ABSTRACT

The transparency of governments to their citizens is seen as a necessary factor in democratic accountability and, consequently, in the consolidation of democracy. Although the importance of transparency in government is often highlighted, its causes are still unknown, especially in the Brazilian context. Following the trend of international empirical research, this exploratory study investigates the relationships between three sets of variables (current and past fiscal variables, socioeconomic variables and political variables) and fiscal transparency in the Brazilian subnational context. To identify the relationship between fiscal, socioeconomic and political variables and fiscal transparency, the multiple linear regression technique was used. Prior to conducting the regression using the method of ordinary least squares, factor analysis was used, aiming to group the fiscal and socioeconomic variables into factors not only to reduce their quantity but also to eliminate their multicollinearity problems. Political variables, due to their qualitative nature, remained in their original form. The factor analysis sorted the variables into two groups: fiscal and socioeconomic factors. Because multiple regression allows only for the evaluation of the relationship between the parties included in the sample and the reference party, an F test was used to assess differences in the level of transparency among political parties. The results indicated that fiscal and socioeconomic variables explain the transparency levels of the Brazilian States. However, the political variables were not significant, indicating that the disclosure of fiscal information in Brazil seems not to be influenced by political ideologies. Furthermore, it is evident that the lack of a regulatory model of transparency in the budget process leads States to disclose a great deal of information about budget execution. Finally, the findings indicate that as an instrument for democratic consolidation, fiscal transparency remains incipient in Brazil.

Keywords: Fiscal transparency. Democratic accountability. Political parties. Subnational government.
Although the term “fiscal transparency” is recent and has been in the spotlight in recent years, the primary concern related to the term has a long history. The formation of the liberal state and representative democracies encouraged the fight against the opacity that prevailed in monarchical regimes and the legislative branch’s establishment of executive-branch accountability.

In recent decades, however, the expression “fiscal transparency” seems to have become ubiquitous, and its application has transformed into something bigger than the accountability of the executive branch by the legislative branch, incorporating aspects related to market requirements, civil demands from civil society and citizen participation in establishing public budgets (Caamaño-Alegre, Lagos-Peñas, Reyes-Santias, & Santiago-Boubeta, 2013). Considering the Spanish context, the authors emphasize that in the subnational context, the importance of fiscal transparency cannot be underestimated given that as paradoxical as it may seem, the globalization process has strengthened the role of local government in the development and management of public policies, which has led to substantial changes in the public management process, including, inter alia, a focus on service quality, decentralization, management professionalization and privatization.

In Brazil, as stated by Loureiro, Teixeira and Prado (2008), this process may have been partly influenced by globalization, but the big push for transparency began with the Federal Constitution (FC) of 1988’s establishment of article 5, paragraph XXXIII, which states that all people have the right to receive information of particular interest or of collective or general interest from government agencies, to be provided within the period established by the law, subject to liability, except for information whose secrecy is essential to the security of society and the State. In addition, article 37 defines the form of user participation in direct and indirect public administration; and in article 216, the responsibility of public administration for the management of the government is defined. The FC of 1988 also returned federative autonomy to the states; until then, the states, under the Constitution of 1967, were subject to the authority of the federal government.

According to Loureiro et al. (2008), this process of change resulted in greater administrative autonomy for subnational units and aroused the interest of many actors to know what governments do and the cost at which they do it. Consequently, more importance was assigned to local governments in the development and management of public policies because they are geographically smaller units and more prone to surveillance by citizens. Therefore, international fiscal transparency organizations consider this level of government to be the best suited to test new models of transparency and from there, to extend those models to national governments.

Because of these transformations, the Code of Good Practices on Fiscal Transparency was implemented by the Organization for Economic Cooperation and Development (OECD) and the International Monetary Fund (IMF), whose purpose is to guide countries to greater openness in the decision process related to their fiscal policies.

Brazil followed this trend. Its administrative State reform, drafted in 1995, enabled modernization of the administrative structure with the implementation of communication tools such as e-government. More recently, with the approval of the so-called Transparency Law (Complementary Law 131/2009), the federal government, the states and the municipalities were required to present all of their expenses in a transparent manner. Because of this law, since May 2010, the federal government, states and municipalities with more than 100,000 inhabitants have been obligated to maintain and update transparency portals on public spending, whereas municipalities with a population between 50,000 and 100,000 inhabitants had until the end of 2011 to comply with the law. For municipalities with fewer than 50,000 inhabitants, the deadline was set for May 2013.

However, according to research by the Institute for Socioeconomic Studies [Instituto de Estudios Socioeconómicos-INESC] (2011), no Brazilian capital fully complied with Complementary Act 131/2009 until the end of 2010. News published in the Folha de São Paulo newspaper shows the same situation in municipalities with populations of 50,000-100,000 inhabitants; however, no studies were published on the theme. According to Complementary Law 131/2009, entities that did not provide their budgetary and financial information within the deadlines set would be forbidden from receiving voluntary transfers (federal money) while non-compliant. Currently, there are no known cases of transfers not having been performed due to non-compliance with the law.

In addition to Complementary Law 131/2009, Law 12.527/2011 advocates the following measures: (1) the consolidation and definition of a regulatory framework for access to public information in the custody of the State; (2) the establishment of procedures for the public administration to respond to citizen requests for information; and (3) the determination that access to public information is the rule and not the exception. Thus, this legal instrument should constitute one of the bases to build the transparency and expansion process of social control over public affairs and to make Brazil one of the 89 countries with a law on access to public information.

