

Measuring Local Government Transparency. Influence of Political Sign in Multidimensional Analysis

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Abstract During the last years, Transparency has become in a key element in the interaction between public administrations and society. However, this is a broad concept, which needs to be defined and measured carefully. Various authors have addressed this concept, from the perspective of different areas, through the creation of dichotomous indexes of transparency, but not measuring the quality of the information. In the present study, we propose a new method to measure the quality and content of municipal information disclosure, avoiding the creation of a synthetic index, highlighting the elements of transparency that provide optimal information, in quality and quantity. After that, we identify differences between local governments with different political ideologies, using multidimensional scaling analysis. The results obtained show that conservative governments grant more importance to transparency indicators, especially regarding legal and institutional information, than progressive ones.

Keywords: • transparency • e-government • multidimensional scaling • index of transparency • local governments

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1 introduction

Following the global economic crisis (also known as the Great Recession) of the late 2000s and early 2010s, the question of transparency rose to greater prominence, with growing demands for public information spurring institutions to enhance and expand their information disclosure (Garrido-Rodríguez et al., 2016).

Different theories defend transparency as a means to increase public accountability: agency theory (Thompson, 1998) or legitimacy theory (Suchman, 1995), among others. In relation to agency theory, it reveals the existence of differences in the interests of public managers with respect to citizens, forcing them to demonstrate their actions to external users of information (Alcaide-Muñoz et al., 2016). These ideas are reinforced by the legitimacy theory, which affirms the information disclosed to citizens is an important factor influencing the legitimacy of the actions carried out by the public entities (Suchman, 1995; Archel, Husillos, Larrinaga, & Spence, 2009).

In this sense, the concept of transparency should be considered from a comprehensive, multidirectional and integrated approach, taking into account the principles of citizen participation (Quinn, 2003). Nevertheless, most previous studies of this question have sought to evaluate the level of transparency by means of a synthetic index based on national or international regulations, or have examined the factors believed to explain the degree of transparency among public administrations.

Although there is no global regulation of transparency, various organisations promote international legislation in this respect (Sáez-Martín et al., 2016) and almost every country in the European Union has published laws and rules on transparency. In Spain, the 2013 Transparency Act stipulated new requirements on disclosure, but provided a period of transition for public institutions, including local governments, to adapt their information systems accordingly.

In this sense, an important question at this point is how transparency should be measured. In this respect, agencies have been created to compile indexes of the degree of transparency achieved. In Spain, one of the most important agencies is Transparency International, which has compiled and published an annual index of municipal transparency (ITA, Spanish initials) since 2008, composed by 80 dichotomous indicators and based on the 110 largest (by population) Spanish local authorities (Guillamón et al., 2011a, b; Albalade, 2013, Alcaide-Muñoz et al., 2016). However, this index has various limitations that restrict its identification of transparency deficiencies (Magdaleno & García-García, 2014).

In consequence, new methods have been proposed to measure transparency (Da Cruz et al., 2015; Sáez-Martín et al., 2016) or to analyse the factors that affect information disclosure (Alcaraz-Quiles et al., 2014a, b; Alcaide-Muñoz et al., 2016; Sáez-Martín et al., 2016). However, most methods developed to measure the degree of transparency have focused on creating a synthetic index, based on dichotomous indicators, despite the drawbacks presented by this type of index (Da Cruz et al., 2015).

We propose an alternative means of measuring transparency, one that overcomes the limitations of previous approaches and obtains an improved evaluation of transparency. This new method is based on two characteristics: *depth* and *breadth*. In this context, breadth refers to the number of indicators; our method employs 20 indicators, within six areas of evaluation, regarding institutional, economic, juridical, contractual, planning and senior official information. Depth, on the other hand, describes the quality of the information disclosed, on a scale ranging from 0-3, according to the content and form of information made available. In the second part of this study, we analyse the results obtained with these indicators, performing multidimensional scaling to achieve a two-dimensional representation of the different items. The aim of this approach is to avoid the information losses suffered by synthetic indicators regarding indicators of transparency, and thus to accurately identify the most significant elements of transparency. Finally, we analyse the importance of these dimensions in relation to the ideological position of the political party governing each municipality.

2 Theoretical framework

2.1 The concept of transparency: measurement and regulation

Numerous definitions of information transparency have been proposed (Matheson, 2002; Kauffmann & Kraay, 2002; Meijer, 2003; Islam, 2004; Da Cruz et al., 2015), but a feature that is common to all is that it involves the timely publication of relevant information on economic, social and political questions, in a way that is accessible to all interested parties.

Perhaps the most complete definition of transparency is that given by Da Cruz et al. (2015), who view it as “the publicity of all the acts of government and its representatives to provide civil society with relevant information in a complete, timely, and easily accessible manner”. These authors consider transparency to be a key factor in accountability (Meijer, 2003) and focus their definition on the online disclosure of information.

In this context, the necessity of information disclosure has been proposed through several theories (Frías-Aceituno et al., 2013; Alcaraz-Quiles et al., 2014 a, b;

Alcaide-Muñoz & Rodríguez-Bolivar, 2015). One of the most relevant theories, in this sense, is the legitimacy theory (Mathews, 1993), which explains the necessity of reducing the gap between the organization's activities and the values accepted by the society, achieving more homogeneous structures. In this sense, the legitimacy of the activities of the governments, as explain Archel et al. (2009) is influenced by the information disclosed to the citizens. Another theory concerning the necessity of transparency is the agency theory, which explains the existence of different interests between the local governments and the citizens, and the disclosure of public information as a way of accountability (Mack & Ryan, 2006).

For the purposes of information disclosure, Internet is a highly suitable medium, providing great accessibility at low cost and enabling information demands to be focused on a single point of supply, from which a rapid response can be obtained (Alcaide-Muñoz et al., 2016). In addition, online information can be readily updated and its presentation adapted to suit different users, thus helping make public administrations more accountable (Mergel, 2013).

Various studies have observed a positive relationship between online information disclosure by municipal governments and the level of public confidence in these governments (Welch, Hinnant & Moon, 2005; Tolbert & Mossberger, 2006; Kim & Lee, 2012). On the other hand, some authors argue that greater governmental transparency might reduce its perceived legitimacy (Grimmelikhuijsen et al., 2013); nevertheless, the public right to information justifies the imposition of transparency via a regulatory approach (Stivers, 2008).

