

Article

Comparative Approach to Municipal Transparency: Which Index Best Assesses Compliance in Spain?

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Abstract: Transparency in public entities has been an issue that has attracted great attention from academics in recent years, and on which there has been a significant regulatory effort, both internationally and in the national legislations of the different countries. Given the diversity of proposed transparency measurement indices for public entities in the previous literature, it could be understood that research in this field has so far not provided fully satisfactory results to measure, evaluate, and compare transparency practices in the entities. This would justify the need to continue investigating in this field, taking as a reference the active disclosure obligations set out in the legislation. The objective of this work focuses on the evaluation of the transparency of Spanish local authorities with a population of more than 175,000 inhabitants, using a Transparency Index constructed from the items included in the standardised programme of the Spanish Court of Audit, and its comparison with the results achieved using the Bidimensional Transparency Index (BTI). It can be concluded that different methodologies from various regulators lead to distinct evaluations, as demonstrated by the application of the Li test in this study. The main contribution of this paper is the proposal of an index that provides a summary measure of the level of compliance with all the aspects that the Court of Audit considers fundamental in relation to compliance with the LTAIBG with respect to the obligation of active publicity of local entities. This index would make it possible to complement with a “summary” score the content of the audit reports of the CoA, which would provide a clearer view of the level of compliance of local entities, as well as a comparison with other comparable entities in terms of size, thus favouring “competition” among them, which could lead to an improvement in the levels of compliance with the active disclosure obligations established in the law.



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1. Introduction

Transparency in public bodies is a complex concept, and multiple definitions of it have been provided, emphasising different aspects [1–4]. Transparency is not simply about providing information but about facilitating a clear understanding of government processes and organisational structures and providing insight to someone who is not involved in government, thus overcoming the asymmetry of information between government and citizen [5]. Transparency is intrinsically linked to accountability and is seen as a cornerstone of good governance [6,7]. The World Bank defines governance as “the way in which power is exercised in the management of a country’s economic and social resources for

development". There has been significant concern about the declining level of trust in government and the detrimental effects this has on government and societal cohesion [8,9]. In this international context, researchers have sought to identify the factors that facilitate or promote this behaviour to design and implement dissuasive measures [9]. Greater trust will equate to better governance [8]. According to the World Bank, transparency is not a sufficient condition for controlling corruption, but it is a necessary condition in most cases [10].

In this sense, open data in public administrations have established as a fundamental concept in the efforts to increase transparency and accountability in the use of information. Since 2010, open data have begun to be associated with broader reforms related to open government [11], which has in turn linked this practice to transformations in public management [12].

Transparency is conducive to the efficient allocation of resources [13] and is theoretically associated with improved performance and greater efficiency of public services [14]. Transparency in public entities is closely linked to the achievement of the Sustainable Development Goals (SDGs).

This is an issue that has been widely discussed in the literature in recent years. According to [15], in the context of sustainable governance, transparency practices on sustainability can improve the effectiveness, efficiency, and accountability of public entities. Governments, particularly local governments, play an essential role in the achievement of the SDGs, given their deep understanding of citizens' needs and their ability to identify the actions needed to implement the SDGs through their policies. In acting as enablers of the SDGs, it is reasonable to assume that a more transparent government will be better positioned to achieve these goals [14,16].

Due to the above, transparency in public entities has been an issue that has attracted great attention from academics in recent years, and on which there has been a significant regulatory effort, both internationally and in the national legislations of the different countries. In the case of Spain, it was the entry of Law 19/2013, of 9 December, on Transparency, Access to Public Information and Good Governance (hereinafter, LTAIBG), which obliges public bodies to provide the information necessary to enable their actions to be judged. Subsequently, regulations emerged at the level of both autonomous communities and local government. All these provisions incorporate a series of active disclosure obligations that the different public bodies must comply with [17].

Given the importance of the concept of transparency in the public sphere, there have been numerous attempts to measure it through the development of various indices. At the local level, in Spain, there are organisations that have developed indices to evaluate the degree of transparency, the most recognised of which is the non-governmental organisation Transparency International Spain, a subsidiary of Transparency International. Since 2008, this organisation has been producing the annual Municipal Transparency Index (ITA) for the 110 most populated municipalities in Spain [16]. Other indices can also be mentioned, such as the Infoparticipa Map, one of the most relevant, or the DYNTRA. Others have also been proposed, in order to overcome the limitations presented by the previous ones, such as the Bidimensional Transparency Index (BTI), which considers two dimensions in the information provided by local entities, breadth and depth, which would allow for analysing the quantity and quality of such information [18].

Considering the diversity of proposed transparency measurement indices, it could be understood that research in this field has so far not provided fully satisfactory results to measure, evaluate, and compare transparency practices in the entities, and to investigate the determinants of the success of their transparency initiatives [19]. This would justify the need to continue searching for an index that achieves an adequate measurement of the

level of transparency achieved by local entities, taking as a reference the active disclosure obligations set out in the legislation.

This work focuses on the evaluation of the transparency of Spanish local authorities with a population of more than 175,000 inhabitants, using a Transparency Index constructed from the items included in the standardised programme of the Spanish Court of Audit (hereinafter, the CoA), established in the Guide for the Audit of the Principle of Transparency [20] approved by this body in January 2024 in the exercise of the functions attributed to it by Organic Law 2/1982, of 12 May, on the Court of Audit, in article 9.1, in order to subsequently compare this index and the results obtained with the two-dimensional Transparency Index (BTI) [18].

The aim of the aforementioned guide is to provide tools to determine which aspects of the LTAIBG must be audited and what checks and tests must be carried out to verify compliance with the transparency obligations of the entities. The application of a standardised work programme, in addition to systematising and standardising the analysis of such compliance, enables the CoA to issue annual reports on compliance with transparency by the audited entities. As indicated in the guide, the audit report reflects the incidents detected, the conclusions, including, where appropriate, the good practices observed, and the recommendations. It is also indicated that no general assessments or overall quantitative aspects of compliance with transparency will be included, actions that are already carried out by the Council for Transparency and Good Governance [21].

The main contribution of this work is the proposal of an index that provides a summary measure of the level of compliance with all the aspects that the Court of Audit considers fundamental in relation to compliance with the LTAIBG with respect to the obligation of active publicity of local entities. This index would make it possible to complement with a “summary” score the content of the audit reports of the CoA, which would provide a clearer view of the level of compliance of local entities, as well as a comparison with other comparable entities in terms of size, thus favouring “competition” among them, which could lead to an improvement in the levels of compliance with the active disclosure obligations established in the law [19]. This paper is aimed at information users who are interested in the actions carried out by the CoA and the External Control Bodies (OCEX), showing how transparency is measured by two bodies with auditing powers in relation to the principle of transparency.

The rest of this article is structured as follows: First, a review of the literature on the concept of transparency and its measurement will be presented, focusing mainly on the local public sector. Next, the methodology used will be described, and reference will be made to the results obtained when applying it. Finally, the conclusions reached will be offered, and possible limitations and future lines of action proposed to overcome them will be highlighted.

