Fiscal transparency explains the perception of corruption, but Democracy matters!

Transparência fiscal explica a percepção da corrupção, mas Democracia importa!

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Abstract

Based on fiscal transparency, there is no clear evidence of how a democratic environment affects corruption. This study aims to verify the influence of the democracy factor in combating corruption from a fiscal transparency perspective. The literature review on public governance focused on fiscal transparency, democratic institutions, and the perception of corruption. With regard to its methodological aspects, the research is *ex-post-facto* based on the multivariate regression of six-years' panel data from 110 countries, which uses 524 observations. Depending on the democratic situation of a country, we conclude that fiscal transparency can have a different impact on the outcome of the perceived corruption. There is practically no change in the perceived corruption level in undemocratic countries, even when there are changes in the level of transparency. On the other hand, there are significant and directly proportional variations in democratic countries, and a high degree of explanation between the fiscal transparency and perception of corruption variables.

Resumo

Não há evidência clara de como o ambiente democrático afeta os resultados sobre corrupção a partir da transparência fiscal. Este estudo objetiva verificar a influência do fator democracia nos resultados de combate à corrupção a partir da perspectiva da transparência fiscal. A revisão de literatura sobre governança pública focou sobre os temas transparência fiscal, instituições democráticas e percepção da corrupção. Sobre os aspectos metodológicos, a pesquisa é ex-post-facto, baseada em regressão multivariada de dados em painel de 110 países com 6 anos e 524 observações. Conclui-se que, conforme a condição democrática de um país, a transparência fiscal pode impactar de maneira diferente o resultado da percepção da corrupção. Nos países não democráticos praticamente não se nota alteração do grau de percepção da corrupção mesmo com as mudanças do nível de transparência. Por outro lado, nos países democráticos apresentam variações diretamente proporcionais, significativas e com alto grau de explicação entre as variáveis transparência fiscal e percepção da corrupção.

Practical implications

Perception of corruption depends on the relationship between the levels of fiscal transparency and the maturity of the democratic institutions of a country. Transparent actions must be developed synergistically, therefore, by way of democratic actions (free elections, effective government, political participation, a democratic political culture and civil liberties) with a view to fighting corruption.

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1 INTRODUTION

Although there is evidence of fiscal transparency practices being reported in ancient Greece, even today such initiatives are discreet. (Khagram, Fung, & De Renzio, 2013). At government level, it is still normal to maintain the confidentiality of its tax information; that is, only a few stakeholders are involved in its respective decision-making processes (Abreu, Gomes, & Alfinito, 2015).

This confidentiality, however, has been the subject of much discussion that is based on evidence taken from studies on public governance. This reinforces the idea that promoting transparency supports the achievement of government outcomes, such as those related to reducing corruption (Khagram et al., 2013).

For Kaufmann (2003), transparency is a successful governance requirement for fighting corruption. Publishing the public budget, opening up financial agencies, media freedom, and access to government information are all strategies of fiscal transparency (Kaufmann, 2003).

According to Mills (2012), however, studies are still needed as to which factors lead to a reduction in corruption through increased fiscal transparency. According to Ling and Roberts (2014), countries with democratic institutions are expected to be transparent, but there is still no clear evidence as to how, based on fiscal transparency, the democratic environment has an influence on the outcomes of corruption (de Almeida, 2015).

With a view to filling the abovementioned theoretical gap, therefore, we suggest the following research question for this work: Do fiscal transparency and democratic institutions explain the results of the perception of corruption? The proposed objective is to verify the influence of the democracy factor on the results of combating corruption from the perspective of fiscal transparency.

This research is justified not only in view of how relevant combating corruption is to the present time, but also because of the scientific motivation of seeking unprecedented evidence on issues that relate to filling the urgent theoretical gap of how the impacts on the perception of corruption are generated. It is worth highlighting countries like Brazil, for example, because corruption is still a big problem here.