Although no universal regulation exists concerning transparency and access to information, diverse organisations are active in this respect (Guillamón et al., 2011a, b). Convention 205 of the Council of Europe, signed in 2008, and Regulation 1049/2001, which forms part of EU law, are part of the regulatory framework in Europe (Sáez-Martín et al., 2016). Moreover, almost all European countries have approved a national law on transparency, enabling society to participate in public activities to a greater degree and providing a means of informing public opinion about government policies and actions (Garrido-Rodríguez et al., 2016).

In this context, a question of great current concern is that of how local government transparency should be measured. Among the very few studies that have been conducted to address this issue (Da Cruz et al., 2015), Jorge et al. (2011) and Lourenço et al. (2013) proposed a Disclosure Index, with 13 items, and used it to evaluate the online provision of municipal fiscal data by Portuguese and Italian municipalities. Similarly, Piotrowski & Bertelli (2010) measured the transparency of municipalities in New Jersey (USA) by means of an index based on the answers to a 35-question survey. Finally, Da Cruz et al. (2015) developed a transparency

index for Portuguese local government websites, with 76 indicators grouped in seven dimensions. The results obtained were plotted on a map of Portugal, on which each level of transparency was represented by a different colour.

In addition, several authors have studied the factors that affect the level of contents disclosed (Piotrowski & Van Ryzing, 2007; Guillamón, Bastida & Benito, 2011; Albalate, 2013; Sáez-Martín et al., 2016), while others have focused on the disclosure of financial information (Alcaide-Muñoz & Rodríguez-Bolívar, 2015; Alcaide-Muñoz et al., 2016), environmental information (Laswad et al., 2005) or sustainability (Frías-Aceituno et al., 2013; Alcaraz-Quiles et al., 2014a, b). However, little research has been conducted to consider the influence of the ideology of the governing political party in a municipality. This situation is analysed in the present paper, in which the information disclosure preferences of different types of governments are evaluated.

2.2 Transparency in Spain

In December 2013, following many other European countries, the Spanish Parliament approved Act 19/2013 on transparency, access to public information and good governance. This Act provided a transition period of two years during which public administrations, in general, and local governments, in particular, could adapt their online information disclosure to the new legal requirements (Garrido-Rodríguez et al., 2016). In addition, the Spanish regions (or Autonomous Communities) have developed their own regulations, based on the national legislation. So far, twelve of the seventeen Spanish regions have implemented transparency laws. At the local level, each municipality has the power to develop its own rules, complementary to the regional and national ones. However, very few local governments have actually approved any regulations concerning transparency (Garrido-Rodríguez et al., 2016).

Various organisations measure the level of transparency provided by local governments. In Spain, the most representative such organisation is International Transparency Spain, which has created a Local Authority Transparency Index (ITA, Spanish initials). This index, first published in 2008, is composed of 80 dichotomous indicators, divided into six areas, and evaluates the levels of transparency achieved by the 110 largest Spanish municipalities. The ITA instrument is the most widely accepted among Spanish public administrations (Guillamón et al., 2011b; Da Cruz et al., 2015), and several authors have used it to analyse the determinants of municipal transparency (Guillamón et al., 2011a, b; Albalate, 2013; Vicente, Benito & Bastida, 2013).

Other indexes of Spanish local government transparency have also been proposed, but are less widely used. One such is the Dynamic Transparency Index, which

evaluates 145 items divided into six areas. These are defined in a different way from the ITA areas, and the items can be observed dynamically within the website itself. Another index is the “Test of Local Authority Implementation of the Transparency Act”, developed by the Business Economics Department at the University Rey Juan Carlos. This index describes the facility of access to information, based on the number of clicks required (Garrido-Rodríguez et al., 2016). Finally, the Laboratory of Journalism and Communication for Plural Citizenship at the Autonomous University of Barcelona, in collaboration with researchers from another eight universities, has developed the “Infoparticipa map”, based on an analysis of 41 indicators, divided into four different areas. The results obtained are overlain on a map of Spain, and a separate colour is assigned to each of the four ranges of transparency scores (Garrido-Rodríguez et al., 2016).

2.3 Limitations of current systems for measuring transparency

In our opinion, the indexes currently used to measure transparency present several limitations. First, the majority are based on dichotomous indicators, and so the characteristics of the content disclosed online cannot be analysed (Magdaleno & García-García, 2014; Garrido-Rodríguez et al., 2016). Second, they are obtained from surveys of municipalities, which can give rise to problems of self-selection of responses and of positive bias thus induced (Da Cruz et al., 2015). Third, in the case of indexes such as ITA, municipalities have prior knowledge of the items included for evaluation, and so public managers may emphasise or minimise aspects of the information disclosed, to their own advantage (Magdaleno & García-García, 2014). To overcome or at least reduce these limitations, we propose a new analysis method, as explained in the next section.

3 Methodological proposal and sample

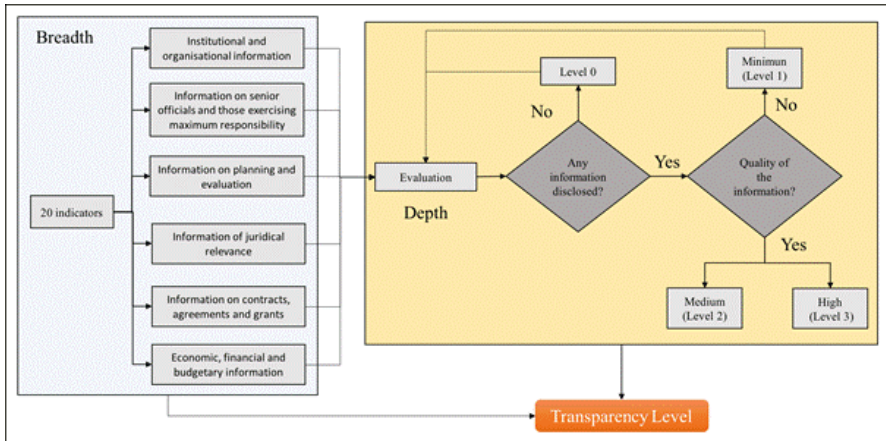
After reviewing the situation of transparency in Spain, in this section, it is presented the new methodology to obtain the level of transparency of the local governments. After that, the empirical analysis method is explained. Finally, the sources and collection of the data is explained.

