators, thereby obtaining an interval ranging from 27 to 55 items. The most transparent town council reveals 64 of the 72 items analysed, while the least transparent one discloses 13 items.

As for the information about strategy, the town councils' profiles and their relationships with stakeholders (section formed by 25 items), the information released reaches 60 per cent of the items considered (approximately 15 items) on average, with an interval of 9–21 items. This interval implies the disclosure of 36–84 per cent of the items in this section.

The mean disclosure of economic, social and environmental information contains 26 of the 47 items analysed (55 per cent). Individually, the economic, financial and budgetary information available on the municipal websites shows an average of 11 items (61 per cent), although its variability is high (+6 items). This mean is lower than that obtained for social information (44 per cent, 8 items). Concerning environmental information (11-item section), 6 indicators are revealed on average (54 per cent, the interval ranging from 5 to 7 items).

Regarding the types of information about social responsibility issued by town councils, Table 3 shows the bidirectional relationships that exist between the different information groups. There is a positive correlation among the different types of information, except as regards the environmental and social groups, which do not display significant correlations between them. Interestingly, the environmental information is the least related to the other items.

In order to group the municipalities according to their transparency levels, different tables and figures obtained after using MultBiplot software are displayed below. Thus, Table 4 reflects the eigenvalues and the explained variance. There is a dominant axis that absorbs 56 per cent of the inertia in the system. The trend in the eigenvalues becomes truncated in the third axis, achieving an accumulated inertia of 78 per cent in the second axis. The remaining factors provide less information; consequently, we have chosen to retain the first two first axes for classification purposes.

The contribution of each factor to the axes is displayed in Table 5 below. These factors are made up of the variables observed and are represented in the data matrix.

As can be observed, the STRATEGY, ECONOMIC and SOCIAL information factors heavily contribute to axis 1, whereas their contribution diminishes in the case of axis 2. In contrast, the contribution of ENVIRONMENTAL information is higher as regards axis 2 and a lower for axis 1.

Fig. 1 jointly depicts the municipalities and the vectors referring to information items. They are depicted in relation to the variables on the different axes. As mentioned above, the interpretation of the variables is based on the angles between the vectors, so that variables with vectors forming small angles are variables with similar behaviour. In this vein, we observe a high similarity between the items related to the STRATEGY and ECONOMIC variables. Also, municipalities with high transparency levels as regards economic, financial and budgetary issues show a weaker tendency towards social matters. On the other hand, there is a significant opposition between the volumes of information disclosed on social issues and on environmental matters.

Likewise, a variable's proximity to the coordinate axis reflects the variable's explanatory capacity for each quadrant. Hence, the information linked to STRATEGY and ECONOMIC would be the best to explain those individuals located in quadrants 1 and 4. In contrast, the municipalities located in quadrants 2 and 3 display lower volumes of these types of information. The vector representing the ENVIRONMENTAL items characterizes quadrant 4 and, to a lesser extent, quadrant 3. Consequently, the municipalities located in quadrants 1 and 2 would disclose fewer environmental indicators. Moreover, the vector representing the SOCIAL items

**Table 3**
Correlations among typologies of information.

| | STRATEGY | INDICATORS | ECONOMIC | ENVIRONMENTAL | SOCIAL |
|---|---|---|---|---|---|
| STRATEGY | | | | | |
| INDICATORS | 0.706[a] | | | | |
| ECONOMIC | 0.703[a] | 0.929[a] | | | |
| ENVIRONMENTAL | 0.365[a] | 0.387[a] | 0.290[a] | | |
| SOCIAL | 0.407[a] | 0.739[a] | 0.461[a] | 0.134 | |

[a] Correlation significant at 0.05.

**Table 4**
Eigenvalues and variance explained.

| AXES | Eigenvalues | Explained variance | Accumulated variance |
|---|---|---|---|
| 1 | 15.03 | 55.919 | 55.919 |
| 2 | 9.436 | 22.037 | 77.957 |
| 3 | 7.732 | 14.799 | 92.756 |
| 4 | 5.41 | 7.244 | 100 |

features in quadrant 1 and, to a lesser extent, in quadrant 3. Therefore, the local administrations located in quadrants 2 and 4 would show less transparency as regards social issues.