Despite legal efforts, studies conducted in Brazil (Akutsu & Pinho, 2002; INESC, 2011; Loureiro, Teixeira, & Moraes, 2009; Pinho, 2006; Santana Junior, 2008) and overseas (Caamaño- Alegre et al., 2013; Herawaty & Hoque, 2007; Justice, 2006; Pérez, Bolivar, & Hernandez, 2013) & Teixeira, 2012).

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1 Law 12.572/2011, the General Law on Access to Information [Lei Geral de Acesso à Informação], represented a milestone in this process because it regulated societal access to government information (Angélica & Teixeira, 2012).

2. THEORETICAL FRAMEWORK

2.1 The Importance of Research and Different Approaches to Transparency.

Fiscal institutions define the environment in which political actors, voters and the market interact. “Institutions affect behavior by producing actors with more or less certainty about the present and future behavior of other actors” (Hall & Taylor, 2003, p. 196). Based on this statement, Alt, Lassen and Rose (2006) emphasize that the understanding that institutions are important for choices and results constituted the basis for the last two decades’ increased concern for the principles of good governance, in which government transparency plays a prominent role.

Furthermore, in accordance with Alt et al. (2006), increasing fiscal transparency is a way to provide voters, observers, financial markets and often politicians themselves with more information about the intentions underlying fiscal policy, about the possible actions taken by public managers and about the immediate and long-term consequences of established policies. As a result, Grigorescu (2003) notes that currently, many scholars are increasingly aware of the importance of this issue and its potential explanatory power. That author also suggests that due to the variety of interests involved in the flow of information, the concept of transparency is not monopolized by any area of study, and it can be found in studies on international conflicts, international organizations, political environment, monetary policy, trade, corruption, democratic theory and public management, among others.

Finel and Lord (1999) emphasize that regardless of the area studied, most studies perceive government transparency as a factor that supports increased cooperation between States, allowing collective problems to be solved. Corroborating this idea, Ritter (2000) states that one of the most recent explanations for democratic peace is based on the transparency of democracies. The author further argues that the reason for this explanation is that negotiations between countries that have “complete information” on each other are less likely to generate conflicts.

More specifically, transparency in the context of national governments can be seen as a mechanism for reducing...
the degree of corruption or improving economic performance. The transparency of national governments plays the fundamental role of explicitly contributing to increased accountability and implicitly contributing to democratic consolidation (Kopits & Craig, 1998). According to this author, the democratic theory considers that a fundamental characteristic of democracy is the government’s continuing responsiveness to its citizens’ preferences. Thus, governmental transparency to citizens is seen as a necessary factor for democratic accountability and, consequently, for the consolidation of democracy.

Despite the importance given to the subject in the last decade, which caused the increasing presence of the concept of transparency in the academic literature, its meaning remains fluid, i.e., it is not yet a solidified concept, instead varying among different areas of knowledge. In part, this situation is due to the use of the transparency concept in different aspects related to information flow.

An example is the use of the term in the literature on conflicts between countries, which argues that a country is transparent if another country can obtain information about its societal preferences and support for government actions (Schultz, 1999).

In political science, the concept of transparency is associated with the government’s disclosure of information to internal and external actors (Grigorescu, 2003) and the consequent use of that disclosure as an instrument of public agents’ accountability when they adopt a procedure inconsistent with the proper use of public funds (Loureiro, Teixeira, & Prado, 2008).

In the field of public administration, Birkinshaw (2006) states that transparency can be understood as the management of public affairs for the public. Black (1997) completes that definition stating that transparent policies are the opposite of opaque policies, in which there is no access to decisions, to what they represent, to how they are made or to what is gained or lost with them.

As noted above, the previously presented concepts refer broadly to transparency, not specifying dimensions of transparency that are more specific, such as fiscal transparency, transparency in international relations, etc. Seeking greater specificity in the conceptualization of fiscal transparency, the following section presents the transparency concept and the studies that indicate its possible causes.

2.2 Fiscal Transparency.


Fiscal transparency is defined (...) as openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities (...) so that the electorate and financial markets can accurately assess the government’s financial position and the true costs and benefits of government activities, including their present and future economic and social implications.

Alt et al. (2002) emphasize that the most important aspects of fiscal transparency are commitment to a non-arbitrary language, the possibility of independent verification and the ability to access more information in fewer documents.

Seeking to render the concept of transparency more applicable and less utopic, the editors of the OECD’s Best Practices for Budget Transparency define transparency as “openness about policy intentions, formulation and implementation” and budget transparency as “the full disclosure of all relevant fiscal information in a timely and systematic manner” (Organisation for Economic Cooperation and Development, OECD, 2001, p. 7). Table 1 shows, according to “Best Practices for Budget Transparency,” how budgets should be prepared, the data to be reported and the procedures necessary to ensure their integrity.

<table>
<thead>
<tr>
<th>Budget Reports</th>
<th>Specific Evidence</th>
<th>Integrity Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>Economic assumptions</td>
<td>Accounting Policies</td>
</tr>
<tr>
<td>Pre-budget Report</td>
<td>Fiscal Expenses</td>
<td>Processes and Responsibilities</td>
</tr>
<tr>
<td>Monthly Report</td>
<td>Financial Assets and Liabilities</td>
<td>Audit</td>
</tr>
<tr>
<td>Biannual Report</td>
<td>Non-financial Assets</td>
<td>Preliminary Public Scrutiny</td>
</tr>
<tr>
<td>Annual Report</td>
<td>Pensions and Retirement Obligations</td>
<td></td>
</tr>
<tr>
<td>Pre-election Report</td>
<td>Contingent Liabilities</td>
<td></td>
</tr>
<tr>
<td>Long-term Report</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


As observed from the quotes and studies described above, the concern with transparency seems to have become important in the late 1990s. As noted by Prado, Ribeiro and Diniz (2012), there are at least two reasons
for this situation. The first is associated with the emergence of the use of interactive technologies as a mass phenomenon, particularly related to the expansion of the Internet. The second is related to the consolation of administrative modernization models of the public sector within the state reform context based on the intensive use of Information and Communication Technologies (ICT).