3.1 Transparency analysis indicators

This study presents a new set of indicators with which to measure transparency, following the method proposed by Garrido-Rodríguez et al. (2016), developed in collaboration with the Andalusian Chamber of Accounts and the Foundation for Andalusian Studies. It is based on the stipulations made in Act 19/2013, and seeks to minimise the limitations observed in the currently-used benchmark index of transparency (ITA). As can be observed in Figure 1, the main aim of the new approach is to evaluate the information published online by Spanish

municipalities, taking into account the provisions of Act 19/2013, and developing two aspects not considered previously: the use of specific indicators to measure every point addressed within the overall goal of transparency, i.e., *Breadth*; and consideration of the quality of the content disclosed, i.e., *Depth*.

Figure 1: Flowchart of Transparency methodological proposal



Source: The authors

In this approach, Breadth is viewed as the number of indicators that make up the index, and how they are distributed. The index contains a total of 20 indicators, within the following six areas of evaluation:

- Institutional and organisational information (IOI). Five indicators that evaluate information about municipal functions, organisational structure and inventoried goods.
- Information on senior officials and those exercising maximum responsibility (ISOTEMR): Two indicators to evaluate the information published on senior officials, regarding questions such as remuneration, compensation and complementary activities.
- Information on planning and evaluation (IPE): The information published about municipal plans and programmes, and ways of controlling and evaluating these actions, measured by two indicators.
- Information of juridical relevance (IJR): This category contains five indicators to measure information about the regulations created and applied by the municipality, the reports and analyses related to these regulations and the period stipulated for their public display.
- Information on contracts, agreements and grants (ICAG): Four indicators to evaluate the information published on contracts, grants and other agreements with external entities.

- f. Economic, financial and budgetary information (EFBI): Two indicators on the information concerning public budgets and annual accounts.

Depth, the second dimension of the proposed index, concerns the quantity and quality of the information provided with respect to each indicator; this approach contrasts with that of other methods, which mainly use dichotomous indicators. Thus, each indicator is assigned a structure for evaluation of compliance with the minimum requirements of Act 19/2013, and of the degree of disclosure of information. This dimension is scored as follows: zero points are awarded if the municipality does not fulfil any requirements of the indicator; partial compliance is scored as 1 or 2, and the maximum of 3 points is awarded for total compliance with the requirements, i.e., the maximum level of disclosure. Furthermore, each value is associated with an identifying colour, following a “traffic light” evaluation system (Breul, 2007), in which purple represents a score of zero, red is 1, yellow is 2 and green is 3.

3.2 Political sign and transparency. The application of multidimensional scaling analysis to Spanish municipalities.

As observed above, several studies have been conducted to determine the factors that best explain the extent of the information contents provided on municipal websites (Guillamón, Bastida & Benito, 2011; Alcaide-Muñoz & Rodríguez-Bolívar, 2015; Sáez-Martín et al., 2016). However, very few have examined the influence of the political sign of the local government and its relation with the level of online information transparency.

Obviously, the ideology of the governing party in a municipality will influence its policies and activities (García-Sánchez et al., 2013), and this influence may extend to the way in which public information is disclosed (Serrano-Cinca et al., 2009). Previous studies have shown that conservative governments, in general, are more likely to disclose information about economic aspects, while progressive ones tend to grant more importance to aspects concerning public participation in municipal affairs (Ni & Bretschneider, 2007). In addition, some authors have concluded that progressive governments often disclose a greater quantity of information than conservative ones (Albaladejo 2013; García-Sánchez et al., 2013), although others do not believe this factor to be significant (Sáez-Martín et al., 2016).

In our approach, the similarities and differences among indicators according to the progressive or conservative ideology of the party governing the municipality are examined by means of multidimensional scaling (MS) analysis, by which the structure of a set of objects is considered within a multidimensional space. Our goal in this process is to build a metric space with the fewest possible dimensions (in this case, two), in order to represent proximities or similarities with the highest

possible degree of fidelity (or fit). The main attraction of this method is that it provides a graphic visualisation of the results obtained, which facilitates their comprehension and interpretation (Kruskal, 1964).

Of the various modes of MS analysis that can be applied, we chose two: ALSCAL (Takane, Young & Leeuw, 1977), to measure improvements in the information disclosed, and PROXSCAL, to obtain the differences among indicators according to whether the political ideology of the municipal government is conservative or progressive.

3.3 Sample selection

The above-described approach was applied to data for the 110 largest Spanish municipalities (by population), of which 28 (25.45%) had a progressive government and 82 (74.55%), a conservative one. The same municipalities are evaluated by the ITA index, taking into account that municipalities with a larger population have specialist personnel and a larger budget to perform information disclosure (Navarro et al., 2010).

The information needed to determine the indicators was obtained from the corresponding transparency portals or, if these were not available, from the general websites of the municipalities. The evaluation was performed during March and April 2016; this period was chosen because the municipalities had had a period of two years to adapt their information disclosure policies in line with the provisions of the Transparency Act, and this period concluded in December 2015.

Once the necessary results were obtained, SPSS software was used to perform the MS analysis to determine the differences in information disclosure between conservative and progressive municipal governments.

4 Results

4.1 Evaluation of transparency indicators

After evaluating the 110 Spanish municipalities of our sample, Table 1 shows the average results in relation to Breadth and Depth.

Table 1: Average Breadth and Depth of the sample

	Breadth	Depth	
		Medium	High
Average number of indicators	14.5	9.5	3.7

Source: The authors

On the one hand, Breadth has been measured as the number of indicators with score, which means the municipality has disclosed a minimum information related to the indicator, or, in terms of our methodological proposal, it represents the number of indicators with level 1 or higher. As can be observed, the average breadth of 14.5 out of 20 indicators.

On the other hand, Depth has been interpreted as the number of indicators with more information than the minimum. In other words, it is the number of indicators with level 2, representing a medium depth, or level 3, which is considered high depth. In this sense, an average of 9.5 indicators reach a medium depth, and an average of 3.7 indicators a high depth.

In terms of information disclosed, these results show that the municipalities of the sample publish a wide range of public information with a medium depth, but they don't disclose all the information available in relation to the different areas.

In addition, Table 2 shows the results obtained for each indicator of our sample. In general, all these municipalities present additional information in their web portals regarding their actions. In general, there is a high level of transparency regarding municipal regulations, the guidelines and decisions arising from plenary sessions, and the publication of budgets. The latter element enjoys a high level of transparency because the disclosure of budget information is regulated by the Spanish Local Government Act (Legislative Royal Decree 2/2004).