Based on our results, we observe that in undemocratic countries there is practically no change in the degree of perception of corruption, even when the level of transparency changes. In democratic countries, on the other hand, there are significant and directly proportional variations, and with a high degree of explanation between the fiscal transparency and perception of corruption variables.

The main contribution of this study is that, depending on the democratic condition of a country, fiscal transparency can have a different impact on the outcome of the perception of corruption. But which of the democratic factors – free elections, effective government, political participation, democratic political culture and civil liberties – that boost fiscal transparency in order to achieve better outcomes of the perception of corruption still need to be better investigated?

This is an ex-post-facto quantitative study and used the technique of multivariate regression of six years' panel data taken from 110 countries and involving 524 observations. The dependent variable is the perception of corruption and the independent variables are fiscal transparency and democratic institutions.

Adopting fiscal transparency initiatives is essential for consolidating the political accountability instrument. Attention must be paid not to mistakenly infer that a mistrust of democratic institutions is a result of the increase in fiscal transparency practices, such as disclosing budget and financial data to society, preparing a citizens' budget, tax education and arranging hearings that present budgetary and financial information in an accessible language.

2 THEORETICAL REFERENCE

According to Bovaird (2009), the results of governance are brought about by decisions that are based on democratic institutions and that encourage open government processes that promote fiscal transparency. Good governance is associated with a better democratic capability for preventing conflict, fulfilling human rights' obligations, helping businesses grow, and providing citizens with essential public services to achieve social progress, including promoting the fight against corruption (DFID, 2006).

One of the criticisms of governance, however, is the difficulty of explaining from a democratic perspective how decisions are translated into government results (Ford & Ihrke, 2018). According to Bannink and Trommel (2019), there are still gaps in our understanding of government results from the perspective of governance, such as the issue of moderating democratic institutions, for example.

Countries with consolidated democratic institutions are characterized as having a set of rules (either primary or basic) that establish who is authorized to take collective decisions and what the procedures are (Munck, 2016). Although transparency has been seen as synonymous with democracy, they are different concepts. Transparency is about open information, and democracy is a premise for transparency (Hollyer, Rosendorff, & Vreeland, 2018).

The existence of consolidated democratic institutions should have a significant impact on the results of governance based on promoting transparency. In short, fiscal transparency is related to accountability, which, in turn, is associated with the perception of fighting corruption. But transparency is not always a sufficient condition for promoting the democratic engagement of citizens (Hollyer et al., 2018).

Obstacles to the democratic institutionalization of a country can impede advances in the outcomes of governance, such as the outcome that is related to the perception of fighting corruption based on fiscal transparency. Given this understanding and from the point of view of the literature, we discuss below the elements of fiscal transparency, democratic institutions and the perception of corruption in the context of public governance in order to seek a theoretical support basis for this study.

2.1 Fiscal transparency

Fiscal transparency can be understood as the act of making budgetary information clearly and publicly available by way of relevant laws, regulations and other policies, and stakeholders must be notified of all such laws and regulations. There must also be a guarantee that they are administered in a uniform, impartial and reasonable manner (Kaufmann, 2003). According to the OECD (2002), fiscal transparency involves disclosing all relevant budgetary information in an accessible, timely, understandable, and systematic manner.

The demand for transparency enables citizens, markets and governments to hold institutions accountable for their policies and performance. Fiscal transparency is closely related to accountability, and while it is likely that social participation will increase and the quality of public debate will improve, it is not always sufficient for promoting citizen engagement, one of the expected results of which is the perception that corruption is being combated (Ling & Roberts, 2014).

The budgetary principles of publicity and clarity are basic elements for the concept of fiscal transparency, because even if the information is disclosed, it will not be transparent if society finds it incomprehensible. Likewise, an action that the general public finds easy to understand will not be transparent unless it is publicized sufficiently frequently in the right place and at the right time (Oliveira, 2010).

The practices needed for improving fiscal transparency are recommended by several instruments, namely: the Code of Good Practices on Fiscal Transparency, of the International Monetary Fund (IMF); the manual of Best Practices for Budget Transparency, of the Organization for Economic Cooperation and Development (OECD); and the high-level principles on fiscal transparency of the Global Initiative for Fiscal Transparency (GIFT) (Abreu et al., 2015).