Within the theoretical framework of fiscal transparency (regardless of the existence of electronic means of public access) and best practices in fiscal transparency, several studies have sought not only to identify the levels of transparency in countries, states and municipalities but also to understand their causes and consequences.

According to Jarmuzek et al. (2009), these studies have relied on a broad literature on the political and institutional aspects of fiscal policy; therefore, most of them have sought to understand the relationship between transparency and the political, institutional and economic dimensions of governments.

Some theoretical results of the transparency effect in fiscal policy are noted by Shi and Svensson (2006), Besley (2007), Alt et al. (2006) and Caamaño-Alegre, Lago-Peñas, Reyes-Santias and Santiago-Boubeta (2013); however, as noted by Alt et al. (2006), the effects of fiscal transparency depend on the issues under consideration. The authors emphasize, however, that with respect to the causes of fiscal transparency, these studies’ main empirical conclusion is that increases in transparency are related to the reduction of indebtedness and the possibility of generating budget cycles for political purposes.

Although empirical studies have sought to investigate the external causes of fiscal transparency, few studies have proposed to study its endogenous causes. In this sense, to explore the (endogenous) determinants of fiscal transparency in the American states, Alt et al. (2006) use panel data to assess the evolution of budgetary procedures of those states during the period 1976-1999. Their quantitative analysis assesses the impact of (1) political competition, (2) political polarization, (3) level of government competition, (4) government debt, (5) fiscal surplus and (6) fiscal deficit. In addition, they conduct case studies in four American states (Delaware, North Carolina, Rhode Island and Wyoming) and find evidence that both the political scene and the fiscal environment affect the level of transparency.

With respect the political scene, the authors find that greater political competition is associated with a higher level of fiscal transparency, whereas political polarization is associated with lower levels of fiscal transparency, which suggests that changes in the level of fiscal transparency occur to a lesser degree when political competition occurs between only two parties.

Corroborating these findings, Dahl (2012) claims that the development of a political system that allows for opposition, rivalry and competition between a government and its opponents is an important aspect of democratization. Accordingly, that author also states that a key feature of democracy is the government’s continuous responsiveness to the preferences of its citizens, considered as political equals.

Furthermore, Alt et al. (2002) empirically support the proposition by Ferejhion (1999), namely, that high transparency is associated with the amount of State intervention in the economy. Those authors investigate the possible association between fiscal transparency with the Democratic and Republican parties. To them, Democrats are widely renowned as more favorable to state intervention in the economy than are Republicans. However, these variables are not statistically significant for the sample and period selected.

The results presented by Alt et al. (2006) indicate that fiscal variables are relevant to establish the level of transparency. They argue that a high debt level is associated with low transparency and that both deficit and surplus are associated with a high level of transparency. They emphasize that the result associated with deficit indicate that when economic conditions are not favorable, politicians must increase the level of disclosure to justify their political choices. With respect to surplus, they emphasize that the reason for this result is that when politicians have good fiscal performance, they are more willing to disclose their results and to use them against their competitors.

Bellver and Kaufmann (2005) have built a transparency index for 194 countries based on more than twenty independent sources. The index includes an aggregated transparency indicator with two components: economic/institutional transparency and political transparency. The results indicate that transparency is associated with better socioeconomic and human development indicators, a high level of competitiveness and a low level of corruption.

Furthermore, Caamaño-Alegre et al. (2013) note that total public expenditure and the age of the elderly population have positive effects on fiscal transparency, whereas personnel expenses and financial burdens have a negative impact. Grigorescu (2003) complements these causes by noting that debts to international organizations have a positive relationship to transparency because international organizations require governments to disclose more information. In the Brazilian scenario, the study by Paiva and Zuccolotto (2009) indicates that appropriate revenue and human development are related to transparency, whereas the study by Cruz, Ferreira, Silva and Macedo (2012) points to tax revenue and the Municipal Dynamism Index (Índice Dinamismo Municipal-IDM)3 as its main determinants.

3 The IDM is an index prepared by the Institute of Applied Economic Research (Instituto de Pesquisa Económica Aplicada - IPEA) that aims to capture the recent economic performance of Brazilian municipalities.
3 METHODOLOGY

3.1 Study Population.

The Brazilian Federative Republic is formed from the indissoluble union of Brazil’s states and municipalities together with the Federal District. Brazil has 26 states, 5,570 municipalities and one Federal District (Brazilian Institute of Geography and Statistics [Instituto Brasileiro de Geografia e Estatística]-IBGE, 2013). This study will investigate the 26 states comprising the Federative Republic of Brazil and the Federal District. The Federal District has specific legislative and administrative characteristics. Sometimes it is similar to a state, and at other times, it is similar to a municipality.