Table 2: Average results for each indicator

	Mean	Std. Dev.
IOI 1: Additional information	3.00	0.00
IOI 2: Functions	2.65	0.94
IOI 3: Application rules	2.93	0.44
IOI 4: Organisational structure	2.26	1.03
IOI 5: Inventory of goods	1.89	0.73
ISOTEMR 1: Remuneration	0.65	1.18
ISOTEMR 2: Declarations of assets and activities	2.37	1.23
IPE 1: Plans and programmes	2.05	0.77
IPE 2: Accomplishment and service quality	1.28	0.89
IJR 1: Guidelines and decisions	2.92	0.49
IJR 2: Response to inquiries	1.34	1.50
IJR 3: Draft regulations, public notice of	0.67	1.25
IJR 4: Opinions of advisory organisations	0.11	0.56
IJR 5: Documents published for public information	1.88	1.46
ICAG 1: Information about contracts	2.00	0.38
ICAG 2: Information about decisions	1.99	0.99
ICAG 3: Information about management commitments	0.33	0.87
ICAG 4: Information about grants	1.69	1.03
EFBI 1: Budgets	2.89	0.39
EFBI 2: Annual accounts	2.30	1.03

Source: The authors.

A moderate-high degree of transparency was recorded for information concerning municipal functions, the organisational structure, the assets and activities of senior officials, municipal plans and programmes, contracts and the annual accounts. Overall, these local authorities comply with the provisions of the Transparency Act, but there remains a margin of improvement to make this information more transparent and accessible.

By contrast, the information related to inventories of goods, to plans and programmes in this respect, reports of accomplishment and service quality, responses to inquiries, documents publicised during a limited period of public information, and the details of contracts, agreements and grants reflected a low-

moderate degree of transparency. In other words, the information provided in these respects fulfils the minimum requirements but adds very little extra, and so there remains considerable scope for improvement regarding full compliance with the Transparency Act.

Overall, the information disclosed on the remuneration of senior officials, and on proposed regulations, the opinions of advisory organisations and management commitments, is insufficient under the Transparency Act.

4.2 Development of transparency dimensions through multidimensional scaling analysis

Three different models were built to measure the differences among the indicators when the information disclosed reached each level of transparency. The first model measured the transition from level 0 to level 1, the second measured the transition from level 1 to level 2 and the third measured the transition from level 2 to level 3. The extensions D1, D2 and D3, for models 1, 2 and 3, respectively, were added to each indicator to express these transitions.

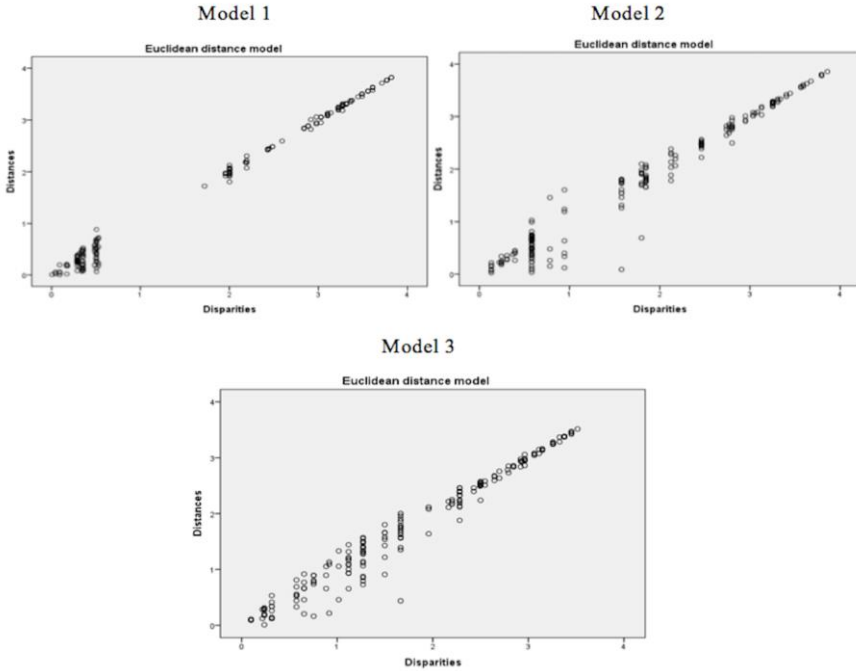
For the ALSCAL analysis, three models were designed, one for each level of information disclosed. The following measures of stress and the R-squared correlation (RSQ) were obtained for each model:

- Model 1: Stress= 0.0524; RSQ= 0.9937.
- Model 2: Stress= 0.11475; RSQ= 0.95967.
- Model 3: Stress= 0.09472; RSQ= 0.96513.

Following Kruskal (1964), a Stress value of about 0.1 reflects an acceptable degree of fit, and a value of ≤ 0.05 , a good one. In our analysis, all three models achieved an acceptable fit. RSQ measures the proportion of variability of the starting data that is explained by the model. The possible values range from 0 to 1; the closer to 1, the better the fit of the model. In this respect, all three models achieved a good fit.

Another measure of the appropriateness of these models is to examine whether the data fit a linear representation. If they do, the models have a good degree of fit. Figure 2 shows the linear representation of each model. All three present a linear tendency, and so they are considered to provide a good fit.