According to Denhardt and Denhardt (2002), greater discretion, responsiveness and fiscal transparency are evidence of public governance, which is based on citizen engagement that focuses on the public interest in a democratic environment. In the public governance model, fiscal management enables interaction between non-governmental and governmental stakeholders (Bovaird & Löffler, 2009).

The governance decision-making process is based on citizen involvement and seeking collaborative ways of interaction between government and society (Abreu & Gomes, 2018; Emerson, Nabatchi, & Balogh, 2012). In this case, leadership is crucial for establishing and maintaining clarity of rules in order to build trust and support negotiations between stakeholders (Khagram et al., 2013).

According to De Renzio and Masud (2011), the Open Budget Index (OBI) is a rigorous, independent and comparable methodology, which makes it a useful reference for theoretical and practical application. According to Abreu et al.(2015), the OBI is a recognized measure of fiscal transparency that has already been tested in scientific works on this perspective.

2.2 Democratic institutions

According to North, Wallis and Weingast (2009), the state can be classified as having both limited and open access. The difference between the two is that open access presents transparent democratic institutions, advocates impersonal actions, and citizenship prevails, while in limited access (also called natural), personal relationships have dominance over government decisions, with the most powerful actors taking precedence over preferences.

According to Acemoglu and Robinson (2012), prosperous countries have institutions that can promote an effective government structure, and create an inclusive political culture. This aims to reduce costs in the relationships between partners, thus seeking participatory collective results. Prosperous countries tend to avoid unnecessary efforts. Their negotiations are less intense and they stimulate greater productivity and profitability, thus guaranteeing contracts and property rights; in other words, reducing the risk of corruption.

Given the above, these prosperous countries can obtain better political results and stabilize their democratic regimes over the long run. Countries that have excessive failures, however, either have authorities that do not respond to these failures, or deliberately make bad choices. Virtuous cycles of prosperity, or vicious cycles of political and economic crisis occur, depending on whether their institutional characteristics are, respectively, democratic or not (Acemoglu & Robinson, 2012).

According to Loureiro, Teixeira and Prado (2008), the construction of instruments of fiscal transparency is fundamental for promoting public governance. The heterogeneity in democratic institutionalization, however, may result in obstacles to advances in some outcomes, such as those related to political accountability, for example.

Care must be taken, therefore, not to mistakenly infer a mistrust of democratic institutions. The increased disclosure of evidence about corruption in countries, such as we saw in Brazil after the re-democratization process, is due, in particular, to the associated increase in fiscal transparency (Moisés, 2006).

Democracy emphasizes civil liberties as its essential goal, and democratic institutions are a means of achieving these liberties (Dalton, Sin, & Jou, 2007). Based on the concept that the rule of the people means democracy, according to Coppedge et al. (2011), the democracy index, as calculated by The Economist's Intelligence Unit, is a valid measurement form, because it starts from democratic principles as the basis for defining its calculation parameters, which are related to free elections, effective government, political participation, a democratic political culture and civil liberties.

Although the concept of democracy was much more a way of differentiating the countries that made up the different blocs during the Cold War years, this concept has made a relevant contribution to our understanding of social phenomena that had not been previously explored (Coppedge et al., 2011). For example, characterizing countries as democratic or undemocratic institutions enables us to verify their respective consequences with regard to the perception of corruption.

2.3 Perception of corruption

Corruption is understood as a standard of behavior that deviates from the prevailing norms in a given context under a particular motivation, that is, private gain at the expense of public gain (Rodrigues & Barros, 2020). With regard to the political perspective, Sparling (2018) believes that corruption should be perceived as a violation of the norm of impartiality. Impartiality, therefore, must be understood as a normative exemption procedure resulting from a sense of fairness that exists among stakeholders.