In order to jointly interpret the individuals and the variables, the projection of each municipality on the variable should be used. This projection fits better when there is a high degree of proximity to the variable and a long distance to the coordinate origin. As for the axes, they are new variables obtained as linear combinations of the variables observed. The positive and negative values in the axes are derived from the matrix decomposition of their original values and represent the vectors in a two-dimensional Euclidean space.

Starting with quadrant 1, we observe that Malaga is characterized by fostering relationships with stakeholders and by showing high degrees of transparency in strategy, economic information and, especially, social issues (owing to its proximity to these vectors and its distance from the quadrant's centre). In the fourth quadrant, Elche and Alcobendas appear characterized by encouraging relationships with stakeholders and showing high degrees of transparency in strategy, economic information and, more particularly, in environmental matters.

Therefore, the municipalities located in quadrants 1 and 4 tend to actively encourage the participation of interest groups in strategic, sustainability and management matters, showing a certain degree of differentiation concerning their transparency in sustainability matters. Whereas quadrant 1 focuses on social issues, quadrant 4 places more emphasis on environmental ones.

Likewise, the local administrations in quadrant 3 (e.g. Caceres, Almeria, Burgos) mainly disclose environmental information. In contrast, they provide scarce strategic, social and economic information.

Girona and Tarragona, in quadrant 2, are characterized by disclosing social information and low levels of transparency in the remaining information areas.

Therefore, the municipalities located in quadrants 2 and 3 tend to show a certain lack of citizenship participation and accountability, except regarding environmental topics in the case of the municipalities belonging to group 3, and regarding social issues in the case of those located in quadrant 2.

## 6. Results of the explanatory analysis

Table 6 displays the descriptive statistics for the determinants of the levels of municipal transparency as regards social responsibility.

Table 7 contains the correlations among the variables proposed. CONSERV shows the highest correlation with the dependent variable (−0.257), which is negative. Likewise, there are no high correlations among the control and independent variables that could lead to multicollinearity problems.

The results derived from estimating the explanatory models are reflected in Table 8. The explanatory power of these models ($R^2$) ranges from 14 per cent to 25 per cent for different confidence levels. More specifically, the models with lower predictive capacity (not statistically significant) are those that explain the disclosure of social and environmental information considered individually. In contrast, the overall information index model has 25 per cent explanatory capacity, followed by the overall economic, social and environmental information model (23 per cent) and the information about municipal strategy model (22 per cent).

**Table 5**
Contribution of the factors to the axes.

| Factor | Axis 1 | Axis 2 |
|---|---|---|
| STRATEGY | **756** | 1 |
| ECONOMIC | **753** | 15 |
| ENVIRONMENTAL | 283 | **614** |
| SOCIAL | **445** | 252 |

When generally considered, all the variables have a negative effect, except for size of the public body, which has a positive effect on local transparency as regards social responsibility. Furthermore, the political and institutional variables show the highest explanatory capacity when compared to those representing the context.

Regarding the model that explains the overall information index and the strategy and indicators sub-indices, two of the eight variables turn out to be statistically significant. The variable SIZE shows a positive effect at a confidence level of 95 per cent ($0.05 > p$-value $> 0.01$) in the analysis models. The binary variable CONSERV, which represents conservative ideology in the governing party, has a negative effect at a confidence level of 95 per cent.

When the variable related to information disclosed about economic, environmental and social indicators is analysed independently, the results obtained differ partially from those commented for the overall indices. Thus, the volume of economic information revealed has to do with the size of the local administration (positively) and with political rivalry (negatively). Regarding environmental information, the presence of conservative parties in municipal governments negatively affects the release of this set of indicators. As for social information, none of the contextual, institutional or political factors seem to be relevant.

In short, the results indicate the existence of certain factors that may encourage or halt transparency and sustainability reporting. More particularly, the political trend of the governing party and the level of political rivalry have negative effects on transparency, whereas organizational size has a positive impact.