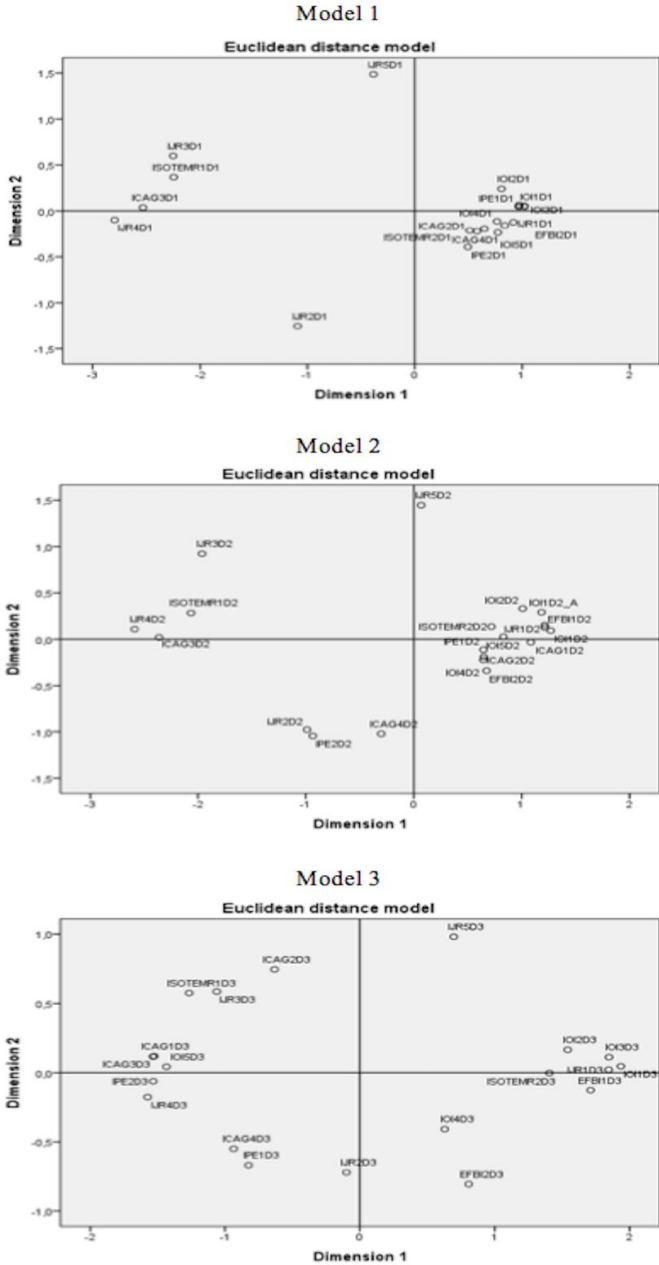
Figure 2: Scatterplot of linear fit



Source: The authors

The results of the ALSCAL analysis are shown in Figure 3, which represents the indicators in two dimensions: Dimension 1: *Management Information* and Dimension 2: *Legislative Information*. Dimension 1 contains information about the management performance of the municipal government, in areas such as its functions, budgets, application rules and the declaration of the activities of senior officials, while Dimension 2 focuses on the development of municipal regulations, and on the decisions taken.

Figure 3: Derived stimulus configuration



Source: The authors

In Model 1, most of the indicators are included in “Management Information”, and are given similar degrees of importance. Thus, in order to comply with regulatory requirements, managers disclose the information required about municipal activities, with particular emphasis on economic and organisational information for “Management Information” and on the documents published for statutory information purposes, for “Legislative Information”. Model 2 maintains the same structure; thus, to increase the level of information disclosed, municipalities prefer to enhance pre-existing actions rather than address other factors. Model 3 reflects a change in the structure, with the addition of normative aspects and of information regarding senior officials.

After completing the general ALSCAL analysis, a new one, PROXSCAL, was undertaken, to consider the influence of the ideology of the political party governing the municipality.

The goodness of fit of the models was confirmed by analysing the Stress and RSQ indicators. Tables 3 and 4 show the results of these analyses for conservative and progressive governments, respectively.

Table 3: Stress and RSQ measures for conservative governments

	Model 1	Model 2	Model 3
Stress	0.06270	0.11313	0.09657
RSQ	0.98989	0.95920	0.96384

Source: The authors

For the conservative governments, the Stress measures indicate an acceptable fit for Models 1 and 3, but for Model 2 the coefficient is slightly above 0.1. This value can be considered acceptable, but it is poorer than in the other cases. In contrast, all of the RSQ measures are very high and very close to 1, which indicates a good fit for each of the models.

Table 4: Stress and RSQ measures for progressive governments

	Model 1	Model 2	Model 3
Stress	0.06475	0.12643	0.11832
RSQ	0.99112	0.94645	0.94071

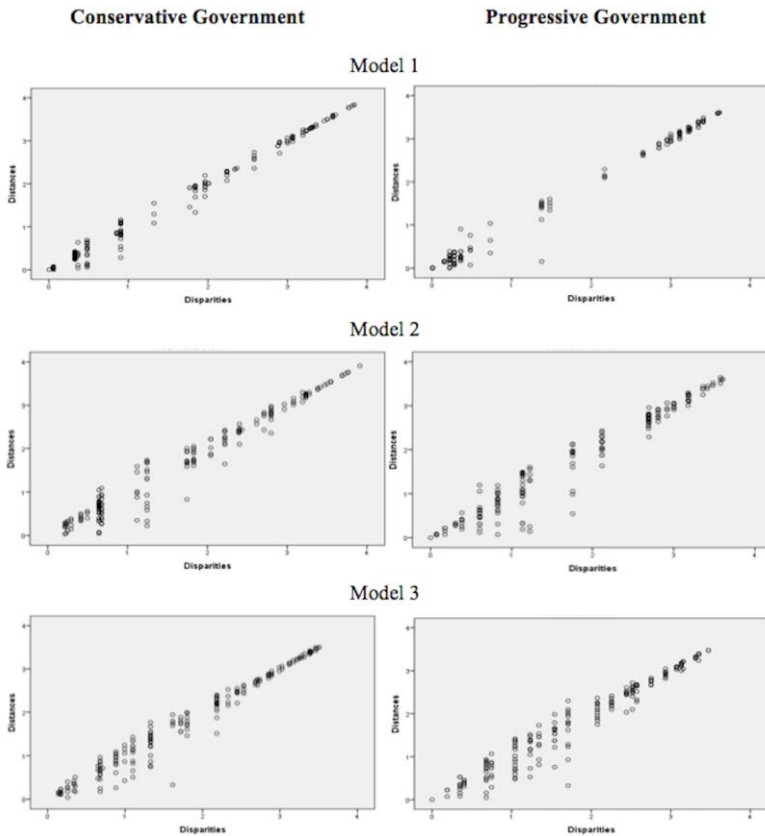
Source: The authors

For progressive governments, the Stress measure for Model 1 is below 0.1, while for Models 2 and 3 it is above 0.1. In general terms, these measures could be

considered acceptable, especially taking into account the RSQ measures, which show a good level of fit.

The degree of fit of the different models is represented graphically in Figure 4, with a linear representation of each model, differentiated by political ideology. As can be observed, Model 1, for both ideologies, and Model 3, for conservative governments – in other words, the models presenting acceptable measures of Stress, with values below 0.1 – fit the linear representation perfectly. On the other hand, Model 2, for both ideologies, and Model 3, for progressive governments – i.e., the models with a Stress measure exceeding 0.1 – the representations approximate a straight line, and therefore the models are considered appropriate.