3.2 Variables Investigated.

3.2.1 Dependent variable.

As a measure of the fiscal transparency of Brazilian states, the index for the year 2010 developed by Biderman and Pottomatti (2010) for the Non-Governmental Organization (NGO) Contas Abertas was used in this study. That index aims to develop fiscal transparency parameters and objective assessment methods to create indexes for federation units, taking into account studies on parameters already adopted in existing methodologies, both in Brazil and overseas. Based on these parameters, three indexes were developed: the State Transparency Index (STI), the Municipality Transparency Index (MTI) and the Federal Government Transparency Index (FGTI).

The parameters used by the authors for the STI are presented next.

3.2.2 Fiscal transparency parameters.

Under the terms of Complementary Law 131 and from the perspective of fiscal transparency, the authors considered as transparent federal agencies with websites that have three parameters: (1) Content, (2) Time Series and Update Frequency and (3) Usability. Each of these parameters is detailed next. The total score of the three parameters is 2,750 points.

- Content
  According to Biderman and Pottomatti (2010), parameter content comprises the availability of budget execution phases, revenue collection details, easy access to budget classifications and broad disclosure of bidding processes, agreements, contracts and information about civil servants. Its maximum score is 1,650 points, which corresponds to 60% of the total score.

- Time series and update frequency
  This parameter, which has a maximum score is 200 points and represents 7% of the index, comprises the availability of time series (between one and five years) and maximum update frequency for available information (daily, weekly, monthly, quarterly, biannual and annual).

- Usability
  This parameter includes the ability to download data for specific treatments and statistical comparisons, the ability to search using various time intervals (monthly, bimonthly, quarterly, biannual and annual) and interaction with users, making it possible to clarify any doubts, using the following tools: sitemap, glossary, frequently asked questions (FAQs) and the ability to contact by telephone and e-mail.

According to the methodology proposed by the authors, this parameter has a maximum score of 900 points, representing 33% of the Index.

3.2.3 Transparency index calculation.

From the sum of each subitem of the three components: Content, Time Series and Update Frequency, and Usability-the following maximum weights are given:

- $C = \text{Content, with maximum score } = 1,650 \text{ points (60\% of the total)}$
- $TS = \text{Time Series and Update Frequency, with maximum score } = 200 \text{ points (7\% of the total)}$
- $U = \text{Usability, with maximum score } = 900 \text{ points (33\% of the total)}$

$$C_{\text{max}} + TS_{\text{max}} + U_{\text{max}} = 2,750 \text{ points (100\%)}$$

or, in percentage terms (Transparency Index),

$$C_{\text{max}} + TS_{\text{max}} + U_{\text{max}} = 1.$$

Based on these parameters, the authors classified the states by fiscal transparency level. The state with the highest index was São Paulo, and the state with the lowest index was Piauí.

3.2.4 Independent and control variables.

With respect to the independent variables and following the findings of international and national studies, three sets of variables were investigated: fiscal (Alt, Lassen, & Rose, 2006; Cruz, Ferreira, Silva, & Macedo, 2012; Paiva & Zuccolotto, 2009; Zuccolotto, Paiva, & Corrar, 2011), socioeconomic (Bellver & Kaufmann, 2005; Caamaño-Alegre et al., 2013) and political (Alt et al., 2006).

Table 2 shows the independent variables of the study along with their description, period and source.

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* Each state’s transparency index, scoring and parameterization details are available at http://indicedetransparencia.com/.
* To see the complete classification, access http://indicedetransparencia.com/resultado2010/.
With respect to the sign of the variables, it is expected that the fiscal (current revenue, deficit/surplus and indebtedness) and socioeconomic (FMDI education, FMDI employment and income and FMDI health) variables have positive signs, whereas for the political variables (governor's competition and political party), a positive sign is expected for the former and no relationship is expected between political parties and transparency for the reasons outlined above.

It should be noted that the consolidated FMDI was not used because it had multicollinearity problems with the variables FMDI-Health, FMDI-Education, FMDI-Employment and Income, Current Revenue, State Indebtedness and State Fiscal Deficit/Surplus. Thus, the FMDI subindicators were used to compose a new factor using the factor analysis technique and thus to eliminate the multicollinearity problem.

It is worth clarifying that in this study, the variable deficit/surplus means the budget result of the government; therefore, it was not segregated. This choice was made because the existence of multicollinearity among the study variables led us to group them into factors and given that the factor analysis technique cannot be performed with dummy variables, the nominal values of the deficit or surplus were used. In addition, the same methodology was maintained for the regression models, for purposes of standardizing the terms.

### 3.3 Technical Specification of the Study

For the data analysis, the multiple linear regression technique was used. Linear regression, according to Fávero, Belfiore, Silva and Chan (2009), aims to investigate the relationship between two (simple regression) or more (multiple regression) explanatory variables (which are presented in a linear manner) and a metric dependent variable.

Accordingly, the aim is to establish the relationship between the dependent variable (fiscal transparency of States) and the independent variables (FMDI-Health, FMDI-Education, FMDI-Employment and Income, State Indebtedness, State Fiscal Deficit/Surplus, political parties (dummy) and governor’s competition (dummy)).