## 7. Discussion of results

### 7.1. Sustainability disclosure practices

The results obtained from the descriptive analysis in Section 5 show that, overall, Spanish municipalities disclose similar percentages of information related to strategy, municipal governments' profile and relationships with stakeholders (60 per cent of the items considered), and economic, social and environmental information (55 per cent). But it is necessary to point out that the practices of social responsibility and sustainability disclosure are scarce. Along these lines, information related to environmental and social issues (particularly the former) is the least disclosed, seeming to be less important and less related to the remaining types of information analysed.

Concerning disclosure contents, most of the previous empirical studies mainly focus on social information: for instance, Williams et al. (2009) in Australia; Farneti and Siboni (2011) in Italy; Navarro et al. (2011) in the United Kingdom and Ireland; Navarro et al. (2010) in Spain. On the other hand, in their international analysis, Leeson and Ivers (2005) find that sustainability reports tend to be released as an extension of the disclosure of environmental information. In contrast to this, our findings show a lower level of disclosure concerning environmental issues, with a predominance of economic matters as the central focus of disclosure.

### 7.2. Determinants of sustainability disclosure practices

In the discussion of the results we first focus on the variables with significant coefficients from a statistical perspective,

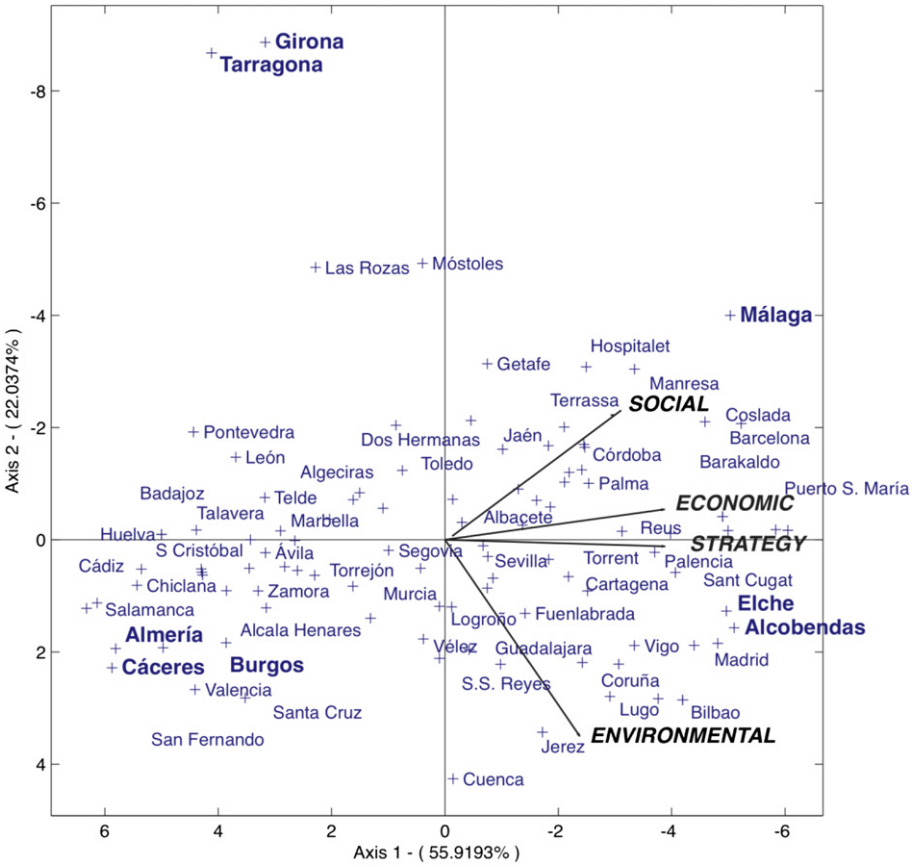


**Fig. 1.** Illustration of municipalities as regards information transparency.

associating them with hypotheses H3, H5 and H8. Later, we mention the hypotheses for which there is no empirical evidence: H1, H2, H4, H6 and H7.