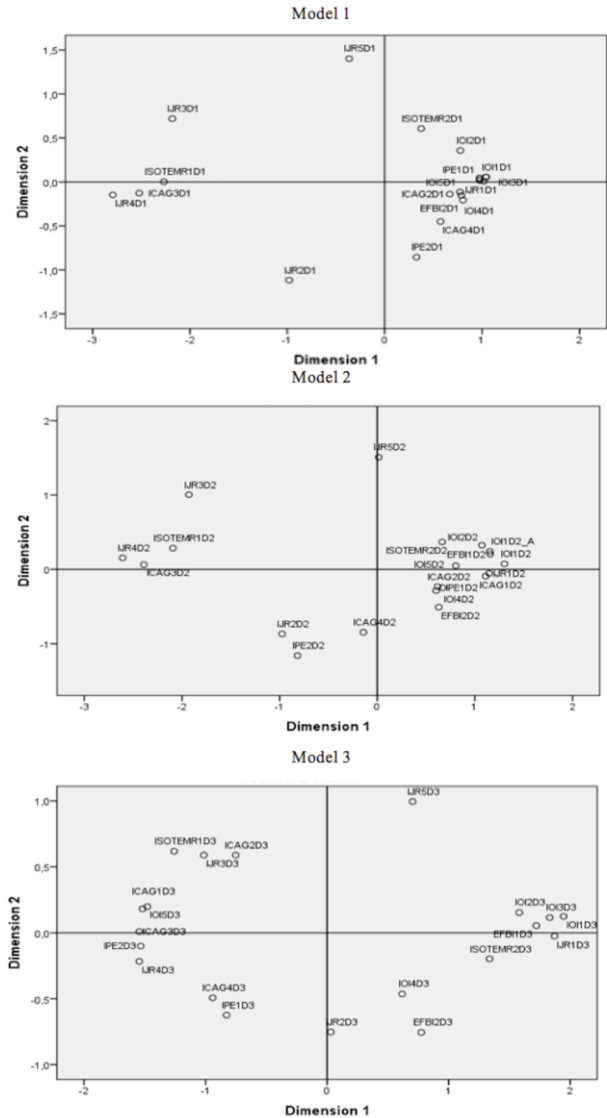
Figure 4: Scatterplot of linear fit, by political ideology



Source: The authors

From this study of the models, we conclude that they present a good degree of fit. Figures 5 and 6 represent the configurations of the different transparency indicators, classified by ideological position and by model.

Figure 5: Derived stimulus configuration, conservative governments

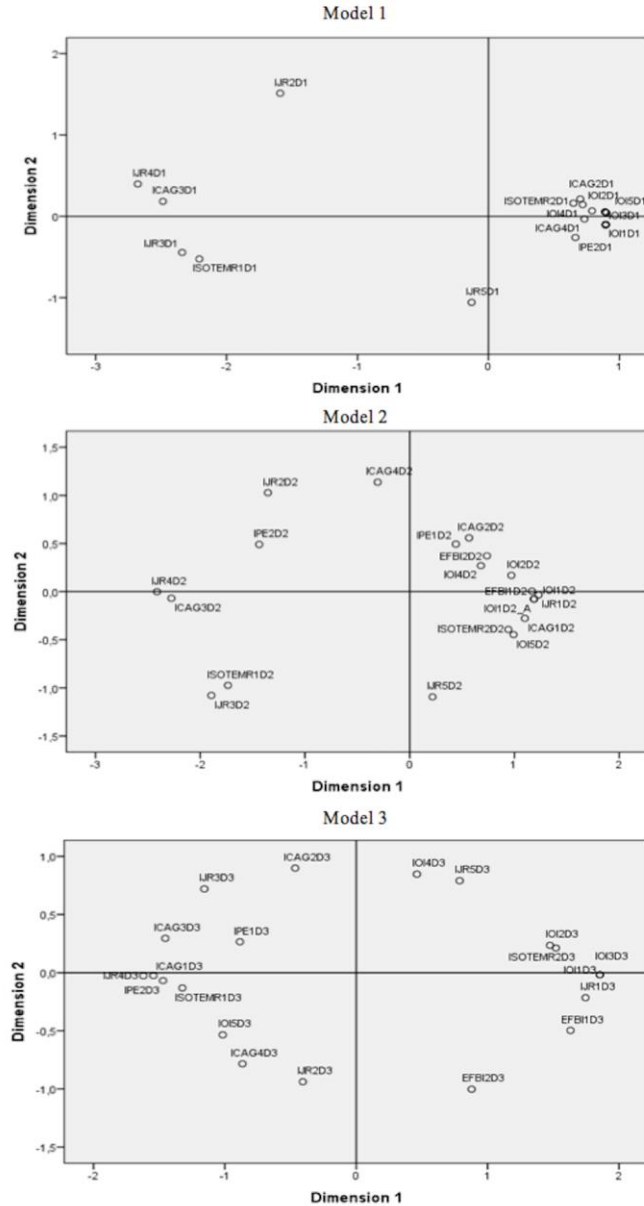


Source: The authors

According to the results shown in Figure 5, the principal elements taken into consideration by conservative governments would be:

- In “Management Information”, for Model 1, items concerning institutional information, together with information about plans and programmes. For Model 2, economic information, and the disclosure of guidelines and agreements. For Model 3, all of these elements.
- In “Legislative Information”, for Model 1, items concerning new regulations and documents published for statutory information purposes. Model 2 has the same structure. By contrast, in Model 3 greater emphasis is placed on information about contracts, agreements and senior officials.

Figure 6: Derived stimulus configuration, progressive governments



Source: The authors

The results presented in Figure 6 show that, for “Management Information”, the most important contents for progressive governments, following Model 1, concern institutional information, while conservative governments incorporate information about budgets, guidelines and contracts in Model 2, together with declarations of the assets and activities of senior officials in Model 3. For “Legislative Information”, the effectiveness of response to inquiries is the most important element in Model 1, while information about grants and the evaluation of plans is of greater importance in Model 2. In Model 3, regulatory information is highlighted. Nevertheless, in all cases the weights of these elements are lower, such that more importance is granted to the items in “Management Information”. To complete our analysis, three further PROXSCAL analyses were conducted, to determine the importance of the dimensions related to the political ideology of each municipal government. The first measure taken into account was the goodness of fit for each model, i.e., the S-Stress indicator (see Table 5).