From this perspective, corruption is related to political practices, such as clientelism, patronage, nepotism and the bribery of public officials. Although these practices do not necessarily mean corruption, they are related to vulnerable situations that lead to corruption. (Avritzer & Filgueiras, 2011). Therefore, however much the formulation of policies requires technical knowledge, the legitimacy of government decisions depends on the political accountability of public agents.

Political accountability is concerned with the response capacity of state authorities during the period between democratic elections, and the ability of stakeholders to make demands and hold those in power accountable for their actions. (Friis-Hansen & Cold-Ravnkilde, 2013). According to Friss-Hansen and Cold-Ravnkilde (2013), political accountability can be defined as a relationship between two parties, in which one is accountable to the other.

It is worth highlighting again the case of Brazil. Since the re-democratization process in the 1980s the issue of corruption in the country has been a major political obstacle. This is mainly due to the fact that in the perception of Brazilians the issue of corruption is associated with state inefficiency arising from a lack of accountability on the part of government officials and public managers, caused by political cultural problems and the low engagement of society (Avritzer & Filgueiras, 2011).

From the perspective of governance, the results related to the perception of corruption are associated with promoting fiscal transparency (Clark & Pal, 2014). Democratic institutions can moderate levels of corruption, depending on whether there is political accountability, or not (Viana, Ruiz, & Ramírez, 2020). How such impacts of transparency and democracy are perceived in the outcomes of corruption, however, still needs to be clarified. (Khagram et al., 2013).

Hypothesis: The increase in value that is the product of the interaction between fiscal transparency and democracy has a positive and significant impact on improving the perception of corruption.

According to Donchev and Ujhelyi (2014), Transparency International's Corruption Perception Index (CPI) is a useful tool for determining the level of political reliability of public officials vis-à-vis society. It is worth stressing that the United Nations Development Programme suggests the CPI as a way of measuring the level of corruption in countries, based on the perception of experts (UNDP, 2008).

3 METHODOLOGICAL ASPECTS

This study examined how fiscal transparency and democratic institutions are associated with perceived corruption. Based on Shadish et al. (2002), we used an ex-post-facto quasi-experimental methodology. The independent variables were multiplied to verify the interaction in a multivariate regression with panel data in order to confirm our theoretical hypothesis, or not. The description of the variables used in the regression and graphical analysis is shown in Table 1.

The study was based on available panel data (using a 6-year historical series) that were taken from a sample containing 524 observations, excluding unpaired cases. We used data for 2006, 2008, 2010, 2012, 2015 and 2017.

We tested the interaction of DEM with OBI on the CPI results using the hypothetical proposition that is mathematically detailed below:

$$CPI = \beta_0 + OBI \; x \; DEM \; x \; \beta_1 + \mathcal{E}$$

where β_0 is the intercept, β_1 is the angular coefficient, and $\mathcal{E}$ is the random error.