2. Literature Review

Transparency in public entities is a complex concept widely discussed in the academic literature, and there are several articles that analyse and systematise the work around it [6,22]. Multiple definitions of transparency have been provided, emphasising different aspects of this concept. Some emphasise issues such as the availability of information on the operations and decision-making processes of public entities, which allow external agents to have insight into the performance of the entities; others highlight aspects such as timeliness, user-friendliness, and ease of access to information by citizens, or introduce nuances such as the need for active participation in the distribution of information [2,23].

Transparency is not simply about providing information but about facilitating a clear understanding of government processes and organisational structures and creating a

vision for someone who is not involved in government, making it possible to overcome this discrepancy in information [6]. Several studies point out that in order to generate impact, transparency must be of high quality, complete, accessible, easily usable, up-to-date, and comparable so that it helps to improve the interaction between citizens and government [24,25]. In this line is the definition of transparency provided in [26]: “the online publicity of all the acts of government and their representatives to provide civil society with relevant information in a complete, timely, and accessible manner”. This is congruent with the fact that the process of the modernisation of public administration, widely referred to as e-government, has allowed, among other issues, greater accessibility to information and greater transparency [27].

Currently, open data portals act as key interfaces to promote transparency [28]. In recent years, several studies have highlighted that the publication of open government data (OGD) on these portals has a positive impact on processes that promote transparency, particularly in areas prone to problems such as corruption, waste of resources, and inefficiency [29–31]. OGD portals have emerged as flagship open initiatives aimed at achieving a key objective—fostering transparency through the dissemination of government data—which in turn aims to facilitate government accountability and enable the reuse of the data initially disclosed, offering social and economic value [32].

Transparency is recognised as a key element of good governance and plays a fundamental role in facilitating accountability by enabling citizens, the media, watchdogs, and other stakeholders to find, process, and re-use government data, thus allowing them to judge the decisions made by the agents responsible for public service delivery [26]. The role of transparency in reducing corruption has also been recognised in various studies [33–35], as well as its positive impact on trust in institutions [18,36,37].

According to [38], it is difficult and controversial to define the principles of good governance. The United Nations Development Program (UNDP “Governance and Sustainable Human Development, 1997”) presents a set of principles that, with slight variations, appear in much of the literature. Accountability is mentioned as one of the principles of good governance and is related to transparency. The 12 principles of good governance are enshrined in the Strategy for Innovation and Good Governance at the Local Level, adopted by the decision of the Committee of Ministers of the Council of Europe in 2008. They cover issues such as ethical conduct, the rule of law, efficiency and effectiveness, transparency, sound financial management, and accountability, and to ensure this, the various bodies need to provide themselves with the tools and means to make information available to citizens [39,40]. The authors of [41,42] recommend multi-criteria of good governance principles for the local government based on the operation research literature and decision analysis. The governance principles are political stability, voice, and accountability; market access and regulation; government effectiveness; and the rule of law and corruption prevention. A study using a south-east Asian country [43] validated governance principles: transparency, the rule of law, virtue, accountability, and participation. The authors of [44] applied the governance principles (legitimacy and transparency) as an indicator of local governance quality. Other authors, such as those of [45], have referred to the numerous studies that have emphasised that transparency is a key element of good governance [46–50].

Transparency is also related to the achievement of the Sustainable Development Goals (SDGs). Governments have a key role to play in achieving the SDGs, especially local governments, as they are very familiar with the needs of their citizens and are therefore aware of what needs to be done to implement the SDGs through their governance. As intermediaries for the achievement of the SDGs, it seems logical that the more transparent a government is, the more successful it will be in achieving the SDGs [10].

Transparency practices regarding the sustainability of public policies are particularly important for local governments due to their direct contact with citizens, the volume of resources that the governments manage, and the tenuous government financial circumstances [15,45,51]. Several studies have tried to identify the factors that can contribute to greater disclosure of information on sustainability in public bodies, identifying, among others, cultural factors and the development of right-to-information laws [15,52–54]. However, the conclusions obtained in [54] show that the transparency laws of these European countries have made a limited contribution to the online dissemination of information on sustainability in local governments and that there remains considerable room for improvement.

According to [18], governments' concern for transparency can be explained through different theoretical approaches, such as agency theory and legitimacy theory. Transparency, whether voluntary or mandatory, can reduce information asymmetries between government and citizens (agency theory) and increase citizens' trust in public officials, reinforcing the legitimacy of elected officials (legitimacy theory).

In the context of transparency, the agency theory, formulated by Jensen and Meckling (1976) [55], is essential for understanding the problems arising from the relationships between principals (shareholders, owners, or citizens) and agents (managers, directors, or administrators). The interests of both parties may not be aligned, leading to conflicts and opportunistic behaviour. One of the main challenges addressed by this theory is information asymmetry, which refers to the advantage that the agent obtains by possessing privileged information that is not available to the principal. In this framework, transparency policies are presented as crucial tools to facilitate the control and accountability of public and private managers [56]. However, agency theory has been criticised for focusing exclusively on the interests of the principal, neglecting the needs of other stakeholders or the possible natural alignments between the interests of agents and principals [57]. Despite these limitations, information disclosure remains a key tool for managing relationships and mitigating potential conflicts.

Likewise, legitimacy theory offers a complementary perspective, emphasising that organisations operate within a broader social framework. According to this approach, an institution's ability to gain and maintain social acceptance depends on its alignment with the prevailing norms, values and expectations of society [58]. In this scenario, the adoption of transparency policies becomes a fundamental means to reinforce the social legitimacy of institutions [59–61]. The need for transparency especially increases in controversial or sensitive situations, such as government decisions that may generate negative reactions. According to [62], in these cases, greater disclosure of information can help mitigate negative repercussions and protect the reputation of institutions. This approach also stresses the importance of the active participation of citizens in municipal management, using tools that encourage their direct involvement and the strengthening of trust in public institutions.

In line with these theories, neoinstitutionalism adds a new angle to the analysis of transparency by focusing on social and cultural influences on organisational decisions. Emerging between the 1970s and 1980s, this approach stresses that organisations tend to adopt similar practices in response to institutional pressures, not necessarily to improve operational efficiency but to gain social legitimacy [63]. From this perspective, the adoption of transparency policies aligns with prevailing social expectations, strengthening the public perception of institutions as responsible and trustworthy actors. According to [64], transparency practices enable organisations to maintain their legitimacy within a constantly changing social environment.

Finally, New Public Management (NPM), which emerged in the 1980s and 1990s, offers a result-oriented vision of public administration, inspired by private sector practices. Based on principles such as decentralisation, competition, and efficiency, NPM finds in transparency and accountability essential elements to align the interests of public managers with those of citizens [65]. Although this approach has been criticised for prioritising efficiency over values such as equity and democratic participation [66], there is no doubt that it reinforces the importance of transparency as a key tool to promote public trust and ensure alignment between public policies and citizen expectations [67].

