What determines transparency?
An empirical test for the Italian municipalities

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Abstract - In this paper, we aim at empirically assessing the explanatory power of several factors (socio-demographic, political, fiscal and economic) which determines municipal transparency in Italy. To this end we use a new composite indicator (CTI) built by Galli et al. (2017). Our preliminary results suggest that there is a statistically significant moderate clustering across the Italian municipalities, according to a dichotomical pattern based on the degree of transparency, i.e. they seem to cluster in very low and very high transparent municipalities. As for the determinants, the empirical analysis is underway but the preliminary evidence seems to confirm some results of the literature.

JEL Classification: K2, K4, H3, H7
Keywords: Transparency, local governments, determinants.

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1. Introduction

The increasing demand for transparency is a fundamental claim in democratic societies; its satisfaction is one of the policies undertaken to monitor the performance in the public activity, favour accountability and reduce corruption of public officials (Holzner and Holzner 2006).

Literature about transparency finds the theoretical underpinning in the agency theory and the legitimacy theory (for an extensive review, see FerrazEsteves de Araújo and Tejedo-Romero 2016). There are many definitions of transparency and all of them consider the openness in the flow of economic, political, social information to the relevant stakeholders as the core of the phenomenon (Kaufmann and Kraay 2002; Meijer 2009; 2013). Public administrations are requested to engage in a more active disclosure of information (the so-called proactive transparency), while in the past they were passively providing it on request, and at their own discretion (the so-called reactive transparency) (see, among others, Piotrowski 2008; Meijer et al. 2012). There is a rich literature on the conceptual aspects of transparency, and the contributions on its measurement and consequently the empirical analyses are growing.

As for the measurement, there are several ways to measure transparency. The “bottom up” approach develops measures of transparency based on the stakeholders’ opinions through surveys. Along the lines of this approach, there are few initiatives by international organizations such as the OECD Open Government Data project and the World Economic Forum Global Competitiveness Report, and partial/single country indicators, provided by Transparency International for the Spanish Municipalities, as well as worldwide economic and politico-institutional transparency indexes based on several independent sources (Bellver and Kaufmann 2005). Other contributions have developed specific transparency indexes based on a participatory method, like Ferreira da Cruz et al. (2016) for the Portuguese municipalities and Bertelli and Piotrowski (2010) for the New Jersey municipalities. The “top down” approach, instead, constructs legal/formal indicators moving from the existing transparency regulation. To our knowledge, apart from Galli et al. (2017) there are no

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1 For a recent and extensive review on transparency see Cucciniello et al. (2016).

2 For details, see below, par 2.2.
many contributions in the literature which have tried to estimate a broad transparency indicator based on norms and regulations; however, some contributions have measured fiscal transparency indicators based on financial and non-financial information published on website of public administrations (for a survey, see Jorge et al. 2011).

A recent branch of literature has empirically investigated the determinants of transparency in different countries. Alt et al. (2006), using a unique data set on transparent budget practices, which consists of survey responses to a questionnaire sent to the budget officials of the fifty states of the USA from 1972 to 2002, show that political competition and fiscal imbalances are associated with higher fiscal transparency, while political polarization is associated with lower transparency.

Navarro et al. (2014) find that factors such as financial risk, demography and awareness of stakeholders’ demands have a significant impact on the sustainability-related transparency of information (general, environmental, economic and social) of the local governments in Nordic countries. Esteller and Polo-Otero (2008) find that in the Catalan municipalities fiscal transparency is mostly determined by political competition, the number of inhabitants, and the accumulation of debt. Caamaño et al. (2011) examine budget transparency for 33 municipalities in Galicia and find that unemployment is negatively correlated with fiscal transparency while the institutional variables are not. Bastida et al. (2011) show that municipalities collecting more taxes and receiving more transfers disclose more financial information. Moving from the analysis of fiscal transparency’s website content of the Portuguese and Italian local governments, Jorge et al. (2011) find that the size of the municipalities and the rate of abstentionism in the last local elections are the only significant determinants of transparency. Using a measure of municipal transparency in New Jersey, Bertelli and Piotrowski (2010) find that, among several economic, social and institutional determinants, only the level of education, the percentage of elderly people and the size of the budget are significantly correlated with transparency. Alcaraz-Quiles et al. (2015) provide evidence that socio-economic factors such as education, population density, access to internet as well as e-government factors such as the provision of public information online, the percentage of procedures completed after online start, the level of online services provided and broadband availability, are all relevant to the
disclosure of information by the Spanish regional governments. Albalate (2013), drawing on the 2010 transparency indexes constructed by Transparency International for Spanish Municipalities, finds that large municipalities and left-wing local government leaders are associated with better transparency indexes. FerrazEsteves de Araújo and Tejedo-Romero (2016) analyse the determinants of transparency in Spanish municipalities using the same Transparency International indexes and find that transparency level is associated with unemployment rate, investment, electoral turnout, political ideology, political competition and size of the population, while public debt and gender are not.