Table 1. Variables

Variables	Application	Scale	Synthetic description
Perception of Corruption (CPI)	Regression (dependent variable)	0 to 1 (the bigger, the less corrupt)	Based on Corruption Perception Index data. It aims to determine the level of political reliability of public agents vis-à-vis society, as determined by Transparency International (TI, 2020).
Open budget (OBI)	Regression (independent variable)	0 to 1 (the bigger, the more transparent)	Considers Open Budget Index data. This is a measure of fiscal transparency determined by the International Budget Partnership (IBP, 2020).
Democracy (DEM)	Regression (independent variable)	0 to 1 (the bigger, the more democratic)	Refers to the Democracy Index. It is determined by The Economist Intelligence Unit (EIU, 2020) as a metric to influence citizens with their respective governments, based on the following institutional components: free elections; effective government; political participation; democratic political culture; and civil liberties.
Dummy (D)	Scatter chart	0 or 1	Dummy variable based on the DEM variable, 0 for non-democratic countries (considered as authoritarian and hybrid, DEM less than 0.6) and 1 for democratic countries (full and imperfect, DEM greater than or equal to 0.6)(EIU, 2020).
Free elections	Radar chart	0 to 1 (the bigger, the freer the elections)	Refers to the Electoral Process and Pluralism Index and measures specific issues with regard to national and local elections, which are free, fair, universal, secure, without coercion, with equal campaigning opportunities, transparent funding, effective succession, and access for all the candidates (EIU, 2020).
Effective government	Radar chart	0 to 1 (the bigger, the more effective the government)	Refers to the Government Functioning Index and measures questions about the government's competence for taking free, effective and open decisions throughout the nation, with accountability, legislative representation and a system of checks and balances to ensure the trust of society (EIU, 2020).
Political participation	Radar chart	0 to 1 (the bigger, the more participative the politics)	Refers to the Political Participation Index that aims to determine the capacity of society to participate in a free and ethical manner with respect to religious and political options, in elections, parties, associations and public demonstrations, including broad government incentives for social participation (EIU, 2020).
Democratic political culture	Radar chart	0 to 1 (the bigger, the more political culture there is)	Refers to the Political Culture Index that aims to determine the degree of perception about the freedom with regard to broad access to culture, particularly in relation to consensus and social cohesion with respect to stability, functionality and democratic values (EIU, 2020).
Civil liberties	Radar chart	0 to 1 (the bigger, the more civil liberty there is)	Refers to the Civil Liberties Index and focuses on preserving human rights and personal freedom, measuring individuals' access to broad electronic and print media coverage, expression and protest, access to public information, freedom of religious expression, an independent judiciary, and equality between individuals before the law (EIU, 2020).

Source: prepared by the authors

It is important to remember that the results of institutional changes take time to happen, a fact that limits the present study since we are considering only data relative to 6 years in a period of just over a decade. Based on the observations of Hair, Black, Babin, Anderson and Tatham (2009), however, this study is statistically adequate, since it involves data from 110 countries in different geographic regions and with different economic levels, using all the available data to check the interaction between the independent variables.

The dummy variable – to identify which observations are democratic or undemocratic – is intended to facilitate the visual (graphical) identification of how the dispersion of years within these two categories is presented. This is how the spatial analysis of the arrangement of clusters between the observations of undemocratic and democratic countries was made possible.

It should be noted that we also carried out a comparative analysis of the observations, specifically of the last available year of the sample, 2017. This made it possible, for example, to check the results for Brazil, which was referenced in the literature because of its recent re-democratization process. We identified from the database that the US had an OBI value similar to that of Brazil in that particular year, but that the DEM and CPI results were different, which enabled us to check the discrepancies between the values of the institutional components of these countries (Brazil and USA).

The fiscal transparency behavior and the perception of corruption in the observations was also graphically verified for 2017. To do so we grouped these data into democratic and undemocratic countries in order to visually and statistically check the discrepancies between the data.

Finally, we used the STATA and SPSS computer programs, and the data mining resources that are available in the Microsoft Power BI software. The results of this research are now presented.

4 RESULTS

Based on our objective, the literature review and the methods presented, we examined the relationship between fiscal transparency, democratic institutions and corruption perception. The results of the tested model are shown in Table 2, with perception of corruption (CPI) as the dependent variable, and the result of the multiplication of the independent variables, democratic institutions and fiscal transparency (DEMxOBI).

Table 2. Regression results

Dependent variable: CPI	
Intercept	**0.3469961*****
	0.0157643
OBIxDEM	**0.1322622***
	0.0568324
R-Squared in groups	0.038
R-Squared between groups	0.592
General R-Squared	**0.556**
Corr (u_i, Xb)	0.680
F (5.163)	**5.42***
Sigma_u	0.15454471
Sigma_e	0.03971584
Rho	0.93804949
Number of observations	**524**
Number of observations	**110**
Minimum observations per group	**1**
Average observations per group	**4.8**
Maximum observations per group	**6**

Source: prepared by the authors
Notes: Significance levels: '*' 0.05; '**' 0.01; and '***' 0.001. Panel variable: Identification of countries. Time variable: Year (from 2006 to 2019, with gaps. Interval: Annual. Used a robust matrix with a 95% confidence interval (fixed effects) for treating heteroskedasticity.