In this context, the audit carried out by the Court of Audit constitutes an essential mechanism within this theoretical framework, with its main objective being to reduce the asymmetry of information existing between public agents and citizens, ensuring that public resources are managed in a transparent and efficient manner. Thus, by providing information that minimises the risks of opportunistic behaviour, it simultaneously reinforces institutional legitimacy by aligning government actions with social expectations.

These theories, in addition to providing a robust conceptual framework, allow us to understand how transparency has evolved into a normative principle. State transparency legislation first appeared in Sweden in 1766, and subsequently, these initiatives spread to other countries [68]. According to [23], since the 1970s, Western governments have introduced legislative changes that have allowed citizens greater access to administrative information, often by making disclosure of information by public services mandatory. In particular, in the 1990s, at the international level, the importance of transparency increased, especially through movements such as International Transparency (IT) and the Open Government Partnership (OGP).

Governments have put in place policies to promote transparency in the public sector, seeking to guarantee the right to information and its rapid dissemination to citizens. One such initiative is the passage of freedom of information (FOI) laws that make access to public information a citizen's right [69]. Transparency is institutionalised in freedom of information legislation. The right of access to information, an indicator of transparency, is considered a fundamental democratic principle [70].

In the case of Spain, before the publication of the Spanish direct State Transparency par excellence, the Law on Transparency, Access to Information and Good Governance 19/2013 (LTAIBG), some of the transparency rules housed in the international Transparency Laws remained in precepts of the indirect State Transparency of other regulatory bodies such as Articles 3.5, 35, and 37 of Law 30/1992 on the Legal Regime of the Administration (RJ-PAC) [67], Law 27/2006, of 18 July, which regulates, among others, access to environmental information, and Law 37/2007, of 16 November, on the reuse of public sector information, along with sectoral regulations that include disclosure obligations in each field [16].

According to [2], the LTAIBG unites transparency, access to information, and good governance as three absolutely complementary aspects to promote the improvement of institutional performance and foresees obligations and requirements for the public sector as a whole, with the aim of improving its performance. Similarly, the other autonomous community regulations replicate, in general terms, the inclusion of these three aspects. At present, sixteen autonomous communities have already developed a transparency law, while one of them has a preliminary draft law (which represents practically all the autonomous communities), and the Council for Transparency and Good Governance and its equivalent bodies in the different communities were created. At the municipal level, the power to develop their own regulations on transparency corresponds to the local councils through local transparency ordinances, and few municipalities have developed their own ordinance regulating this principle [18].

Given the importance of transparency in the public sector, and in order to ensure the translation into reality of the precepts included in the aforementioned regulations, it is essential to have measures that allow for the quantification of their compliance by the different entities at the different levels of government. This is especially crucial in local entities, as local governments are the main providers of services to the population, and misconduct or mismanagement would have a strong impact on their welfare, making the assessment of their transparency particularly relevant [71]. The study in [2] attempted to contrast the extent to which transparency regulations have promoted organisational and institutional change in Spanish local authorities, as well as their level of performance in terms of active disclosure, concluding that municipalities subject to less demanding or imprecise regional regulations, or those that do not include local authorities as a subject, tend to offer lower levels of information.

To examine transparency, methodologies have been developed by international organisations (OECD, IT, International Budget Partnership, among others) to assess the scope of the information disclosed by public entities through their websites, specifically by creating indices or rankings [72]. Despite this, several studies highlight the absence of appropriate tools to measure transparency [19,26,73].

Before the approval of the LTAIBG, Spain was the only EU country that did not have a national regulation on access to information. However, the tradition of assessing transparency in Spain began years before, thanks to Transparency International Spain (TIE). It was in 2008 when this organisation began to develop indices to assess the transparency of various institutions [74].

As mentioned above, the most widely used method for measuring transparency has been the creation of indices that measure the transparency of municipalities based on a specific set of indicators, generally based on current legislation, which are often structured in rankings that order municipalities from the highest to the lowest level of transparency [11]. Table 1 summarises the main indicators found in the academic and professional literature; however, in the Spanish context, it is relevant to highlight the following transparency indices that have been developed to assess and rank the level of transparency of public entities:

- The Municipalities Transparency Index (ITA) is a tool developed by Transparency International Spain to evaluate the level of transparency of the largest Spanish municipalities. In Spain, the entity in charge of promoting transparency and integrity in the public and private sector is the non-governmental organisation called Transparencia Internacional España, a subsidiary of Transparency International. Since 2008, this organisation has been producing the Transparency Index of Municipalities (ITA) for the 110 most populated municipalities in Spain [23]. This index, which is compiled every two years, uses 80 indicators divided into six key areas: information on the municipal corporation, citizen relations, economic-financial transparency, service contracting, urban planning, public works, and other indicators related to the Transparency Law. This index seeks to provide an objective assessment of how councils share information with citizens, encouraging continuous improvement in transparency and accountability. It also improves the information that municipalities provide to citizens, fosters better communication with them and increases transparency in their activities and services [18].
- The Infoparticipa Map, created in 2012, aims to evaluate the information published by local councils on their websites, promoting more transparent and high-quality communication that benefits both individual organisations and the public sector in general. Initially, this project focused on the 947 town councils in Catalonia. Over time, and with the collaboration of other researchers, the evaluation was extended to

communities such as Madrid, Andalusia, Aragon, and the autonomous cities of Ceuta and Melilla, thanks to three R&D&I projects funded by the Ministry of Economy and Competitiveness. In addition, the methodology has been adapted for application in some Latin American countries. In its beginnings, the assessment was based on 41 questions divided into four blocks: identification of policy makers, collective resource management, management information, and participation mechanisms. More recently, the Mapa Infoparticipa used 52 indicators for its assessments [75].

- The DYNTRA was developed to provide a comprehensive view of transparency in public administration by assessing various aspects of institutional accountability. The index is based on a series of indicators designed to measure the availability of public information, the accessibility of government data, and the level of citizen participation in the decision-making process. The Dynamic Transparency Index (DYNTRA), known as DAM (DYNTRA de Ayuntamientos y Municipios), assesses city councils and municipalities with more than 15,000 inhabitants using 162 dichotomous indicators organised into six areas. This index offers a measurement through a municipal transparency ranking that is automatically updated as new indicators are incorporated. Its objective is to measure the public information of public administrations, governments, political parties, elected officials, and other social actors in an efficient, transparent, and open manner [16,18].
- The Transparency Evaluation and Monitoring Methodology (MESTA) is responsible for assigning ratings to various types of administrations based on their specific characteristics and transparency standards. It is the first official methodology in Spain to assess transparency and was created in 2016 by the Council for Transparency and Good Governance (CTBG) and the State Agency for the Evaluation of Public Policies and Quality of Services (AEVAL) with the aim of measuring the transparency of various public and private entities. This process is carried out in three phases, and each phase contains between 14 and 21 different criteria. Its analysis is carried out using a compliance scale, and in addition, it is responsible for assessing two levels of openness of public data in addition to the mandatory ones and come from more detailed regulations: the degree of mandatory compliance with the Transparency Law and the quality of transparency through voluntary indicators [76].
- The two-dimensional Transparency Index (BTI) is structured in two key dimensions: breadth and depth. Breadth refers to the number and distribution of the 48 indicators, which are organised into seven different areas of assessment: institutional and organisational information, senior management, planning and evaluation, legal information, procedures and citizen participation, contracts and subsidies, and financial information. On the other hand, depth analyses the specific content of each indicator. Each of these indicators is assessed on a scale of 0 to 3, where 0 indicates no compliance and 3 indicates full compliance. This assessment system also uses a colour and letter code (purple, red, yellow, and green) to provide a clear visualisation of the level of transparency achieved. The total score of a municipality is obtained by adding up the scores of all areas, treating them with equal importance. This methodology allows for a detailed and visually accessible assessment of municipal transparency, which facilitates the identification of deficiencies and the implementation of improvements [16].