Table 5: Measures of Stress and Fit

		Model 1	Model 2	Model 3
Normalised	Raw	0.04532	0.05670	0.04873
Stress				
Stress-I		0.21288 ^a	0.23813 ^c	0.22075 ^e
Stress-II		0.39233 ^a	0.49372 ^c	0.46803 ^e
S-Stress		0.08145 ^b	0.08885 ^d	0.08546 ^f
Dispersion				
Accounted	For	0.95468	0.94330	0.95127
(D.A.F.)				
Tucker's		0.97708	0.97123	0.97533
coefficient	of			
congruence				

a. Optimal scaling factor = 1.047. c. Optimal scaling factor = 1.060. e. Optimal scaling factor = 1.051.
 b. Optimal scaling factor = 0.951. d. Optimal scaling factor = 0.937. f. Optimal scaling factor = 0.946.

Source: The authors

In all models, the S-Stress indicator was below 0.1, and therefore, following Kruskal (1976), we conclude that all three models provide an acceptable degree of fit.

Having determined the validity of the models, the next step in our analysis was to examine the transparency indicators that comprise each dimension of analysis (see Table 6 and Figure 7). The results obtained in this respect reveal changes in the

indicators that represent each dimension, between Models 1 and 2 and also between Models 2 and 3.

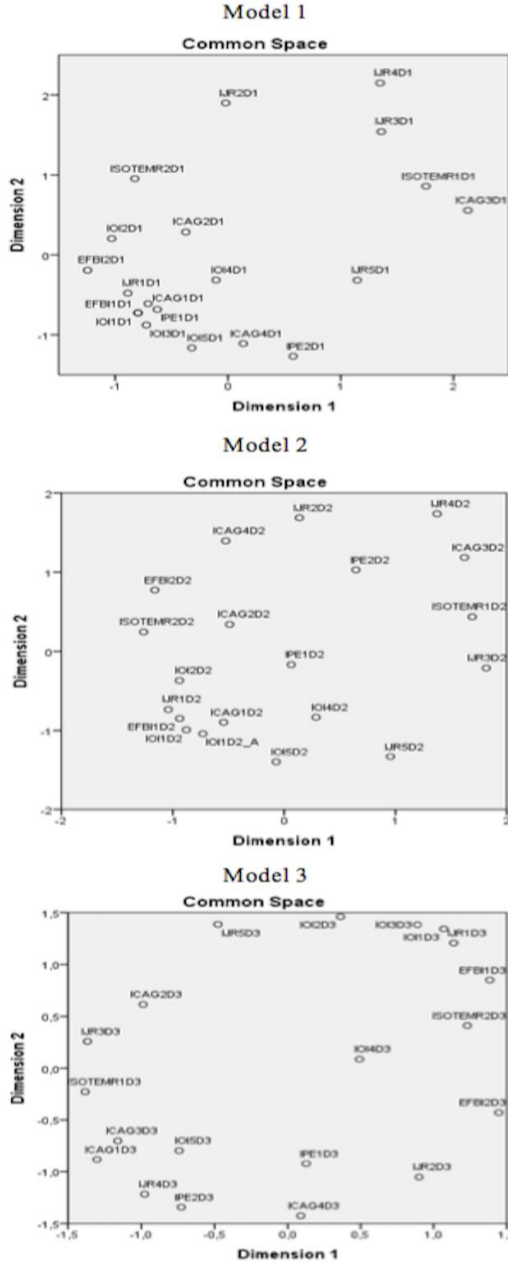
Table 6: Final Coordinates

Model 1	Dim. 1	Dim. 2	Model 2	Dim. 1	Dim. 2	Model 3	Dim. 1	Dim. 2
IOI1D1	-0.798	-0.724	IOI1D2	-0.878	-0.991	IOI1D3	1.069	1.343
IOI2D1	-1.031	0.205	IOI2D2	-0.941	-0.370	IOI2D3	0.363	1.460
IOI3D1	-0.723	-0.876	IOI1D2	-0.730	-1.041	IOI3D3	0.888	1.383
IOI4D1	-0.105	-0.314	IOI4D2	0.286	-0.833	IOI4D3	0.492	0.088
IOI5D1	-0.320	-1.164	IOI5D2	-0.072	-1.400	IOI5D3	-0.741	-0.796
ISOTEMR1D1	1.757	0.859	ISOTEMR1D2	1.689	0.435	ISOTEMR1D3	-1.383	-0.229
ISOTEMR2D1	-0.825	0.954	ISOTEMR2D2	-1.263	0.245	ISOTEMR2D3	1.230	0.411
IPE1D1	-0.627	-0.681	IPE1D2	0.064	-0.169	IPE1D3	0.126	-0.923
IPE2D1	0.579	-1.267	IPE2D2	0.645	1.028	IPE2D3	-0.727	-1.343
IJR1D1	-0.887	-0.478	IJR1D2	-1.041	-0.735	IJR1D3	1.137	1.207
IJR2D1	-0.020	1.900	IJR2D2	0.137	1.687	IJR2D3	0.900	-1.054
IJR3D1	1.361	1.541	IJR3D2	1.815	-0.213	IJR3D3	-1.367	0.259
IJR4D1	1.350	2.151	IJR4D2	1.373	1.737	IJR4D3	-0.977	-1.218
IJR5D1	1.147	-0.316	IJR5D2	0.954	-1.331	IJR5D3	-0.477	1.386
ICAG1D1	-0.709	-0.609	ICAG1D2	-0.544	-0.897	ICAG1D3	-1.302	-0.883
ICAG2D1	-0.373	0.287	ICAG2D2	-0.490	0.341	ICAG2D3	-0.988	0.615
ICAG3D1	2.132	0.557	ICAG3D2	1.619	1.185	ICAG3D3	-1.160	-0.702
ICAG4D1	0.135	-1.109	ICAG4D2	-0.524	1.395	ICAG4D3	0.088	-1.426
EFBI1D1	-0.798	-0.724	EFBI1D2	-0.938	-0.848	EFBI1D3	1.383	0.851
EFBI2D1	-1.244	-0.191	EFBI2D2	-1.162	0.774	EFBI2D3	1.445	-0.430

Source: The authors

In relation to “Management Information”, the most important items of information concern the remuneration of senior officials, management commitments and aspects of juridical significance, which are all maintained in Model 2. In Model 3, the juridical aspects are of less prominence, and economic and institutional information comes to the fore.