The observations of the CPI results and of the OBIxDEM multiplication are broken down below, discriminating them by dummy groups in order to identify the observations of democratic or undemocratic countries (Figure 1). The results of both regressions are represented, one referring to the group of observations of undemocratic countries (short dash line, R² 0.045) and the other to the observations of democratic countries (long dash line, R² 0.562). We also added the discrimination of the main regression (referring to the results in Table 1 of all the observations together, which relate to undemocratic and democratic countries) of the observations in general (solid line, R² 0.556).
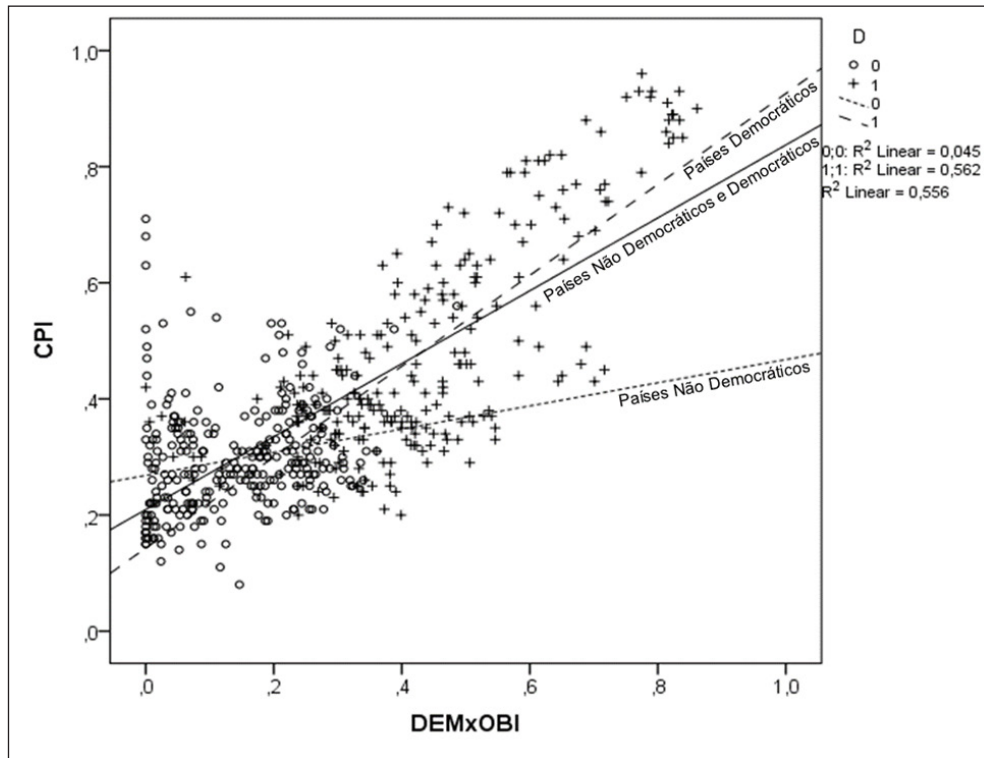

Figure 1. Observations of countries
Source: prepared by the authors
Notes: D 0 and 1, for undemocratic and democratic countries, respectively. CPI is the perception of corruption, OBI is budgetary transparency, and DEM is democracy.

In 2017, Brazil and the United States of America (USA) both had the same levels of transparency (0.77), but very different perceptions of corruption (Brazil, 0.33 and USA, 0.78). The results of these countries differ less when we multiply OBI by DEM. While Brazil has a DEMxOBI of 0.53, that of the US is 0.61.