In Italy, major reforms have been recently introduced to favor transparency in the public administrations and improve integrity and performance. Public administrations are increasingly required to be more transparent in providing information about their activities with the aim of fostering their accountability, improving the use of public resources and enhancing citizens’ trust in public institutions. Integrity and performance issues in government are at the forefront of the political and economic debate in Italy as well as worldwide (OECD 2012; 2015). At central level, rules have been issued to establish detailed transparency obligations to public administrations and to ensure the monitoring of their fulfilment.

Notwithstanding the significant legislative and administrative efforts undertaken at any level of public administration, apart from Galli et al. (2017), no attention has been paid so far in the economic literature to the measurement of transparency of the Italian public administration nor to explore the issues related to transparency determinants. Starting from this institutional framework, our paper aims at filling this gap, using the transparency index constructed by Galli et al. (2017) for a sample of 524 municipalities located in all the Italian regions to empirically assess the determinants of transparency.

We perform the analysis in two steps: Firstly, we investigate the geographical characteristics of transparency, to assess whether and where spatial dependence occurs. Secondly, we investigate the role that several factors, such as socio-demographic, political, fiscal and economic ones, may play in affecting the transparency of Italian municipalities.
Our preliminary results suggest that there is a statistically significant moderate clustering across the Italian municipalities according to a dichotomical pattern, i.e. they seem to cluster where transparency is either very low or very high. As for the determinants, the empirical analysis is underway; however, the preliminary evidence seems to confirm some of the results obtained in the literature.

The paper develops as follows: Section 2 offers a short overview of the main features of the Italian regulation of transparency of the public administrations and presents the Transparency index built for the Italian municipalities. Section 3 illustrates the empirical analysis. Section 4 provides some concluding remarks.

2. Rules, actors and measurement of transparency

2.1 Rules and actors of transparency

The issue of transparency of public sector organizations is at the forefront of the political debate in Italy and it has evolved in the last fifteen years (Cacciatore et al, 2016). A detailed description of Italian legislation on transparency is outside the scope of this paper. Here, it is worth noting that the 2009 reform\(^3\) has established new rules and standards for transparency as well as for the performance of central government, emphasizing the connections with the aim of improving public sector accountability. An independent specialized Commission (Commissione per la valutazione, l’integrità e la trasparenza delle pubbliche amministrazioni – CiVIT) has been instituted to oversee the implementation of such a reform. Focusing on transparency, it appears that from the beginning the way toward the availability of good quality information has been quite arduous (CiVIT, 2012).

Since the 2009 reform, the legislation on transparency has evolved through time enhancing the role of transparency to promote integrity and prevention of corruption. A crucial step of this renewed effort is the Anticorruption Bill\(^4\), which, among the other things\(^5\), has put the basis for a new

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\(^3\) Legislative Decree n. 150/2009 containing provisions on “optimization of the productivity of public employees and efficiency and transparency of public administrations”.

\(^4\) Law no. 190/2012, containing “Provisions for the prevention and repression of corruption and illegality in Public Administration”.


regulation\textsuperscript{6} issued in 2013 on publication requirements, transparency and disclosure of information by public organizations. The new rules enlarge the number of very detailed obligations (about 270) to be published in a standardised format (Amministrazione trasparente)\textsuperscript{7} and extend transparency obligations to all public offices at any level of government and public companies (more than 10,000 subjects). Moreover, the access to information has been made easier (civic access) and, in the same direction, the generalized dissemination of information upon request has been also introduced in 2016\textsuperscript{8}.

The implementation of the transparency rules introduced in 2013 requires the interaction of several actors. In each public organization, on the one hand, the Responsible for Transparency is encharged of the implementation of transparency obligations; on the other hand, the Independent Evaluation Unit (Organismo Indipendente di Valutazione - OIV) is appointed by the political decision-maker to assess the fulfilment of transparency obligations and certifies it on the organization’ s web site. Last bust not least, the crucial role of public opinion deserves attention since it allows for the indirect monitoring of the degree of transparency of each public organization.