The positive and significant relationship between the size of the public body and its sustainability reporting is consistent with the previous results obtained by Frost and Semaer (2002) and Navarro et al. (2011). We thus obtain evidence in favour of the fact that the large-sized municipalities show a higher degree of visibility and a higher number and variety of stakeholders, which may encourage the disclosure of sustainability activities, thereby confirming hypothesis H3.

With regard to political ideology, our findings are in accordance with our proposed hypothesis H5 (left-wing governments tend to disclose a higher volume of information). Along this line, the results confirm the conclusions obtained by Guillamón et al. (2011), for whom the municipalities governed by progressive mayors are more transparent than those ruled by conservative mayors. In contrast, the evidence obtained differs from that found in Prado-Lorenzo et al. (2012), who argue that parties with conservative tendencies undertake an additional efforts to establish sustainable practices in order to attract progressive ideology voters; and it also differs from that of Navarro et al. (2010), who find that a party's political trend does not seem to affect the revelation of information about social responsibility in public administrations.

**Table 6**
Descriptive statistics.

| | Mean | Standard deviation |
|---|---|---|
| ECONOMIC LEVEL | 7.9701 | 2.03140 |
| SUSTAINABILITY | 39.6494 | 22.88344 |
| SIZE | 214734.6569 | 363867.08509 |
| BUDGET | 1100.2958 | 260.93811 |
| PARTIES | 9.3247 | 3.95847 |
| STRENGTH | 0.5036 | 0.08242 |
| DFAVOTES | 0.3338 | 0.08174 |

Regarding the other significant variable – political rivalry –, in the case of environmental information, the negative relationship obtained suggests that when there is a low number of parties there is a greater tendency to disclose environmental information. Hence, given its relevance in the current context, disclosure about environment issues is likely to go beyond governments' partisan agenda and to be regarded as something apart from political rivalry. In this regard, the results differ from Navarro et al. (2011) and Prado-Lorenzo et al. (2012), for whom there is a positive association between both variables. Therefore, hypothesis H8 would be partially accepted, with a different sign to that initially proposed. Interestingly, economic information is affected by political rivalry, whereas the remaining types of information do not seem to be influenced by political competition, going beyond the political agenda.

Turning to hypotheses H1, H2, H4, H6 and H7, unlike previous studies focused on the Spanish context (e.g. Guillamón et al., 2011; Navarro et al., 2010, 2011; Prado-Lorenzo et al., 2012), the variables linked to the municipal context (economic level, measured by the unemployment rate, and quality of life) and institutional capacity (measured by the budget) do not seem to have a significant influence on the volume of sustainability reporting. Contrarily to Navarro et al. (2011), our findings do not evidence any impact of unemployment rates on the disclosure of sustainable practices. Concerning political factors, unlike Guillamón et al. (2011), we do not detect that fragmentation in the government leads to a higher degree of disclosure and transparency.

In short, this study offers an extensive analysis of the practices of sustainability disclosure in a large sample of municipalities and

**Table 7**
Correlations.

| | TOTAL | SIZE | ECONOMIC | CONSERV | PARTIES | STRENGTH | DFAVOTES | BUDGET |
|---|---|---|---|---|---|---|---|---|
| SIZE | 0.187 | | | | | | | |
| ECONOMIC | −0.093 | −0.107 | | | | | | |
| CONSERV | −0.257[a] | 0.077 | −0.004 | | | | | |
| PARTIES | 0.126 | 0.187 | 0.056 | −0.062 | | | | |
| STRENGTH | −0.154 | 0.056 | 0.234[a] | 0.329[b] | −0.015 | | | |
| DFAVOTES | −0.047 | −0.069 | 0.098 | 0.385[b] | −0.291[a] | −0.061 | | |
| BUDGET | −0.105 | −0.038 | −0.054 | −0.048 | 0.020 | −0.040 | −0.187 | |
| SUSTAINAB. | −0.117 | −0.399[b] | 0.298[b] | −0.150 | −0.324[b] | −0.036 | −0.063 | 0.080 |

[a] Correlation significant at 0.05.
[b] Correlation significant at 0.01.