We now show the levels of democratic institutions in Brazil and the USA, with three levels (low, medium and high). We used data for 2017, based on the results by elements of the calculation of the democracy index (Figure 2).
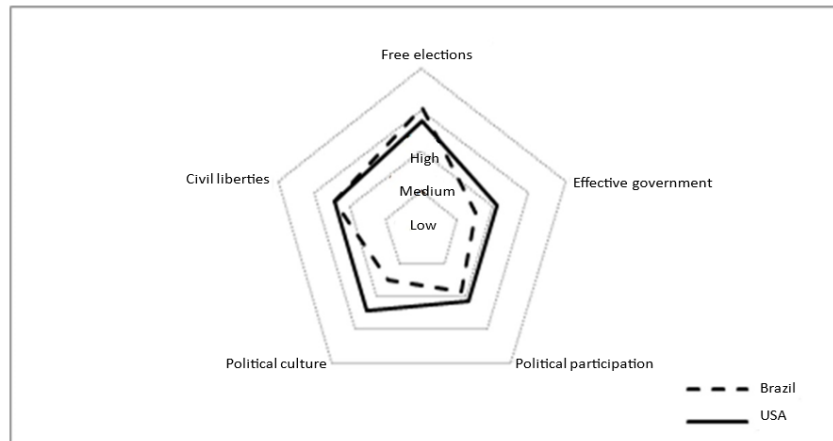
Figure 2. Level of democratic institutions in Brazil and the USA in 2017
Source: prepared by the authors

In order to identify the behavior between the OBI observations better, and based on the sets of democratic and undemocratic observations, we present the behavior using segregation by quartile (Figure 3), with the addition of a line representing the median of the observations, also specifically for 2017. Similarly, we present the behavior (Figure 4) using segregation by quartiles of the CPI observations, which also has as a reference the set of democratic and undemocratic observations, plus a line representing the median of the observations of 2017.
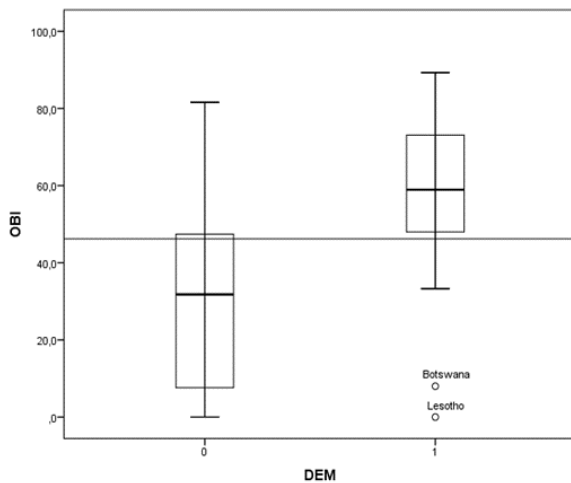

Figure 3. Behavior of the OBI in 2017
Source: prepared by the authors

Notes: 0 and 1, for undemocratic and democratic countries, respectively. OBI is budgetary transparency, and DEM is democracy.
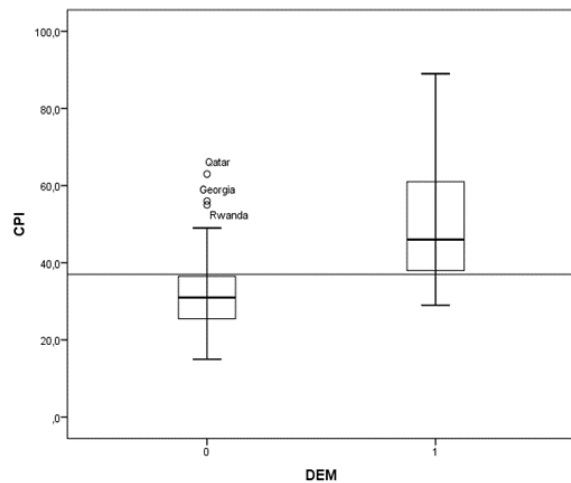

Figure 4. Behavior of the CPI in 2017
Source: prepared by the authors

Notes: 0 and 1, for undemocratic and democratic countries, respectively, CPI is the perception of corruption, and DEM is democracy.

These results, therefore, provide evidence of the social phenomena we investigated, with a special focus on achieving the objective we proposed for this study. Discussion of the results is presented in the next section.