Despite the proliferation in recent times, as noted above, of work on measuring transparency, several studies have highlighted the absence of appropriate tools for measuring transparency [16,19]. Of all the indices mentioned above, the two-dimensional Transparency Index is specifically designed to overcome one of the critical limitations that affect many of these indices: the use of dichotomous indicators. Unlike the other indices that offer simplified “yes/no” answers, the BTI focuses on a more nuanced and complex assessment.

The BTI integrates qualitative and quantitative indicators that allow for a more accurate capture of the dimensions of transparency. However, although various methodologies for assessing transparency as described above have been implemented, there is still a lack of adequate tools that address all the dimensions necessary for a comprehensive and accurate measurement of institutional transparency. The continuous development and updating of these indices and the creation of new indices are essential to better reflect the reality of transparency in public entities.

Table 1. Comparison of transparency indices: dimensions, aspects, and indicators adapted from Garrido-Rodriguez et al. (2025) [67].

Index	Type	Number of Indicators	Description	Theory	Source
ITA	Practical	80	Six areas to the 110 biggest municipalities	Agency	ITA 2017
DYNTRA	Practical	159	Citizens' collaboration	Legitimacy	DYNTRA
Infoparticipa	Practical	41	Representation in a map with colours	Agency	Infoparticipa
MESTA	Practical	21	Evaluation in three areas and two dimensions: compulsory content and information quality	Agency and Legitimacy	MESTA
[77,78]	Academic	13	Financial information	Agency	[77,78]
[79]	Academic	35	Three categories	Agency	[79]
[19]	Academic	76	Collaboration with public entities	Agency	[19]
[80]	Academic	38	Responsibility, important information, and participation	Agency	[80]
Composite Transparency Indicator (CTI)	Academic	24	Evaluation through two dimensions: integrity and performance	Legitimacy	[81]
Italian Transparency Index	Academic	13	Evaluation through two dimensions: integrity and efficiency	Legitimacy	[82]

3. Methodology and Data

This study focuses on the evaluation of transparency in Spanish municipalities and provincial capitals with a large population. To achieve this objective, a methodology based on the construction of a Transparency Index was implemented, taking as a reference the standardised programme established by the Guide for the Audit of the Principle of Transparency of the Court of Audit [20]. In particular, this study evaluated whether the distributions obtained from the BTI and the Court of Audit index are similar or not. This comparison is crucial to determine if the methodologies applied in both models lead to consistent results. Significant similarities in the distributions would suggest that both methodologies provide equivalent insights into the efficiency of the models. However, notable differences would indicate inconsistencies between the two approaches, raising questions about the coherence of their conclusions. For this purpose, we applied Li's test to analyse the consistency of the results.

With respect to the municipalities considered, an exhaustive analysis was carried out on the municipalities and provincial capitals in Spain that meet the population criteria established in article 121 of Law 7/1985, of 2 April, Regulating the Bases of Local Government (amended by Law 53/2003, on measures for the modernisation of local government). According to this legislation, “municipalities with a large population” are considered to be those with more than 250,000 inhabitants, as well as provincial capitals with a population of more than 175,000 inhabitants. The sample used in this study comprised 36 municipalities and provincial capitals that met the established criteria.

The decision to focus on large municipalities in transparency studies is supported by several key factors. Firstly, larger cities tend to have more developed media and active civil society organisations, which exert stronger pressure on politicians to adopt transparent policies, ultimately leading to higher transparency levels [83]. Additionally, population size positively influences the achievement of financial transparency, as larger municipalities are often better equipped to implement and disclose fiscal practices [84]. Furthermore, focusing on larger municipalities enables researchers to access more comprehensive data, as transparency efforts and reporting practices are more prominent in these entities [85]. Lastly, there is a demonstrated correlation between municipality size and transparency in fiscal management, making these cities valuable for understanding key determinants of local government transparency [86]. These factors together make larger municipalities a compelling focus for transparency research.

3.1. Methodology

3.1.1. Assessment of the Degree of Transparency Through the Court of Audit Index

In order to develop the methodology of this study, the information corresponding to each transparency indicator that makes up the index proposed in this article, which we will refer to hereinafter as the “Court of Audit (CoA) Index”, was searched and verified. This information was obtained from the transparency portals of the selected public entities.

The CoA of Spain carries out the task of auditing the compliance of the economic-financial activity of the public sector with the principle of transparency, and its results are materialised in the issuance of an audit report documenting the incidences found, offering conclusions, as well as highlighting the good practices observed and recommendations formulated. Its objective is to ensure that the economic and financial activities of the public sector comply with principles of legality, efficiency, economy, transparency, environmental sustainability, and gender equality. The objective of the CoA index is to establish a score for each municipality analysed, which summarises the degree of compliance with its transparency obligations, a detailed description of which is provided by the CoA in its audit report.

In order to analyse the degree of transparency of municipalities and provincial capitals, the indicators that make up the proposed index have been evaluated, based on the items that the guide, in annexes 3 and 5, establishes as aspects whose compliance must be verified in the exercise of auditing compliance with the principle of transparency for entities in the local public sector. Table 2 shows these indicators, together with the article of Law 19/2013, of 9 December, on Transparency, Access to Public Information and Good Governance to which they refer.

Table 2. Indicators included in annexes 3 and 5 of the CoA Audit Guide.