Due to the multicollinearity problems among variables (FMDI-Health, FMDI-Education, FMDI-Employment and Income, Current Revenue, Current Transfers, State Indeb-

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable description</th>
<th>Period</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMDI-Education</td>
<td>FIRJAN Municipal Development Index—education category—considers in its calculation the following variables: enrollment rate in childhood education; dropout rate; age x grade distortion rate; percentage of teachers with higher education; mean daily classroom hours and IDEB (basic education development index) result.</td>
<td>2010</td>
<td>Federation of Industries of the State of Rio de Janeiro</td>
</tr>
<tr>
<td>FMDI-Employment and Income</td>
<td>FIRJAN Municipal Development Index—employment and income category—considers in its calculation the following variables: formal employment generation; stock of formal employment; and mean wages of formal employment.</td>
<td>2010</td>
<td>Federation of Industries of the State of Rio de Janeiro</td>
</tr>
<tr>
<td>FMDI-Health</td>
<td>FIRJAN Municipal Development Index—health category—considers in its calculation the following variables: number of prenatal visits; ill-defined deaths; and infant deaths due to preventable causes.</td>
<td>2010</td>
<td>Federation of Industries of the State of Rio de Janeiro</td>
</tr>
<tr>
<td>Current Revenue</td>
<td>Inflows of financial resources from operating activities for application to current expenditure, aimed at the funding/maintenance of activities in general and the implementation of government programs and actions. If current revenues exceed current expenses, they may be used to fund capital expenditures.</td>
<td>2010</td>
<td>National Treasury</td>
</tr>
<tr>
<td>Deficit/Surplus (2009) and Deficit/Surplus (2010) (fiscal result of the government)</td>
<td>Government fiscal result is defined as the difference between revenues and government expenditures. When revenues exceed expenditures, there is a budget surplus. When revenues are lower than expenditures, there is a fiscal deficit. In this study, the variable was divided in two-current deficit/surplus (2010) and past deficit/surplus (2009)—and both were calculated according to Law 4,320/64.</td>
<td>2009 and 2010</td>
<td>National Treasury</td>
</tr>
<tr>
<td>Indebtedness (2009) and Indebtedness (2010)</td>
<td>Represents the value of the total debt, which includes the financial obligations in the form of loans, regardless of the period of amortization. In this study, the variable was divided in two-current indebtedness (2010) and past indebtedness (2009).</td>
<td>2009 and 2010</td>
<td>National Treasury</td>
</tr>
<tr>
<td>Political Party</td>
<td>Corresponds to the political party of the governor in office. Only six parties elected governors during the years analyzed: PT, PSDB, PMDB, PMN, PSB and DEM.</td>
<td>2010</td>
<td>Regional Electoral Courts</td>
</tr>
<tr>
<td>Governor’s Competition</td>
<td>Describes the alternation of the governor after the election. However, given the possibility of reelection or of the governor’s succession by a politician of her/his own party, this study chose to use the continuity (or lack thereof) of a particular political party in power after state elections as a proxy for governor competition. In other words, changing the elected governor’s party gives rise to competition, otherwise, no competition is present. The change was defined based on the election results published in 2010 by the Electoral Regional Court (Tribunal Regional Eleitoral-TRE).</td>
<td>2009 and 2010</td>
<td>Regional Electoral Courts</td>
</tr>
<tr>
<td>Per capita revenue</td>
<td>Corresponds to the division of states’ current revenue by their respective populations.</td>
<td>2010</td>
<td>IBGE and National Treasury</td>
</tr>
</tbody>
</table>
tedness and State Fiscal Deficit/Surplus) observed in preliminary tests, the factor analysis technique was applied before the multiple linear regression technique. Fávero et al. (2009) define factor analysis as an exploratory data analysis technique to reduce the number of variables describing a phenomenon and to detect structures in the relationships between variables, thereby classifying them.

Additionally, it should be noted that the purpose of using the factor analysis technique is not only to reduce factors but also to orthogonalize axes to eliminate the correlation between variables. For the composition of factors, the factor extraction method called the principal components method with orthogonal rotation was used in this study, which according to Fávero et al. (2009), produces factors that are not intercorrelated. The rotation method chosen was Varimax with Kaiser normalization. To assess the validity of the factor analysis, the Kaiser-Meyer-Olkin (KMO) criterion, Bartlett's Test and percentage of total variance were used.

Thus, after the application of the factor analysis technique, the variables FMDI-Education, FMDI-Health and FMDI-Employment and Income were transformed into the variable Socioeconomic Factor. The variables Current Revenue, Indebtedness2010 and Deficit/Surplus2010 (fiscal result of the State) became the variable Fiscal Factor.

However, because the multiple linear regression technique only assesses the relationship between the parties included in the regression model and the reference party (in the case of this regression model, the DEM-Brazilian Democratic Party), a variance test (the F test) was performed to detect pairwise differences in transparency levels between the parties.

Our research hypotheses for this study are as follows:

- H$_1$: The states' fiscal conditions affect the transparency index.
- H$_2$: States with better social economic conditions (higher education, health and employment and income development indicators) have higher fiscal transparency indexes.
- H$_3$: States with greater political competition have higher fiscal transparency indexes.
- H$_4$: Political parties do not affect the fiscal transparency level.

To perform the statistical tests, the softwares Stata/SE 12.0 (StataCorp, College Station, Texas, USA) and IBM SPSS Statistic 19 (IBM Company, Armonk, New York, USA) were used.