Figure 7: Graphic representation of the coordinates



Source: The authors

In contrast, “Legislative Information”, in Model 1, is mainly comprised of juridical issues, planning and the assets and activities of senior officials. In Model 2, items concerning annual accounts, grants and management commitments are of greater significance, while in Model 3, there is a major increase in the quantity of organisational information, while juridical information loses weight.

Having analysed both of these dimensions – legislative and management information – it is now necessary to consider the importance granted to each one according to whether the governing political party is of a conservative or a progressive nature. This consideration is reflected in Table 7 and Figure 8.

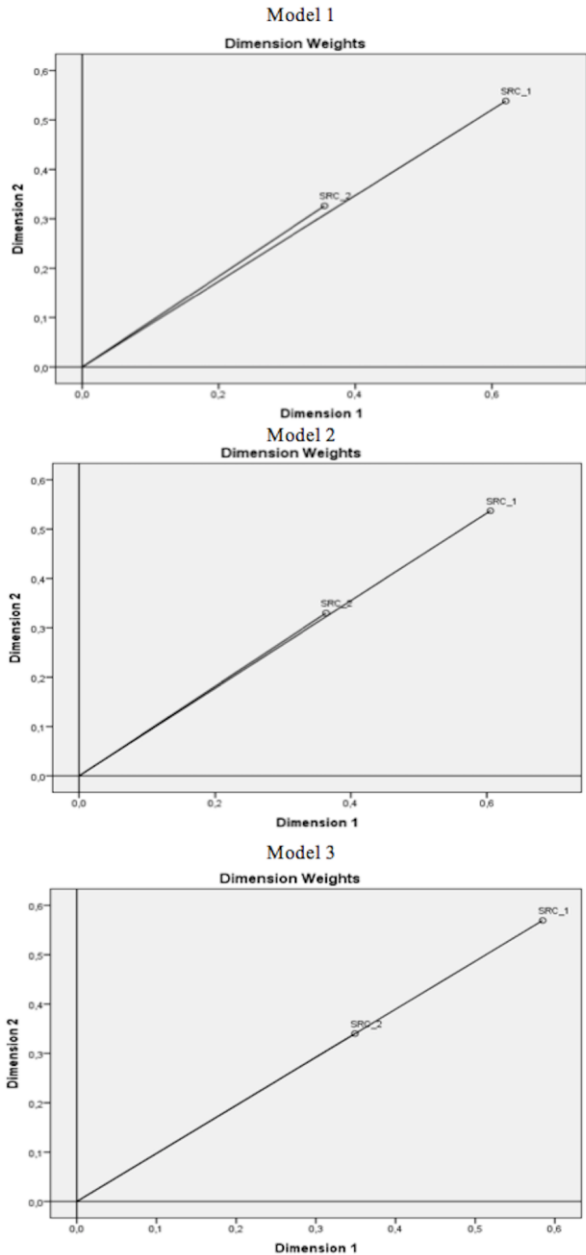
Table 7: Weighting of the Dimensions

Source	Model 1		Model 2		Model 3	
	Dim. 1	Dim. 2	Dim. 1	Dim. 2	Dim. 1	Dim. 2
SRC_1: Conservative	0.620	0.538	0.605	0.537	0.585	0.569
SRC_2: Progressive	0.355	0.326	0.364	0.330	0.349	0.340

Source: The authors

As can be observed, in general, progressive governments grant similar importance to both dimensions in their online information disclosure, although they consider it more important to provide a moderate degree of information (Model 2) than a higher level (Model 3).

Figure 8: Graphic representation of the dimension weights



Source: The authors

Conservative governments also grant a similar level of importance to both dimensions, with particular emphasis on “Management Information” in all cases. However, governments with this ideology grant twice as much importance as progressive ones to “Management Information”. This is also the case, though to a lesser degree, for “Legislative Information”. These results contradict those obtained in previous studies, according to which conservative governments are less concerned about transparency and the disclosure of the public information, or otherwise concluded that the question of information disclosure was unaffected by the ideology of the governing party.

5 Conclusions

In recent years, transparency has come to be a key instrument in the disclosure of public information and in enhancing the accountability of public administrations. In order to achieve these goals, new methods must be sought with which to measure the transparency of the information disclosed online by public administrations (Da Cruz et al., 2015). Local governments are the organisations most directly involved in this process, as they constitute the closest level of government to society.

In this context, rather than deriving a synthetic index with which to measure the degree of transparency – an approach which would not enable us to analyse the significance of its constituent elements – this paper presents a new method for determining the quality of the public information provided by municipal governments, and the way in which this is done. Our method, which alleviates some limitations found in other indexes, is based on one proposed by Garrido Rodríguez et al. (2016), in collaboration with the Andalusian Chamber of Accounts and the Foundation for Andalusian Studies.

This proposed method takes into consideration two characteristics: Breadth and Depth. In relation to Breadth, the method considers 20 indicators, grouped into six areas, to evaluate compliance with the different requirements of the Spanish Transparency Act. As regards Depth, we assess the degree of compliance by municipal governments with the Transparency Act on a scale ranging from 0 to 3. In addition, a “traffic lights” evaluation system is applied to identify the different ranges of transparency.

In this study, we evaluated the web portals of the 110 largest Spanish municipalities. The results obtained show that, in general, municipalities disclose a wide range of public information, but the level of depth is not as high as could be desirable. Focusing in the analysis of the different areas, in general, municipalities are more transparent regarding budgetary information -following

the results of Alcaide-Muñoz & Rodríguez-Bolívar (2015)-, guidelines and decisions arising from plenary sessions, and regulatory information.

In addition to the above, in order to reduce the measures obtained and thus simplify the analysis procedure, and following Kruskal (1964), two multidimensional scaling analyses were conducted: ALSCAL and PROXSCAL. These analyses were applied to three different models, one for each level of transparency. This process obtained two dimensions of evaluation, termed “Management Information” and “Legislative Information”. Having obtained these dimensions, we then analysed the influence of the political ideology of the governing party in each municipality. The PROXSCAL analyses show that both dimensions are of similar importance for all the municipalities, but that conservative governments grant twice as much importance to the information disclosed, in comparison with progressive administrations.

In conclusion, transparency and the instruments with which it is measured form part of a dynamic process that must be evaluated continuously, as the information disclosed by municipalities increases over time. Therefore, the development of transparency must be regularly evaluated, in order to determine the evolution of the information disclosure provided online by municipal governments.

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