**Table 8**
Factors explaining the information about municipal social responsibility.

| Dependent variable: | OVERALL | | | | STRATEGY | | | | INDICATORS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Std. Error. | t | Sig. | B | Std. Error. | t | Sig. | B | Std. Error. | t | Sig. |
| (Intercept) | | 8.54 | 3.49 | 0.00 | | 19.31 | 3.56 | 0.00 | | 12.38 | 3.75 | 0.00 |
| ECONOMIC | −0.07 | 0.41 | −0.55 | 0.59 | −0.02 | 0.94 | −0.13 | 0.89 | 0.01 | 0.60 | 0.11 | 0.91 |
| SUSTAINABILITY | −0.04 | 0.04 | −0.31 | 0.75 | −0.09 | 0.09 | −0.67 | 0.50 | −0.04 | 0.06 | −0.29 | 0.78 |
| SIZE | **0.36** | **0.00** | **2.21** | **0.03** | **0.36** | **0.00** | **2.16** | **0.03** | **0.39** | **0.00** | **2.34** | **0.02** |
| BUDGET | −0.16 | 0.00 | −1.39 | 0.17 | −0.12 | 0.01 | −1.07 | 0.29 | −0.15 | 0.00 | −1.32 | 0.19 |
| CONSERV | **−0.35** | **1.79** | **−2.64** | **0.01** | **−0.32** | **4.04** | **−2.35** | **0.02** | **−0.34** | **2.59** | **−2.50** | **0.02** |
| PARTIES | −0.28 | 0.28 | −1.62 | 0.11 | −0.16 | 0.64 | −0.89 | 0.38 | −0.21 | 0.41 | −1.19 | 0.24 |
| STRENGTH | −0.12 | 10.51 | −0.92 | 0.36 | −0.11 | 23.77 | −0.85 | 0.40 | −0.13 | 15.24 | −1.03 | 0.31 |
| DFAVOTES | −0.08 | 11.43 | −0.58 | 0.56 | −0.01 | 25.86 | −0.09 | 0.93 | −0.04 | 16.58 | −0.27 | 0.79 |
| | **$R^2$** | **0.25** | | | **$R^2$** | **0.22** | | | **$R^2$** | **0.23** | | |
| | ***F*** | **2.55** | **(0.02)** | | ***F*** | **2.11** | **(0.05)** | | ***F*** | **2.34** | **(0.03)** | |

| Dependent variable: | ECONOMIC | | | | ENVIRONMENTAL | | | | SOCIAL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *B* | Std. Error. | *t* | Sig. | B | Std. Error. | *t* | Sig. | *B* | Std. Error. | *t* | Sig. |
| (Intercept) | | 1.67 | 3.88 | 0.00 | | 8.60 | 2.60 | 0.01 | | 5.14 | 1.98 | 0.05 |
| ECONOMIC | 0.17 | 0.08 | 1.24 | 0.22 | −0.06 | 0.42 | −0.46 | 0.65 | 0.11 | 0.25 | 0.77 | 0.45 |
| SUSTAINABILITY | 0.03 | 0.01 | 0.25 | 0.81 | −0.15 | 0.04 | −1.10 | 0.28 | −0.03 | 0.02 | −0.25 | 0.80 |
| SIZE | **0.50** | **0.00** | **2.88** | **0.01** | 0.26 | 0.00 | 1.49 | 0.14 | 0.18 | 0.00 | 1.02 | 0.31 |
| BUDGET | −0.06 | 0.00 | −0.51 | 0.61 | −0.06 | 0.00 | −0.50 | 0.62 | −0.09 | 0.00 | −0.72 | 0.48 |
| CONSERV | −0.02 | 0.35 | −0.15 | 0.88 | **−0.24** | **1.80** | **−1.69** | **0.10** | −0.23 | 1.08 | −1.59 | 0.12 |
| PARTIES | **−0.36** | **0.06** | **−1.96** | **0.05** | −0.05 | 0.29 | −0.29 | 0.77 | 0.09 | 0.17 | 0.46 | 0.65 |
| STRENGTH | −0.07 | 2.05 | −0.52 | 0.61 | −0.06 | 10.59 | −0.42 | 0.68 | −0.11 | 6.33 | −0.79 | 0.43 |
| DFAVOTES | 0.10 | 2.23 | 0.68 | 0.50 | 0.03 | 11.52 | 0.19 | 0.85 | 0.01 | 6.89 | 0.09 | 0.93 |
| | ***$R^2$*** | **0.17** | | | $R^2$ | 0.15 | | | $R^2$ | 0.14 | | |
| | ***F*** | **1.54** | **(0.10)** | | *F* | 1.37 | (0.23) | | *F* | 1.27 | (0.28) | |