Indicator	Article Law 19/2013 LTAIBG
1. Information on electronic sites or websites	5.4
2. Information in a clear, structured, and understandable way	5.4
3. Information preferably in reusable formats	5.4
4. The information published is easily and freely accessible	5.5
5. Information published in a way that is accessible to people with disabilities	5.5
6. Functions of the entity	6.1
7. Applicable legislation	6.1
8. Organisational structure and updated organisation chart	6.1
9. Those responsible for the entity are identified with their profile and professional trajectory	6.1
10. Annual and multiannual plans and programmes with their specific objectives, and the activities, means, and time envisaged for their achievement	6.2
11. Degree of compliance with the results and whether they are regularly evaluated and published together with the measurement and assessment indicators	6.2
12. Guidelines, instructions, agreements, circulars, or replies to enquiries from individuals or other bodies that involve an interpretation of the law or have legal effects	7.a
13. Preliminary draft laws, draft legislative decrees, and draft regulations for which they have the power to initiate	7.b and c
14. Memories and reports forming part of the dossiers for the preparation of regulatory texts, particularly the report on the regulatory impact analysis	7.d
15. Documents to be subject to a period of public information during their processing	7.e
16. Contracts, indicating the subject, duration, amount of the tender and award, procedure used for the conclusion of the contract, instruments through which it was advertised, number of tenderers, identity of the successful tender, amendments to the contract and decisions on cancellation and renunciation (in the case of minor contracts, at least on a quarterly basis)	8.1.a
17. Statistical data on the percentage in budget volume of contracts awarded through each of the procedures	8.1.a
18. Agreements signed, indicating signatory parties, purpose, duration, amendments, parties obliged to provide the services, and the financial obligations agreed upon	8.1.b
19. Management contracts, stating the purpose, budget, duration, financial obligations, subcontracting, with instructions of the successful tenderers, and procedure followed for the award and amount	8.1.b
20. Subsidies and public aid granted, indicating the amount, objective or purpose, and beneficiaries.	8.1.c
21. Budgets, indicating the description of the main budget items and up-to-date and comprehensible information on their state of execution and on compliance with the objectives of budgetary stability and financial sustainability	8.1.d
22. Annual accounts and the reports on the audit of accounts and audits by external audit bodies	8.1.e
23. Remuneration received by senior officials and heads of institutions and allowances received on leaving office	8.1.f
24. Resolutions of authorisation or recognition of compatibility affecting public employees as well as those authorising the exercise of private activity upon termination of senior officials.	8.1.g
25. The annual declarations of assets and activities of local representatives, under the terms provided for in Law 7/1985, of 2 April 1985, Regulating the Bases of the Local Regime	8.1.h
26. Statistical information necessary to assess the degree of compliance and quality of public services	8.1.i
27. List of immovable property owned by the entity or over which it has a right in them	8.3

To evaluate compliance with these indicators in the selected entities, a dichotomous approach based on data was adopted (a value of '1' is assigned when an item is available on the local government website, and '0' when it is not), ensuring a high level of comparability

with previous studies [19]. Each municipality was assessed by two independent evaluators, assigning equal weighting to each evaluator's assessment. To ensure the reliability of the scores obtained, the degree of agreement between the evaluators was calculated using the Holsti index [87]. This index, widely used in social science research [88], measures the raw agreement rate between evaluators by comparing the number of agreements to the total number of decisions made. The Holsti index provides a clear and reliable measure of inter-rater consistency, and it ranges from 0 to 1, where 0 indicates no agreement between evaluators and 1 indicates perfect agreement. It is formally expressed as

$$I_H = \frac{k \cdot C}{\sum_{i=1}^k N_i} \quad (1)$$

where

- IH: Holsti index.
- k : Number of evaluators.
- C : Number of agreements between the evaluations performed.
- N_i : Total number of decisions made by each evaluator i , with $i = 1, 2, \dots, k$.

In the case of the present work, the Holsti index gave a value of 0.87, which indicates a high degree of coherence between the evaluators. Appendix A shows an example of the CoA evaluation carried out on the municipality of Madrid, which also includes the formula for calculating the CoA index and the Holsti index for this specific evaluation.

3.1.2. Assessment of the Degree of Transparency Through the BTI

The main objective of this work was not only to measure the level of transparency in the selected municipalities and provincial capitals but also to carry out an exhaustive comparison with the Bidimensional Transparency Index (BTI) and the results presented by its application to the selected municipalities. This comparative approach makes it possible to identify strengths and weaknesses in institutional transparency, as well as to assess the coherence and complementarity between the two indices. To achieve this objective, the BTI was applied to the sample of 36 municipalities and provincial capitals used in the evaluation with the Court of Audit' index. This approach allows for an exhaustive evaluation of transparency in local administrations, contrasting the results obtained with both indices to offer a more complete and accurate view of compliance with transparency and accountability standards in the sample studied.

The Bidimensional Transparency Index (BTI) was developed in two dimensions, breadth and depth, which allows the information to be broken down into two dimensions, breadth and depth, which make it possible to analyse the quantity and quality of the information disclosed by local authorities. Breadth refers to the number of indicators that make up the index. It is made up of a total of 20 indicators, encompassed in six areas of evaluation (Table 3).

Table 3. BTI.

(a) Institutional and Organisational Information:

Functions of the entity
 Implementing legislation
 Organisational structure
 Inventory of movable and immovable property
 Additional information of interest to citizens

Table 3. Cont.

(b) Information on Senior Officials and Those Exercising the Highest Responsibility:
Allowances received, if any, on termination of service
Annual statement of assets and activities of local representatives
(c) Information on Planning and Evaluation:
Activities, means, and time foreseen for their achievement and degree of compliance
Reports on the degree of compliance and quality of public services, surveys on equipment, and the cost of services, as well as the information available to enable their assessment
(d) Legally Relevant Information:
Guidelines, instructions, agreements, circulars
Responses to queries from individuals or other bodies insofar as they involve an interpretation of the law
The draft regulations for which they are responsible for initiating shall be made public at the time when, where appropriate, they are submitted to the public hearing or public information procedure
The opinion of the Economic and Social Council and the opinion of the Advisory Council
Documents that, in accordance with the sectoral legislation in force, must be subject to a period of public information during their processing
(e) Information on Contracts, Agreements and Subsidies:
All contracts: object, duration, tender amount...
List of agreements signed: signatory parties, their purpose, duration, amendments made, persons bound by the obligations, etc.
Management entrustment: purpose, budget, economic obligations...
Subsidies and public aid granted: call or resolution, programme and budget credit, amount, objective, and beneficiaries
(f) Economic, Financial, and Budgetary Information:
The budgets
The annual accounts

On the other hand, depth refers to the content of each of the indicators, based on a scoring system from 0 to 3 based on compliance with the requirements of each indicator. In addition, the BTI uses a colour system where each indicator is rated according to the degree to which the associated requirements are met, with scores ranging from 0 to 3. This allows for a precise graduation of the level of transparency, where each value is identified using a colour in a traffic light system to visually represent the result: purple for 0, red for 1, yellow for 2, and green for 3. Each area of assessment is given equal importance and scored similarly, with a total range from 0 to 100, facilitating a clear and differentiated assessment of compliance with the transparency law. The final score for each municipality, expressed on a scale of 0 to 100, also uses colour coding and lettering to facilitate the visual interpretation of the results. This method offers a clear and effective tool to compare and visualise the levels of transparency among the municipalities assessed [18].

4. Results

The analysis of the results obtained when assessing compliance with the 27 items that make up the index proposed in this article, based on the standardised programme of the Court of Audit [20] from the information shown, made it possible to obtain the aggregate scores shown in Table 4. In order to facilitate subsequent comparison with the assessment of these municipalities based on the BTI, a parallel comparison was made with the latter so that each municipality was assigned the letter and colour that would correspond to it according to this index [18].