At central level, the National Anticorruption Authority (Autorità Nazionale Anticorruzione - ANAC)\textsuperscript{9} performs regulatory and monitoring functions\textsuperscript{10}, with the power of issuing sanctions for non-compliance. However, in practice, monitoring refers only to very small samples, especially if

\textsuperscript{5}For details on the provisions of the Anticorruption Bill and on its implementation, see ANAC (2013), ANAC (2014) and ANAC (2015).

\textsuperscript{6}Legislative decree n. 33/2013 containing “Rules about publicity, transparency and information provision of public administrations.”

\textsuperscript{7}Transparency obligations refer to both the integrity and the performance of public organizations, including, among the others, information about politico-administrative bodies and top public managers and officials, the private-public companies providing local public services, external consulting and collaborations, public procurement, management of the property and assets, timing of the payments and provision of public services.

\textsuperscript{8} Legislative decree n. 97/2016, containing “Revision and simplification of rules on the prevention of corruption, publicity and transparency”. It is part of a wider reform for the reorganization of public administrations and it follows the Freedom of Information (FOI) approach.

\textsuperscript{9} The National Anticorruption Authority is identified in the former Commission for Evaluation, Transparency and Integrity (CIVIT). Law 114/2014 has redesigned its mission: among the otherits powers to prevent corruption and to foster transparency have been enlarged.

\textsuperscript{10}The legislative decree n. 97/2016 has entitled ANAC to diversify obligations across administrations depending on the type and the size and has enlarged ANAC’s sanction powers.
compared with the huge number of public organizations, subjected to transparency regulation\textsuperscript{11}. ANAC has carried out monitoring both indirectly, using OIVs statements, and directly, verifying public organizations websites. The comparison between direct and indirect monitoring shows that in some cases OIVs’ statements certifies a higher degree of fulfilment than the one assessed by ANAC through direct monitoring, especially as far as the quality, openness and updating of data are concerned (ANAC 2013).

Though caution is needed because of the very small samples, looking at ANAC monitoring evidence, (ANAC 2013; 2015; 2016) compliance appears rather jeopardized across different types of public organizations, with small municipalities exhibiting more difficulties of compliance than larger ones, and in relation to the type of information. While the publication of data is overall rather widespread, it seems that information, which is more related to management and performance, are less transparent than others. A closer analysis of the degree of fulfilment of transparency obligations is offered by Galli et al. (2017), as indicated below.

2.2. A Transparency Index for the Italian municipalities

As it was outlined before, transparency can be measured both with a “bottom up” and a “top down” approach.

The “top down” approach is suitable to measure transparency in the Italian case where there is a complex legislative framework, which disciplines transparency obligations and the monitoring of their fulfilment.

Galli et al. (2017) follow a “top down” approach to construct an indicator of transparency moving from the existing set of rules. To this aim, they first build a completely new dataset containing transparency obligations validated by the OIV of each administration\textsuperscript{12}, according to ANAC

\textsuperscript{11}Monitoring is undertaken both on single public organizations (mainly in response to complaints on non-compliance) and on samples of public organizations (ex officio). ANAC has monitored ex officio\textsuperscript{165} different types public organizations in 2013-14;\textsuperscript{98} different types of public organizations in 2015 and \textsuperscript{42} different types of public organizations in March 2016. For more details, see ANAC (2013, 2015 and 2016).

\textsuperscript{12}By law all the institutions are requested to publish the OIVs certifications and the relative filled-in format on their websites under the section AnministrazioneTrasparente.
resolution n.77/2013. Then, they organize the selected information in two groups: one labelled *Integrity*, includes items such as income and asset disclosure and conflicts of interest (on both politicians and top and senior public officials); the other, labelled *Performance*, includes information about the management of public property, the timeliness of public services provision, the quality of public services. The value of each of the selected items is based on the OIV evaluation (according to the criteria established by ANAC) in terms of level of publication, degree of completeness and qualitative information and is given equal weight, consistently with the ANAC methodology.

The outcome is a new composite indicator of transparency (CTI), which is constructed as a simple average of the two sub-indicators referring to *Integrity* (CTI *Integrity*) and *Performance* (CTI *Performance*).