The statistically significant values are stressed in bold.
*ECONOMIC*: economic level of the municipality. *SUSTAINABILITY*: level of the municipality's sustainability. *SIZE*: size of the local administration. *BUDGET*: institutional capacity. *CONSERV*: the ruling party in the municipality has a conservative ideology. *PARTIES*: political rivalry. *STRENGTH*: electoral strength of the governing party. *DFAVOTES*: popularity of the party in power.

contributes to previous literature through its study of the factors behind the disclosure of sustainability information in the public sphere, which, compared to the private sector, has been less studied. Our findings stress the relative delay of sustainability reporting as compared to financial reporting, as well as the relevance of the following three factors: visibility of the public institution, political ideology and the level of political rivalry. The limitations this study faces mainly derive from the techniques used and the sample studied. First, the study is based on a disclosure index, which may involve a certain degree of subjectivity; although the index is quite extensive in order to include the main perspectives about sustainability, certain aspects might have been left out. Second, the sample is made up of the largest municipalities, which have undoubtedly headed the process of accountability concerning sustainability issues; however, other minor municipalities and other levels of government have been excluded from the analysis. Third, there are other aspects that could influence the degree of disclosure of public institutions, such as the type of public administration or cultural features, which have not been considered in this research. Therefore, these aspects are beyond the purposes of this study and could be dealt with in future works.

## 8. Conclusions

Citizen demands for transparency and accountability in social and environmental matters have led to a significant increase in the publishing of sustainability reports by private companies. However, a significant delay can be perceived as regards the dissemination of information about sustainability in the public sphere, for which there are also less thorough analyses.

This study addresses the empirical analysis of transparency in social responsibility in the 109 largest Spanish local governments, as well as the determinants of these information practices.

We observe high degrees of similarity in the release of information related to strategy, town council profile and economic information, there being also a high degree of correlation among them. In addition, municipalities showing higher degrees of transparency in economic, financial and budgetary subjects do not tend to focus on social issues. In contrast, there is a significant trade-off in the volumes of information disclosed about social and environmental topics. Specifically, according to the biplot results, environmental information shows a higher degree of independence regarding its disclosure than other types of information.

Regarding the factors that determine the level of transparency in social responsibility, the results indicate the existence of certain factors that may encourage or hinder transparency and sustainability reporting. More particularly, transparency depends negatively on the political trend of the governing party and on the level of political rivalry, while the size of an organization has a positive impact. We have observed that the largest municipalities show more visibility and a higher number and variety of stakeholders, which may encourage disclosure about sustainability.

Most of the analysed variables regarding municipal context do not exhibit significant degrees of influence on the volume of sustainability reporting. In addition, conservative governments and municipalities with high electoral rivalry do not seem to be interested in increasing municipal transparency.

From a regulatory perspective, our findings suggest that Spanish regulators should issue recommendations, guidelines or rules to increase the homogeneity of reporting and transparency in local administrations. Therefore, they should encourage that the disclosure covers social and environmental matters, not only focusing on economic issues. We have also perceived that current disclosure practices are closely linked to specific political ideologies (mainly left-wing parties) and electoral effects in municipalities with a high number of political parties in the elections. Likewise, we should emphasize that a municipality's visibility (and not its budgetary capacity) is the main determinant for greater accountability. In line with the recommendations made for the private sector in all European countries, the adoption of GRI guidelines for the public sector seems appropriate.