Table 4. Results obtained in the CoA evaluation.

Municipality	Letter	Colour	CoA
Madrid	A	Green	92.59
Barcelona	A	Green	88.89
Móstoles	A	Green	88.89
Alcalá de Henares	A	Green	85.19
Sabadell	A	Green	85.19
Badalona	A	Green	77.78
Las Palmas de Gran Canaria	A	Green	77.78
Santa Cruz de Tenerife	A	Green	77.78
Zaragoza	A	Green	77.78
Alicante	B	Yellow	74.07
Donostia/San Sebastián	B	Yellow	74.07
Fuenlabrada	B	Yellow	74.07
l'Hospitalet de Llobregat	B	Yellow	74.07
Oviedo	B	Yellow	74.07
Cartagena	B	Yellow	70.37
Castelló de la Plana	B	Yellow	70.37
Malaga	B	Yellow	70.37
Palma	B	Yellow	70.37
Terrassa	B	Yellow	70.37
Vigo	B	Yellow	70.37
Grenada	B	Yellow	66.67
Almeria	B	Yellow	66.67
Jerez de la Frontera	B	Yellow	62.96
Pamplona/Iruña	B	Yellow	62.96
Seville	B	Yellow	62.96
Vitoria-Gasteiz	B	Yellow	62.96
A Coruña	B	Yellow	59.26
València	B	Yellow	59.26
Bilbao	B	Yellow	55.56
Getafe	B	Yellow	55.56
Leganés	B	Yellow	55.56
Murcia	B	Yellow	55.56
Valladolid	B	Yellow	55.56
Elche	B	Yellow	51.85
Gijón	B	Yellow	51.85
Cordoba	C	Red	40.74

None of the municipalities reach full compliance, with Madrid being the municipality with the highest level of compliance, with a score of 92.59. Cordoba is the municipality with the lowest level, not reaching 50% compliance. By Autonomous Communities, Madrid and

Catalonia are the ones with the greatest presence in the area of high compliance with the LTAIBG. Table 5 shows the scores obtained by the municipalities based on the BTI.

Table 5. BTI score of municipalities.

Municipality	Letter	Colour	BTI
Madrid	A	Green	86.39
Gijón	A	Green	83.61
Móstoles	A	Green	81.11
Oviedo	A	Green	80.28
Cordoba	B	Yellow	73.89
Vitoria-Gasteiz	B	Yellow	73.33
Barcelona	B	Yellow	72.78
Jerez de la Frontera	B	Yellow	72.78
Vigo	B	Yellow	71.11
Donostia/San Sebastián	B	Yellow	70.83
Seville	B	Yellow	70.83
Badalona	B	Yellow	70.56
Sabadell	B	Yellow	70.00
Elche	B	Yellow	69.72
Valladolid	B	Yellow	69.44
Palma	B	Yellow	68.89
Cartagena	B	Yellow	68.61
Leganés	B	Yellow	68.06
Grenada	B	Yellow	67.22
l'Hospitalet de Llobregat	B	Yellow	66.94
Castelló de la Plana	B	Yellow	66.67
Terrassa	B	Yellow	66.39
València	B	Yellow	66.39
Getafe	B	Yellow	65.83
Murcia	B	Yellow	63.89
Pamplona/Iruña	B	Yellow	63.33
Alicante	B	Yellow	62.50
Las Palmas de Gran Canaria	B	Yellow	61.11
Zaragoza	B	Yellow	59.72
Malaga	B	Yellow	57.78
Alcalá de Henares	B	Yellow	57.50
Fuenlabrada	B	Yellow	56.67
Santa Cruz de Tenerife	B	Yellow	52.50
Bilbao	B	Yellow	51.67
A Coruña	C	Red	45.28
Almeria	C	Red	25.00

When comparing the scores obtained by the selected municipalities in the CoA indices and BTIs (Table 6), it is noteworthy that those of the latter are lower than those of the CoA index, which is logical since the latter is made up of dichotomous indicators, while in the BTI, the score is graded according to the level of compliance with the different indicators that comprise it.

Table 6. Comparison of CoA index and BTI results.

Municipality	CoA	BTI
Madrid	92.59	86.39
Barcelona	88.89	72.78
Móstoles	88.89	81.11
Alcalá de Henares	85.19	57.50
Sabadell	85.19	70.00
Badalona	77.78	70.56
Las Palmas de Gran Canaria	77.78	61.11
Santa Cruz de Tenerife	77.78	52.50
Zaragoza	77.78	59.72
Alicante	74.07	62.50
Donostia/San Sebastián	74.07	70.83
Fuenlabrada	74.07	56.67
l'Hospitalet de Llobregat	74.07	66.94
Oviedo	74.07	80.28
Cartagena	70.37	68.61
Castelló de la Plana	70.37	66.67
Malaga	70.37	57.78
Palma	70.37	68.89
Terrassa	70.37	66.39
Vigo	70.37	71.11
Grenada	66.67	67.22
Almeria	66.67	25.00
Jerez de la Frontera	62.96	72.78
Pamplona/Iruña	62.96	63.33
Seville	62.96	70.83
Vitoria-Gasteiz	62.96	73.33
A Coruña	59.26	45.28
València	59.26	66.39
Bilbao	55.56	51.67
Getafe	55.56	65.83
Leganés	55.56	68.06

Table 6. *Cont.*

Municipality	CoA	BTI
Murcia	55.56	63.89
Valladolid	55.56	69.44
Elche	51.85	69.72
Gijón	51.85	83.61
Cordoba	40.74	73.89

If we look at the scores achieved by the different municipalities in the BTI, Madrid is once again the one with the highest level of transparency. Focusing on the municipalities with the highest level of compliance with the Transparency Law, only Madrid and Móstoles appear with a high range of compliance in both indices. Barcelona, which ranks second in terms of level of compliance according to the CoA index, with a score of 88.89, appears in the BTI in the intermediate compliance zone, with a score of 72.78 in this index. This difference in score could be due both to the higher level of compliance in the BTI, as it is not made up of dichotomous indicators, and to the fact that the CoA index considers some indicators not considered in the BTI, for most of which the municipality of Barcelona scores positively.

The results obtained in the municipalities of Oviedo and Gijón are noteworthy, especially in the case of the latter. Oviedo, which appears in the CoA index with a score of 74.07, in the intermediate compliance zone, has a score of 80.28 in the BTI, and is therefore in the high compliance zone. In analysing the results of the evaluation in the CoA index, it can be seen that this municipality does not score positively in five of the ten indicators considered by this index and that are not included in the BTI. In the case of Gijón, this occurs with six of the ten indicators that are not common to both the CoA index and the BTI, in addition to the indicator relating to budget information not being considered non-compliant, as the transparency portal does not have the high level of detail required in the standardised programme of the CoA Audit Guide.