3. Data, methods and empirical strategy

3.1. The sample

In this section, we aim at empirically verifying which are the determinants of the Italian municipal transparency, measured as in Galli et al. (2017). To this end, we first look for possible clustering patterns caused by spatial spillovers; then we analyze the effect that different independent variables - socio-demographic, fiscal, political and economic ones – have on transparency compliance, including the spatial dimension. Transparency is measured using the CTI, built in Galli et al. (2017), for a sample of 524 Italian municipalities. The sample is quite diversified: it encompasses both larger (above 150,000 inhabitants) and smaller (below 15,000 inhabitants) municipalities, ranging from Rome (2,617,175 inhabitants) to Moncenisio (39). Although 78% of the municipalities have population below 15,000 inhabitants they account only for the 8% of the population of the overall sample. The largest municipalities (representing the 43% of the overall sample) are located in the North, with the exception of Rome, Naples and Bari. Relatively large cities - below 250,000 to 45,000 inhabitants - count for the half of the population and are mostly

13 The sample corresponds almost entirely to the one selected by ANAC for its monitoring activity.

14 The mean and median population of all the Italian Municipalities in 2013 were about 7,500 and 2,500 inhabitants, respectively. Therefore, a municipality with more than 15,000 people is considered a medium-large city.
located in the Centre. Specifically, 224 are in the Northern regions (Piemonte, Valle d’Aosta, Liguria, Lombardia, Veneto, Friuli-Venezia Giulia, Trentino-Alto Adige, Emilia-Romagna), 95 in the Central ones (Lazio, Marche, Toscana ed Umbria) and 205 in the Southern areas (Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sardegna, Sicilia). The indicator was calculated for 2013, the first year of the implementation of the new transparency regulation. Table 1 summarizes the descriptive statistics of the sample distribution by geographical area.

Table 1. Sample distribution by geographical area

<table>
<thead>
<tr>
<th>Macro Area</th>
<th>Number</th>
<th>%</th>
<th>Cumulate</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>224</td>
<td>43%</td>
<td></td>
</tr>
<tr>
<td>Centre</td>
<td>95</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>205</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>All sample</td>
<td>524</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cohorts of Population (inh. %)</th>
<th>250,000 and above</th>
<th>249,999-90,000</th>
<th>89,999-45,000</th>
<th>44,999-15,000</th>
<th>Below 15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>3%</td>
<td>10%</td>
<td>6%</td>
<td>4%</td>
<td>78%</td>
</tr>
<tr>
<td>Centre</td>
<td>2%</td>
<td>12%</td>
<td>8%</td>
<td>4%</td>
<td>74%</td>
</tr>
<tr>
<td>South</td>
<td>2%</td>
<td>6%</td>
<td>8%</td>
<td>3%</td>
<td>80%</td>
</tr>
<tr>
<td>All sample</td>
<td>2%</td>
<td>9%</td>
<td>7%</td>
<td>4%</td>
<td>78%</td>
</tr>
</tbody>
</table>


3.2. Spatial analysis

The first line of empirical analysis aims at investigating the geographical dimension of transparency, to assess whether there is evidence of similarities in the transparency behaviour of municipalities in relation to their geographical location. To analyze space dependence, the most known indicator is the Moran’s I (MI) (Moran, 1950). This indicator is the statistics mostly used to identify spatial interactions and test whether socio-economic phenomena either cluster or are randomly spread throughout space.

In our case the MI is used to investigate if the attribute values of a specific unit (i.e. the degree of transparency of each municipality) cluster with neighbors. Formally, this relation is expressed as follows:

\[
I = \frac{N}{W} \sum_i \sum_j w_{ij} (x_i - \bar{x})(x_j - \bar{x}) \frac{1}{\sum_i (x_i - \bar{x})^2}
\]
where $N$ is the number of municipalities indexed by $i$ and $j$, $x$ is the variable of interest; $\bar{x}$ is its mean, and $wij$ is an element of the spatial weights matrix $Wij$, which is defined as distance-based spatial weights matrix, where the definition of neighbor is based on the distance between polygon centroids\textsuperscript{15}. The matrix is the standardized by row. If many neighboring features have high or low cross-products, then there is clustering. The test result is interpreted like a correlation result as it varies between -1 and 1. A positive coefficient means positive spatial autocorrelation, the opposite a negative one. In the first case, similar values cluster together, while in the latter dissimilar values cluster. A value close to zero identifies a random spatial pattern. Statistics can be represented both in a scatterplot, i.e. the Moran’s scatterplot (as in Figure 1), or in a map (as in Figure 2.b). In the scatter plot, which is rescaled on the mean, the spatial lag is specified on the y-axis, while x-axis are standardized and the units correspond to standard deviations\textsuperscript{16}. Each quadrant corresponds to a different type of spatial autocorrelation: high-high (Quadrant II) and low-low (Quadrant IV) for positive spatial correlation or spatial clusters; high-low (Quadrant I) and low-high (Quadrant I) for negative spatial correlation or spatial outliers. As for transparency, the $MI$ provides a global statistic which in our case is 0.1106 ($p = 0.001$)\textsuperscript{17}, showing a moderate but significant spatial autocorrelation in our sample (see Figure 1).