Moreover, given that the Transparency Index of Municipalities in Spain, drawn up by International Transparency – Spain, has encouraged a significant increase in economic-financial transparency, it would be advisable for this institution to begin to include issues related to social and environmental matters among the information items they analyse. In this regard, accountability in the public sector should go beyond financial issues and take into consideration their impact on overall sustainability. As a consequence, the public sector will be required to have a greater extent of sustainability, accountability and transparency in the use of public resources.

From these findings, several policy recommendations can be proposed. First, we can stress the need for national policies, laws or recommendations that generate similar levels of transparency among local governments in order to avoid social dilemma. In this sense, a similar accountability process may limit non-sustainable behaviours, playing a role similar to that of markets in the private sector. Secondly, the accountability process should focus on increasing information about the social and environmental actions and effects of a municipality; in this vein, the indicators analysed in this study or the GRI guidelines should serve as a guide in the definition and systematic dissemination of the town councils' commitments.

## Appendix 1. Sample.

| MUNICIPALITY | POPULATION | MUNICIPALITY | POPULATION |
|---|---|---|---|
| Madrid | 3,273,049 | Mataró | 122,905 |
| Barcelona | 1,619,337 | Parla | 120,182 |
| Valencia | 809,267 | Santa Coloma de Gramenet | 120,060 |
| Sevilla | 704,198 | Torrejón de Ardoz | 118,441 |
| Zaragoza | 675,121 | Jaén | 116,790 |
| Málaga | 568,507 | Algeciras | 116,417 |
| Murcia | 441,345 | Alcobendas | 110,080 |
| Palma | 404,681 | Ourense | 108,673 |
| Palmas de Gran Canaria (Las) | 383,308 | Reus | 106,622 |
| Bilbao | 353,187 | Torrevieja | 101,091 |
| Alicante/Alacant | 334,418 | Telde | 100,900 |
| Córdoba | 328,547 | Barakaldo | 99,321 |
| Valladolid | 315,522 | Lugo | 97,635 |
| Vigo | 297,124 | San Fernando | 96,689 |
| Gijón | 277,198 | Girona | 96,236 |
| Hospitalet de Llobregat (L') | 258,642 | Santiago de Compostela | 94,824 |
| Coruña (A) | 246,047 | Cáceres | 94,179 |
| Granada | 239,154 | Lorca | 92,694 |
| Vitoria-Gasteiz | 238,247 | Coslada | 91,218 |
| Elche/Elx | 230,822 | Talavera de la Reina | 88,986 |
| Oviedo | 225,155 | Puerto de Santa María (El) | 88,503 |
| Santa Cruz de Tenerife | 222,643 | Rozas de Madrid (Las) | 88,065 |
| Badalona | 218,886 | Cornellà de Llobregat | 87,240 |
| Cartagena | 214,165 | Orihuela | 87,113 |
| Terrassa | 212,724 | Roquetas de Mar | 85,808 |
| Jerez de la Frontera | 208,896 | Ejido (El) | 85,389 |
| Sabadell | 207,338 | Avilés | 84,202 |
| Móstoles | 206,015 | Guadalajara | 83,789 |
| Alcalá de Henares | 204,120 | Pozuelo de Alarcón | 82,804 |
| Fuenlabrada | 198,973 | Toledo | 82,489 |
| Pamplona/Iruña | 197,488 | Sant Boi de Llobregat | 82,411 |
| Almería | 190,013 | Palencia | 82,169 |
| Leganés | 187,227 | Pontevedra | 81,981 |
| Donostia-San Sebastián | 185,506 | Sant Cugat del Vallès | 81,745 |
| Santander | 181,589 | Getxo | 80,277 |
| Castellón de la Plana | 180,690 | Torrent | 79,843 |
| Burgos | 178,574 | Gandía | 79,430 |
| Albacete | 170,475 | Arona | 79,377 |
| Getafe | 169,130 | Chiclana de la Frontera | 78,591 |
| Alcorcón | 168,299 | San Sebastián de los Reyes | 78,157 |
| Salamanca | 154,462 | Mijas | 76,362 |
| Logroño | 152,650 | Manresa | 76,209 |
| San Cristóbal de La Laguna | 152,222 | Vélez-Málaga | 75,623 |
| Badajoz | 150,376 | Ciudad Real | 74,345 |
| Huelva | 149,310 | Zamora | 65,998 |
| Tarragona | 140,184 | Ávila | 58,245 |
| Lleida | 137,387 | Cuenca | 56,189 |
| Marbella | 136,322 | Segovia | 55,748 |
| León | 134,012 | Huesca | 52,347 |
| Cádiz | 125,826 | Soria | 39,838 |
| Dos Hermanas | 125,086 | Teruel | 35,241 |