### 4 PRESENTATION AND DISCUSSION OF THE RESULTS

Before presenting the results and discussion, the descriptive statistics of the variables used are presented in Table 3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTI</td>
<td>27</td>
<td>4.879259</td>
<td>1.002508</td>
<td>3.04</td>
<td>6.96</td>
</tr>
<tr>
<td>FMDI-Employment and Income</td>
<td>27</td>
<td>0.621453</td>
<td>0.113741</td>
<td>0.468904</td>
<td>0.868830</td>
</tr>
<tr>
<td>FMDI-Education</td>
<td>27</td>
<td>0.703223</td>
<td>0.081112</td>
<td>0.567512</td>
<td>0.890886</td>
</tr>
<tr>
<td>FMDI-Health</td>
<td>27</td>
<td>0.776103</td>
<td>0.070372</td>
<td>0.649103</td>
<td>0.889791</td>
</tr>
<tr>
<td>Current Revenue (in millions)</td>
<td>27</td>
<td>18,200</td>
<td>25,500</td>
<td>2,280</td>
<td>131,000</td>
</tr>
<tr>
<td>Deficit/Surplus 2009 (in millions)</td>
<td>27</td>
<td>71.5</td>
<td>309</td>
<td>-893</td>
<td>668</td>
</tr>
<tr>
<td>Deficit/Surplus 2010 (in millions)</td>
<td>27</td>
<td>76.8</td>
<td>566</td>
<td>-865</td>
<td>2,320</td>
</tr>
<tr>
<td>Indebtedness 2009 (in millions)</td>
<td>27</td>
<td>14,700</td>
<td>31,200</td>
<td>208</td>
<td>152,000</td>
</tr>
<tr>
<td>Indebtedness 2010 (in millions)</td>
<td>27</td>
<td>16,200</td>
<td>34,800</td>
<td>207</td>
<td>170,000</td>
</tr>
</tbody>
</table>

As observed in Table 3, the variables FMDI–Employment and Income, FMDI–Education and FMDI–Health had relatively high means (because these indicators oscillate between zero and one) and low dispersion. The State Fiscal Transparency Index of the (FTI) has low mean and dispersion, indicating that Brazilian states have low levels of transparency and that none are very distant from the mean. The fiscal result of the government, measured by the variable Deficit/Surplus, shows a low mean in 2009 and 2010 when compared to the mean of Current Revenue, but year 2010 has a high dispersion of values. The variable Current Revenues has high dispersion, which results in a low means value for these revenues. The mean Indebtedness in both 2009 and 2010 has a high value when compared to revenue, the base to calculate the indebtedness of the states, and high dispersion, which most likely is related to the states’ revenue and size.

Before performing the regressions, the grouping of variables was performed to eliminate, by means of orthogonal rotation, the multicollinearity between fiscal variables and socioeconomic variables, as shown in the methodology. It is worth noting, however, that before the application of the factor analysis technique, the multivariate normality test was conducted for the variables, and the Doornik-Hansen test indicated multivariate normality (Chi2 = 14.614 and ProbChi2 = 0.2632). In addition, tests for assessing outliers indicated the presence of three outliers in fiscal variables: São Paulo, Rio de Janeiro and Minas Gerais. However, due to the objectives of this study, these outliers were kept in the analysis.
Therefore, as shown in Table 4, Bartlett’s test of sphericity and the Kaiser-Meyer-Olkin test revealed that factor analysis can be used because both were statistically significant, indicating that a correlation matrix is not identity, i.e., there is correlation between the variables.

The factor analysis generated two factors that jointly explain 87.93% of the total variance of observations, and after rotation of the axes, these factors were named fiscal factors and socioeconomic factors, as demonstrated in Table 5. The socioeconomic factor is composed of the variables FMDI–Employment and Income, FMDI–Education and FMDI–Health, whereas the fiscal factor is composed of the variables Current Revenue, Deficit/Surplus (fiscal result of the government) and Indebtedness.

Once the factors were defined, the existence of an association between fiscal and socioeconomic factors and the transparency of Brazilian states was identified by means of multiple linear regressions. According to international studies and aiming to eliminate the size effect among the states, the current revenue of each state divided by its population size was used as control variable.

The results indicate that the variable socioeconomic factor was significant at the 5% level, whereas the variable fiscal factor was not significant when this level of significance was considered. However, if we flex the analysis (because this is an exploratory study), these variables were significant at 7%, confirming the first two hypotheses of this study. In other words, states with better socioeconomic and fiscal indicators have better transparency indicators (Table 6).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fiscal Factor</th>
<th>Socioeconomic Factor</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMDI–Employment and Income</td>
<td>0.501</td>
<td>0.702</td>
<td>0.744</td>
</tr>
<tr>
<td>FMDI–Education</td>
<td>0.250</td>
<td>0.895</td>
<td>0.864</td>
</tr>
<tr>
<td>FMDI–Health</td>
<td>0.081</td>
<td>0.957</td>
<td>0.923</td>
</tr>
<tr>
<td>Current Revenue</td>
<td>0.889</td>
<td>0.410</td>
<td>0.958</td>
</tr>
<tr>
<td>Deficit/Surplus 2010</td>
<td>0.920</td>
<td>0.005</td>
<td>0.846</td>
</tr>
<tr>
<td>Indebtedness 2010</td>
<td>0.889</td>
<td>0.388</td>
<td>0.941</td>
</tr>
</tbody>
</table>