The differences in the scores achieved in the two indices in the area of low compliance with the Transparency Law are more notable. The case of Cordoba, the only municipality that appears at this level in the CoA index, is striking, reaching a score of 40.74, while in the BTI, it obtains a score of 73.89, very close to the range of scores of high compliance with the law. The low score achieved by this municipality in the CoA index could be due to the fact that it does not score positively in seven of the ten indicators that are not common between the two indices, and on the other hand, the evaluation considered non-compliance in the case of three other indicators, either because the transparency portal does not offer the level of detail specified in the CoA Audit Guide or because it offers information that is not updated.

Almería, which has the lowest value in the BTI, achieves an intermediate score in the CoA index, considerably higher than that obtained in the BTI. In this case, the differences could be due to the fact that this municipality obtains a positive evaluation in five of the ten indicators considered in the CoA index and not present in the BTI, and on the other hand, in the common indicators, the BTI would be penalising the depth of the information provided in the corresponding transparency portal.

To explore the possible distributional differences underlying these results, Li's test can be used. Li's test is a non-parametric statistical method used to assess the differences between two distributions, especially in cases where traditional parametric tests might fall short [89,90]. While typical approaches like the t-test (for parametric samples) or the Wilcoxon test (for non-parametric samples) focus on comparing mean values, Li's test takes

a broader approach by measuring the global distance between two density functions using their integrated square error (ISE). This provides a comprehensive assessment of how close or different the distributions are, beyond just central tendencies.

In this study, we first present the density functions of the BTI and the CoA index, as shown in Figure 1. The goal is to compare these two distributions, representing different DEA models, to determine whether they are statistically distinguishable. The test works by calculating the ISE between these functions, offering a more holistic comparison of the entire distribution rather than just comparing average values.

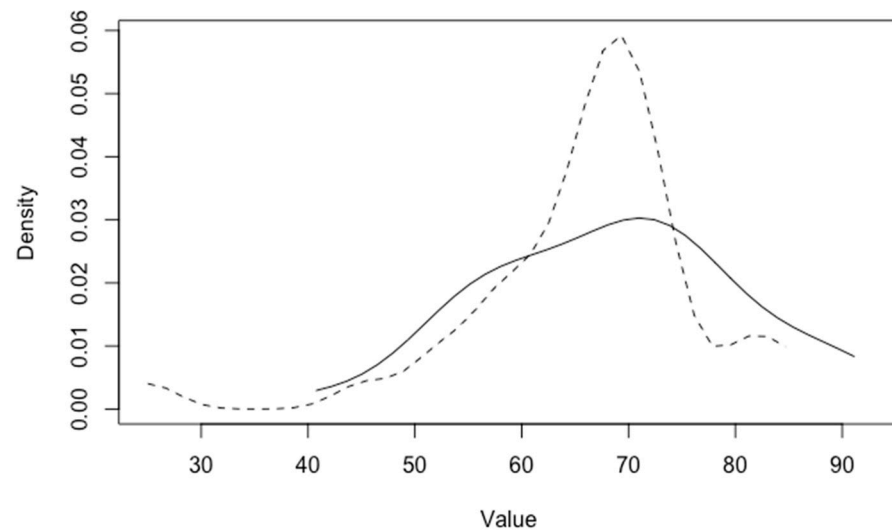


Figure 1. Density functions of the BTI index and the CoA index. Source: Own elaboration.

Li's test, as applied here, draws on methodologies from [91,92], making it a robust alternative for assessing distributional differences between DEA models [93,94]. By comparing the overall shape and distance between the distributions, the test can identify significant differences that might be missed using traditional tests.

This method is particularly sensitive to variations in the shape of the distributions, making it ideal for evaluating efficiency outcomes in the two DEA models. The global distance calculation allows for a rigorous assessment of whether the results from the BTI and the CoA index are significantly different, providing deeper insights into the performance of the models in question.

The results shown in Table 7 confirm that the methodologies are different and do not coincide. The use of different indices based on distinct methodologies results in varying outcomes, which highlights that the choice of index fundamentally impacts the results. This divergence suggests that selecting an index requires careful consideration, as each methodology may produce distinct transparency measures.

Table 7. BTI and CoA Index comparison.

	T	p Value
Comparing BTI and CoA Index	0.9242184	0.1776863

Source: Own elaboration.

Result Discussion

The comparison between the CoA Index and the BTI reveals significant differences in results, highlighting the importance of understanding the underlying methodologies when using these indices, even though they are the most widely employed tools in evaluating municipal transparency [16].

The CoA index, based on the Court of Audit' Audit Guide, is a standardised tool designed to systematically and uniformly assess compliance with the obligations set forth in Law 19/2013 on Transparency, Access to Public Information, and Good Governance (LTAIBG). This index, consisting of 27 indicators evaluated dichotomously (0 or 1), focuses on verifying the mere presence or absence of the mandatory information, thus ensuring a rigorous and detailed evaluation of the formal and legal aspects of the law by measuring the minimum required compliance. Its legitimacy and authority stem from the support of an official body responsible for auditing public entities. However, its dichotomous design limits the ability to capture gradations in the level of compliance, reducing its capacity to reflect nuances in the quality or depth of the information provided.

In contrast, the BTI is characterised by offering a more flexible and nuanced assessment, concentrating on both the depth and breadth of the information available on transparency portals. This index evaluates 20 indicators organised into six key areas, using a scale from 0 to 3 that allows for measuring not only the presence of information but also its quality and level of detail. The BTI's bidimensional approach enables it to capture both the breadth and depth of information, providing a more detailed analysis that facilitates the identification of specific strengths and weaknesses in meeting transparency obligations.

The structural differences between the two indices produce disparities in the individual rankings of municipalities, illustrating the distinction, noted in the literature, between "compliance transparency" (focused on meeting minimum requirements) and "quality transparency" (focused on the utility and detail of the information) [19].

For example, Gijón has a CoA index of 51.85, yet stands out with one of the highest BTI scores (83.61). This suggests that although it may not fully meet all the basic legal requirements (in terms of published mandatory documentation), it does provide information with a higher level of detail or quality in the areas covered by the BTI.

Conversely, municipalities such as Almería (66.67 in CoA index and 25.00 in BTI) and Alcalá de Henares (85.19 in CoA index and 57.50 in BTI) score medium/high on the CoA index but relatively lower on the BTI. This could indicate a lack of depth in the information available on the transparency portal—an aspect that is more harshly penalised by the BTI. The divergence of results demonstrates that mere compliance with legal requirements (captured by the CoA index) does not necessarily lead to more comprehensive information or greater openness to citizens (the dimension of depth valued by the BTI). This phenomenon can be interpreted in light of comparative studies in different countries [26], which have shown that factors such as municipality size, resource availability, or politics will affect both compliance with legal requirements and the quantity and quality of published information. Thus, some municipalities appear to meet minimum regulations without progressing to publish more detailed information. In this way, it is confirmed that fulfilling legal obligations does not necessarily equate to providing citizens with more accessible or detailed information, a phenomenon also noted in research advocating for multidimensional measurement methods that combine dichotomous verification with a gradual analysis of disclosure quality [95,96]. These findings also connect with the literature that identifies a positive relationship between quality transparency, accountability, and citizen participation [97].