## Appendix 2. Information index.

| A) STRATEGY, TOWN COUNCIL PROFILE AND STAKEHOLDERS |
|---|
| Municipality's strategic planning or local agenda 21 planning |
| Political composition of the elected positions on the town council |
| Emails of the mayor and members of the town council |
| Information about the different boards and their functions |
| Emails of the boards |
| Basic information about decentralized bodies |
| Agendas of the day before municipal plenary sessions |
| Minutes of the town council meetings |

(*continued*)

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|---|
| Agreements of the town council meetings |
| Agreements of the governing boards |
| Municipal regulation |
| Municipal services provided and information about their monitoring |
| Taxes |
| Problems and incidents in municipal services |
| Good Governance Principles or Code of Ethics of the Town Council |
| Public Declaration of Properties and Activities on behalf of the members of the town council |
| Salaries of the mayor and other council members |
| Political positions in municipal management and the salaries involved |
| Norms about citizen participation |
| Local boards for promoting citizen participation |
| Composition and workings of district boards |
| Channels for citizen participation regarding strategic issues |
| Mechanisms for suggestions and citizen participation in drawing up local budgets |
| Discussion forums on the local website |
| Suggestions and Complaints box |
| B) ECONOMIC, SOCIAL AND ENVIRONMENTAL INFORMATION |
| *B.1.) Economic, financial and budgetary indicators* |
| Surplus or deficit per inhabitant |
| Tax autonomy |
| Tax revenues per inhabitant |
| Public spending per inhabitant |
| Public investment per inhabitant |
| Average period of payment to providers and debtors |
| Average period of collection |
| Amount of municipality's public debt |
| Historical trend of the municipality's public debt |
| Debt ratio per inhabitant |
| Efficiency and efficacy indicators |
| Annual reports of the town council (Balance Sheet, Income Statement, Budgetary Cash Report, Notes) |
| Municipality's budget |
| Claims to the budget |
| Modifications in budget approved by the council |
| Interim reports about the budget |
| Budgets of the decentralized organizations |
| External auditor's reports |
| *B.2.) Environmental indicators* |
| Spending and research on the environment |
| Environmental impact of municipal products and services |
| Promotion of efficient products and services as regards energy consumption or based on renewable energies |
| Effect of environmental practices on energy consumption |
| Direct consumption of energy derived from primary sources |
| Consumption of intermediate energy |
| Activities pursuing energy saving |
| Sources of water collection and volume of water collected |
| Percentage of recycled and reused water in the municipality |
| Information about wastewater and wastewater discharges in the municipality |
| Updated information about air and noise pollution in different areas of the municipality |
| *B.3.) Social indicators* |
| Public employment demands of the town council |
| List of jobs in the town council |
| List of jobs in the decentralized organizations |
| Information about staff selection processes |
| Composition and convening of hiring boards |
| Investments put out to tender: official announcements |
| Investments put out to tender: decisions and projects presented |
| List and amounts paid to the most important minor providers of the town council |
| List and amounts paid to the most important investment providers of the town council |
| List and monetary amounts of the projects and building works financed by the central state |
| Monetary import of the projects and building works already paid by the central state |
| Firms contracted to undertake the projects and building works financed by the central state |
| Spending on social programs |
| Public announcements of aid and subsidies |
| Aid and subsidies for NGOs, neighbourhood associations, cultural institutions, etc. |

(*continued*)

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|---|
| Number of requests, claims, etc. solved by a silence procedure |
| Administrative paperwork, proceedings, online licences |
| Online tracking of the processing of administration procedures and incidences |

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