<Rotation converged in 3 iterations>

| FTI       | Coefficient | Standard Error | t     | P>|t| | [95% Confidence Interval] |
|-----------|-------------|----------------|-------|-------|--------------------------|
| Fiscal Factor | 0.4023833  | 0.2021588      | 1.99  | 0.063 | -0.0241344 0.828901     |
| Socioeconomic Factor | 0.557164  | 0.1831062      | 3.04  | 0.007 | 0.1708436 0.9434844     |
| PT        | 0.5493719  | 0.7898565      | 0.70  | 0.496 | -1.11708 2.215823      |
| PSDB      | 0.6126648  | 0.7297581      | 0.84  | 0.413 | -0.9269901 2.15232     |
| PMN       | 1.512342   | 1.125696       | 0.34  | 0.197 | -0.8626676 3.887353    |
| PSB       | 0.5428983  | 0.736261       | 0.74  | 0.471 | -1.010477 2.096273     |
| PMDB      | 0.4350907  | 0.7507818      | 0.58  | 0.570 | -1.14892 2.019102      |
| Per Capita Revenue               | -0.0002847 | 0.0001703      | -1.67 | 0.113 | -0.0006444 0.0000746   |
| Governor’s Competition            | 0.2419405  | 0.3971563      | 0.61  | 0.550 | -0.5959868 1.079867    |
| Constant                           | 5.021639   | 0.8325774      | 6.03  | 0.000 | 3.265054 6.778223      |
The regression model met the assumptions of error normality (z = 1.525 and Prob. 0.06361), non-heteroscedasticity of residues (Chi = 0.04 and Prob. = 0.8404) and perfect non-collinearity (variance inflation factor lower than 10 for all variables). Additionally, Alt et al. (2006) emphasize that past fiscal factors also affect the choice of transparency among the American states, and accordingly, a new estimation was performed to identify whether this result would be repeated in Brazil. Thus, the variables Deficit/Surplus (indicating the government’s fiscal result) and Indebtedness were used, both for 2009; however, only the Indebtedness2009 variable was statistically significant, as shown in Table 7.

As shown in Table 7, the variable Deficit/Surplus2009 (2009 fiscal result) was not statistically significant. This can be partly explained by two possibilities: first, the deficit may not yet have been converted into debt (indebtedness); therefore, there are no external pressures for major transparency; second, in the case of surplus, governments may feel comfortable with the amount of information disclosed, as noted by Alt et al. (2006). The first part of this statement can be confirmed by observing that the variable Indebtedness2009 was statistically significant in the model analyzed. The results indicate that present (Table 6) and past (Table 7) fiscal variables were significant in explaining the level of transparency of Brazil’s state capitals, corroborating the findings of international studies, such as those performed by Alt et al. (2006) and Caamaño-Alegre et al. (2013), among others. In addition, for the variable fiscal factors, the significance level of the analysis was flexed 7%. Furthermore, the fact that the variable Indebtedness2009 has a positive coefficient corroborates the assertion by Alt et al. (2006) that the main empirical conclusion of studies on transparency is that an increase in transparency is related to indebtedness and the possibility of generating budget cycles with political purposes. Nevertheless, the results must be viewed with caution because although statistically significant, the indebtedness coefficient is of little economic significance.

With respect to the socioeconomic factors, Table 6 indicates that states with better education, health and employment income have reached an acceptable level, the population itself will pressure its government to maintain good levels of services and certainly will contribute to keeping those services in good working condition. This result corroborates the findings of the international literature, such as the seminal study by Bellver and Kaufmann (2005).

Regarding political parties, Table 6 indicates that this variable was not statistically significant. It should be noted that the party adopted as the reference for the definition of dummy variables was the DEM and accordingly, the results indicate that no party differed from the DEM in terms of transparency because none displayed significant coefficients (p-value <0.05).

Therefore, an F test was performed to check whether the level of transparency was different among the parties. As shown in Table 8, the results indicate that no difference is found in the level of transparency among parties.

### Table 7

| FTI                  | Coeff. | Std. Err. | t  | P>|t| | [95% Conf Interval] |
|----------------------|--------|-----------|----|------|---------------------|
| Deficit/Surplus 2009 | -0.000000004 | 0.000000008 | -0.81 | 0.428 | -0.00000001         | 0.000000007 |
| Indebtedness 2009    | 0.000000001 | 0.0000000005 | 3.28 | 0.003 | 0.0000000007        | 0.000000003 |
| Per Capita Revenue   | -0.000201 | 0.0001577 | -1.27 | 0.215 | -0.0005272          | 0.0001252 |
| Constant             | 5.15304 | 0.4992512 | 10.32 | 0.000 | 4.12026             | 6.18582 |

As shown in Table 7, the variable Deficit/Surplus2009 (2009 fiscal result) was not statistically significant. This can be partly explained by two possibilities: first, the deficit may not yet have been converted into debt (indebtedness); therefore, there are no external pressures for major transparency; second, in the case of surplus, governments may feel comfortable with the amount of information disclosed, as noted by Alt et al. (2006). The first part of this statement can be confirmed by observing that the variable Indebtedness2009 was statistically significant in the model analyzed. The results indicate that present (Table 6) and past (Table 7) fiscal variables were significant in explaining the level of transparency of Brazil’s state capitals, corroborating the findings of international studies, such as those performed by Alt et al. (2006) and Caamaño-Alegre et al. (2013), among others. In addition, for the variable fiscal factors, the significance level of the analysis was flexed 7%. Furthermore, the fact that the variable Indebtedness2009 has a positive coefficient corroborates the assertion by Alt et al. (2006) that the main empirical conclusion of studies on transparency is that an increase in transparency is related to indebtedness and the possibility of generating budget cycles with political purposes. Nevertheless, the results must be viewed with caution because although statistically significant, the indebtedness coefficient is of little economic significance.

### Table 8

<table>
<thead>
<tr>
<th>PT</th>
<th>PSDB</th>
<th>PMN</th>
<th>PSB</th>
<th>PMDB</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSDB</td>
<td>F = 0.01</td>
<td>-</td>
<td>Prob F = 0.9066</td>
<td></td>
</tr>
<tr>
<td>PMN</td>
<td>F = 0.90</td>
<td>F = 0.84</td>
<td>Prob F = 0.3712</td>
<td></td>
</tr>
<tr>
<td>PSB</td>
<td>F = 0.00</td>
<td>F = 0.02</td>
<td>F = 0.96</td>
<td>Prob F = 0.3410</td>
</tr>
<tr>
<td>PMDB</td>
<td>F = 0.04</td>
<td>F = 0.12</td>
<td>F = 1.13</td>
<td>F = 0.04</td>
</tr>
</tbody>
</table>

This regression model was conducted separately because the inclusion of these variables in the previous model showed them to be autocorrelated with the “Fiscal Factor” variable.