Figure 1 – Moran’s I scatter plot

\textsuperscript{15}We do not use a weights file based on simple contiguity, since there are two islands (Sicily and Sardegna).

\textsuperscript{16}Any observations beyond 2 standard deviations are typically categorized as outliers.

\textsuperscript{17}Randomization was tested on 999 permutations.
To further investigate where the municipalities are clustering relatively to their degree of transparency compliance, we estimate the Local Indicators of Spatial Association (LISA) which not only assess for local clustering, but also identify the presence of local significant spatial clusters (the high-high and low-low locations) or local spatial outliers (the high-low and low-high locations).

Figure 2 depicts, on the left side, the map of the 524 municipalities considered in our sample; on the right side, the Local Moran’s Map, which shows the clusterings of the CTI. The municipalities where high rates cluster with high rates are colored in red; those where low rates cluster with low rates are colored in blue. There is also a mix of high-low (light red) and low-high (light blue) outcomes.

We are able to identify a statistically significant moderate clustering of transparency across the Italian municipalities according to a dichotomical pattern, i.e. they seem to cluster in very low and very high transparent municipalities.

Figure 2– Sample Map and CTI Local Moran’s Map

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18 We recall here that the “so-called spatial clusters shown on the LISA cluster map only refer to the core of the cluster. The cluster is classified as such when the value at a location (either high or low) is more similar to its neighbors (as summarized by the weighted average of the neighboring values, the spatial lag) than would be the case under spatial randomness. Any location for which this is the case is labeled on the cluster map. However, the cluster itself likely extends to the neighbors of this location as well” (Anselin, 2005).
While about 300 municipalities do not appear clustered, geographical agglomeration emerge in the two polar cases, when transparency is either very high or very low.

3.3. Regression analysis

Following the existing literature on the determinants of transparency, we estimate the following equation, first with a OLS cross-section, then taking into account the spatial dependency highlighted by the MI:

\[ \text{Transparency Index}_i = \beta_0 + \beta_1 \text{Unemployment}_i + \beta_2 \text{Digital Divide}_i + \beta_3 \text{Education}_i + \beta_4 \text{Electoral Turnout}_i + \beta_5 \text{Gender}_i + \beta_6 \text{fiscal autonomy}_i + \epsilon_i \]

where:

the dependent variable \text{Transparency Index} is measured as in Galli et al. (2017);

the independent variables are grouped in socio-demographic, fiscal, political and economic ones.

Socio-demographic variables:

\textit{Population}: Size of the city in terms of inhabitants (in thousands). This variable tests for differences in transparency by size of city. It has usually been included in previous works that have found a positive and statistically significant impact (Styles and Tennyson 2007; Esteller and Polo-Otero, 2009; Jorge, et al. 2011). The data come from Istat.

\textit{Gender}: Percentage of women over the total local population. The data are collected from Istat.

\textit{Elderly}: Percentage of citizens aged 65 years or older over the total local population. The weight of website information within the transparency index may be a source of a negative relationship between the elderly and transparency. The data are collected from Istat.

\textit{Education}: Percentage of students with a diploma in secondary school. The data are collected from Istat.

Fiscal variables:

\textit{Fiscal autonomy}: The percentage of own taxes over the total revenues, as a proxy for accountability. The data are collected from Istat.
Political variables:

*Left_Mayor:* Dummy variable taking a value of 1 if the ruling local government leader belongs to a left-wing party, and 0 otherwise. This variable tests for the role of ideology, assuming that left-wing governments might be more sensitive to the provision of transparency than right-wing parties (see Piotrowski and Van Ryzin, 2007). The data are collected from the Ministry of Home Affairs.

*Turnout:* Percentage of participation in the last local elections in the municipality. This variable serves as a proxy for citizens’ interest in politics and consequently for the demand of accountability and transparency. The data are collected from the Ministry of Home Affairs.

Economic variables:

*Unemployment:* Share of unemployed inhabitants in the municipality. The data are collected from Istat.

*Digital Divide:* Share of people who have access to information and communication technology. The data are collected from the Ministry of Economic Development.

The empirical analysis is underway but the preliminary evidence seems to confirm some of the results in the literature.
References