In short, the application of both indices offers a complementary perspective. The CoA index ensures oversight of minimum regulatory compliance and provides a homogeneous view of the progress in transparency based on Law 19/2013, while the BTI focuses on the quality and depth of information. Integrating both approaches not only helps detect any instances of non-compliance but also clarifies the added value that local governments can offer citizens through greater openness, detail, and accessibility of public information. This comparative analysis lays the foundation for academic debate on the effectiveness of

transparency policies, as well as for designing strategies that reinforce both legal compliance and deeper accountability and citizen participation.

5. Conclusions

The analysis carried out in this study reveals that the level of transparency in Spanish municipalities shows significant room for improvement, as none of them fully complies with the obligations established by Law 19/2013 on Transparency, Access to Public Information and Good Governance (LTAIBG). This situation highlights the need to promote strategies to increase both the quantity and quality of the information available on municipal transparency portals.

When comparing the two indices used, there are notable differences in their design and results. The index proposed on the basis of the specifications of the CoA's Audit Guide [20] considers a greater number of indicators, presenting a greater level of detail, therefore, in the requirement regarding the information published on the transparency portals of local councils eminently auditing in accordance with the functions attributed by legislation to the Spanish Court of Audit, which is logical, given the objective of this guide.

The scores obtained in the CoA index are, in general, higher than those corresponding to the BTI, which could be partly explained by the fact that in most of the indicators considered in the CoA index, which are also present in the BTI, the level of demand in the evaluation in the latter index is higher, given the way in which it is defined, considering both the breadth and depth of the information provided.

The main contribution of the CoA index proposed in this paper is that it provides a summary measure of the level of compliance with all the aspects that the Court of Audit considers fundamental in relation to compliance with the Transparency Law. This index would make it possible to complement the content of the CoA's audit reports with a "summary" score, which would provide a clearer vision of the level of compliance of local entities, as well as a comparison with other comparable entities in terms of size, thus favouring "competition" between them, which could lead to an improvement in the levels of compliance with the obligations established in the Transparency Law [19].

However, it presents a certain weakness in terms of the consideration of dichotomous indicators, which does not allow the score to be graded in terms of the achievement of the different aspects considered. It should be borne in mind that the proposed index is based on the different items that form part of the CoA's standardised programme and that the purpose of this body is to issue a detailed audit report that considers both compliance or non-compliance with the different aspects, and in the case of non-compliance, an explanation of the facts that motivate non-compliance would be offered in this report. In future work, therefore, improvements could be made to the proposed index, establishing a graduation in the scoring, thus abandoning the use of dichotomous indicators, depending on the information provided on each aspect, with reference to the specifications of the Guide with respect to the audit report.

From the comparative and contrast analysis of both, the Li test indicates that measuring transparency effectively requires a sensitivity analysis of the indices used. Although various indices aim to measure the same construct, they often yield different results, underscoring the importance of assessing the methodological impact on transparency outcomes.

In the future, it is essential to continue to assess progress in transparency to determine the extent to which local authorities can improve the information they provide on their transparency portals, as well as to increase transparency levels over time. The analysis in this paper suggests several directions for future research. Firstly, in developing improvements in the proposed index, a graduation in the score should be established, thus abandoning the use of dichotomous indicators, depending on the information provided

on each aspect, with reference to the specifications of the Guide with respect to the audit report, which will allow for a more effective way of capturing the quality and quantity of the information provided by the municipalities. Furthermore, it would be relevant to carry out comparative studies between the transparency indices used in different countries to assess the effectiveness and applicability of different methodologies, as well as to carry out research on how competition between municipalities in terms of transparency influences their scores and practices. These lines of research can contribute significantly to improving the quality of information in terms of transparency, optimising the indices that measure transparency, and better understanding the factors that influence the effective implementation of transparency policies in municipalities.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. CoA Evaluation and Holsti Index—Madrid

Indicator	Judge 1	Judge 2
1. Information on electronic sites or websites.	1	1
2. Information in a clear, structured and understandable way.	1	1
3. Information preferably in reusable formats.	1	1
4. The information published is easily and freely accessible.	1	1
5. Information in a way that is accessible to people with disabilities.	1	1
6. Functions of the entity.	1	1
7. Applicable legislation.	1	1
8. Organisational structure and updated organisation chart.	1	1
9. There is identification of those responsible for the Entity with their profile and professional trajectory.	1	1
10. Annual and multiannual plans and programmes with their specific objectives, and the activities, means and time envisaged for their achievement.	1	1
11. Degree of compliance with the results and whether they are regularly evaluated and published together with the measurement and assessment indicators.	0	1
12. Guidelines, instructions, agreements, circulars or replies to enquiries from individuals or other bodies which involve an interpretation of the law or have legal effects.	1	1

Indicator	Judge 1	Judge 2
13. Preliminary draft laws, draft legislative decrees and draft regulations for which they have the power to initiate.	1	1
14. Memories and reports forming part of the dossiers for the preparation of regulatory texts, particularly the report on the regulatory impact analysis.	0	1
15. Documents to be subject to a period of public information during their processing.	1	1
16. Contracts, indicating: subject, duration, amount of the tender and award, procedure used for the conclusion of the contract, the instruments through which it was advertised, number of tenderers, identity of the successful tender, amendments to the contract and decisions on cancellation and renunciation (in the case of minor contracts, at least on a quarterly basis).	1	0
17. Statistical data on the percentage in budget volume of contracts awarded through each of the procedures	1	1
18. Agreements signed, indicating: signatory parties, purpose, duration, amendments, parties obliged to provide the services, and the financial obligations agreed upon.	1	0
19. Management contracts, stating: purpose, budget, duration, financial obligations, subcontracting, with instruction of the successful tenderers, procedure followed for the award and amount.	1	1
20. Subsidies and public aid granted, indicating: amount, objective or purpose and beneficiaries.	1	1
21. Budgets, indicating: description of the main budget items and up-to-date and comprehensible information on their state of execution and on compliance with the objectives of budgetary stability and financial sustainability.	1	1
22. Annual accounts and the reports on the audit of accounts and audits by the external audit bodies.	1	1
23. Remuneration received by senior officials and heads of institutions and allowances received on leaving office.	1	1
24. Resolutions of authorisation or recognition of compatibility affecting public employees as well as those authorising the exercise of private activity upon termination of senior officials.	1	1
25. The annual declarations of assets and activities of local representatives, under the terms provided for in Law 7/1985, of 2 April 1985, Regulating the Bases of the Local Regime.	1	1
26. Statistical information necessary to assess the degree of compliance and quality of public services.	1	1
27. List of immovable property owned by the entity or over which it has a right in rem.	1	1

$$CoA\ Index = \left(\frac{\frac{25}{27} + \frac{25}{27}}{2} \right) \times 100 = 92.59$$

$$I_H = \frac{2 \cdot 23}{27 + 27} = \frac{46}{54} \approx 0.85$$

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