As observed, the F Test results show low F statistic values and p-value (prob F) higher than 0.05, indicating that no party differs from the others in relation to transparency.

In addition to the political party (Table 6), the analysis of political variables considered the level of competition in the gubernatorial election (Table 6). In both cases, there was no relationship between these variables and states’ fiscal transparency. Thus, the fact that a governor belongs to a political party that represents continuity or change is not associated with the level of transparency of the state that he/she governs, contradicting one of this study’s assumptions. With respect to political parties, it can be concluded that the transparency of Brazil’s subnational states is not associated with either right-wing or left-wing parties. In both cases, the results contradict what Alt et al. (2006) find in their study of American states.

The fact that political parties and governor competition do not affect transparency in Brazil is not surprising; the former was one of the hypotheses of this study because to be elected, governments (and their respective parties) resort to electoral coalitions that often do not obey any logic of party ideology. Furthermore, the fact that these coalitions are not vertical, i.e., that they are not the same at the federal, state and municipal levels, lead parties, which in many cases are ideologically distinct, to form unusual coalitions.

In addition, Krause, Dantas and Miguel (2010) emphasize that partisan and political competition logic are lost in today’s Brazil due to what is called today’s coalition government, which occurs through incentives such as the granting of ministerial posts, departments and commissioned positions. Historically, the formation of government coalitions in Brazil at the three government levels has the distribution of positions as the main instrument of political support.

Another finding, resulting not from the analyses performed in this study but found during its performance, is that transparency indicators in Brazil are still low because no state has obtained a score above 7.0 on a scale of zero to ten.

5 CONCLUSIONS

This study aimed to identify the fiscal and socioeconomic variables that affect the level of fiscal transparency in Brazilian states, along with the effect of political variables on the level of those states’ fiscal transparency.

The first two hypotheses of this study (H$_1$: The fiscal conditions of the states affect the transparency index and H$_2$: States with better socioeconomic conditions (higher Education, Health, and Employment and Income development indexes) have a higher fiscal transparency indexes) were confirmed because the variables of Fiscal Factor and Socioeconomic Factor were statistically and economically significant. However, it is important to note that for the variable of Fiscal Factor, the analysis was flexed; therefore, a significance level of 7% was considered.

The first hypothesis related to the political variables (H$_3$: States with greater political competition have higher fiscal transparency indexes) was refuted, whereas the second such hypothesis (H$_4$: Political parties do not affect the fiscal transparency level) was accepted.

These results indicate that transparency in Brazil’s subnational states is influenced by their fiscal and socioeconomic conditions, corroborating the findings of the international literature. These results indicate, although partially, that states with better fiscal conditions seem to have better conditions for structuring higher-quality information systems for their citizens. In addition, states with better fiscal conditions have more opportunities to invest in bureaucracies and careers specializing in disclosure. Another important piece of evidence is that socioeconomic conditions affect the level of transparency, indicating the importance of efficient and effective public policies in education, health, employment and income.

The results also indicate that the political variables investigated in this study (Political parties and Governor’s Competition) do not affect the level of transparency of Brazil’s subnational states, contradicting the findings of the international literature. However, as previously discussed, this finding strengthens the claim by Krause et al. (2010) about the identity problems of parties and their coalitions. This historical problem had already been noted by Campello de Souza (1976) and had already indicated the fragility of Brazil’s political parties.

Finally, it should be noted that given the low level of transparency displayed by Brazil’s subnational states, the existence of a reasonable distance between the government and civil society can be observed because little information is disclosed by the states, indicating that as argued by Pinho (2008), Brazilian democracy retains traces of Weberian patrimonialism, a situation that is very common in authoritarian regimes. This further reinforces the need for social participation in Brazilian democracy as a method of preventing the population’s right to information from remaining exclusively in the hands of the public bureaucracy.

In this respect, this study’s main contributions to the literature in this area are the evidence that fiscal and socioeconomic factors affect fiscal transparency and that political variables do not affect transparency, highlighting society’s need to continuously monitor and politically engage with the public administration to reduce the informational asymmetries between the latter and citizens. Moreover, the importance of institutional reforms to strengthen parties and to increase the accountability mechanisms of public administrators (such as political reform, for example) should be highlighted so that the people can exercise their
negative political rights, which is a theme of a representa-
democracy.
This study's limitations are as follows. First, it is a trans-
versal section, that is, only one year is analyzed. If there
were data on transparency for additional years, a longi-
tudinal study could prove to be more promising than the
study performed herein. Second, the transparency index
used contains partially subjective measures; nevertheless, it
is the only transparency index currently available in Brazil
for its states. Third, the measure used for the level of trans-
parency is not the same as in previous studies, thus limiting
the comparison of the results and conclusions.
For future research, a longitudinal study is recom-
ended, considering the variables used herein together with
other variables, aiming to capture the effect of the varia-
bles (both in time and space) on fiscal transparency. The
performance of qualitative studies of these states aimed at
identifying civil servants’ perceptions and experiences of
what leads their States to disclose either more or less fiscal
information is also suggested.

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