5 DISCUSSION

According to the data shown in Table 2, we found that the regression of the tested model is statistically significant. The explanation value (R^2) is 55.6%, based on the use of the robust matrix to treat problems of heteroskedasticity. All the variables in the model are also statistically significant.

We would stress that this is confirmatory research, which is why we used two independent variables interactively, that is, they produce results by multiplication. Future research with an exploratory profile can help by identifying other explanatory variables that can be incorporated into the model being studied.

There is also an opportunity to carry out both comparative and confirmatory analyses, such as using hypothetical theoretical models, for example, to verify the variables in isolation, or by detailing the institutional components of the DEM.

Abramo (2006, p. 37) indicates that "perceptions about corruption should be treated with caution, as they provide little information about the empirical phenomenon of corruption". For Graycar (2015), in view of its characteristic of confidentiality, it is difficult to measure corruption, which is what justifies using a proxy of perception for measuring corruption.

We found that the DEM variable interacted with the OBI variable to explain CPI, as presupposed in the literature and qualified in the theoretical hypothesis we tested in this study. In other words, we can conclude that the perception of corruption in a country depends on the level of fiscal transparency and the types of democratic institution.

Depending on the types of institution in a country, whether it is undemocratic or democratic, we can expect different explanation behaviors for the perception of corruption based on their respective levels of fiscal transparency. Based on Figure 1, this finding is easier to visualize, including when considering the representation of the linear regressions of the two groups of observations.

We note that the group of undemocratic countries has a nil angular coefficient, that is, an increase in the level of fiscal transparency has very little effect on any gains related to improvements in the perception of corruption. In the case of democratic countries, however, we observe that fiscal transparency explains the perception of corruption to a great degree and in a directly proportional relationship. This shows that the presence of democratic institutions makes all the difference to the results of the model we tested, with an explanation that is consistent with the regression of the set of observations in general.

We would emphasize the challenging situation in Brazil, because despite having a high level of transparency (0.77), the Brazilian perception of corruption is low (0.37). The US, which has the same level of fiscal transparency as Brazil (0.77), has a much higher corruption perception value (0.78).

However, and still with regard to Brazil and the USA, multiplying the OBI and DEM values (to cause an interaction between these variables) we obtain results of 0.53 and 0.61, respectively. We conclude, therefore, that the effect of the interaction between DEM and OBI fits with the approximation with the CPI results. In other words, this is evidence that the results of the perception of corruption are moderated by democracy based on the level of fiscal transparency.

Comparative analysis considering the components of the democracy index, as shown in Figure 2, provides possible empirical evidence of this phenomenon, because although both countries (Brazil and USA) are considered democracies that have free elections and civil liberties, Brazil still has imperfections that negatively differentiate it from the USA in terms of effective government, political participation and a democratic political culture. New research may help identify which democratic factors are significant for helping reduce corruption.

With regard to this possible evidence, it makes sense to highlight what Avritzer and Filgueira (2011) have already warned about, that the Brazilian problem with regard to the feeling of serious corruption has to do with the lack of accountability of government officials and public managers, which arises from the state's inefficiency, political cultural problems, and the low engagement of society. We also need to pay attention to the warning of Moisés (2006) not to mistakenly infer a distrust of democratic institutions, especially with regard to the fact that the increasing number of fiscal transparency practices combats corruption.

Therefore, since the Brazilian re-democratization process is still a very recent event (just over three decades), seeking to improve the level of democratic institutions (as in the above-mentioned aspects) and promoting fiscal transparency are feasible ways of making progress towards reducing the perception of corruption.

Based on Figures 3 and 4, and on an analysis of their quartiles, we can confirm that the results of the group of undemocratic countries show little fiscal transparency or a perception of corruption, while the results of the group of democratic countries are much better. This finding is reinforced when we compare all the observations of the groups with the median lines plotted in the figures in question.

6 FINAL CONSIDERATIONS

This study has helped extend the literature on public governance because it has shown that fiscal transparency and democratic institutions explain the results of the perception of corruption. We found that depending on the type of democracy of a country, levels of fiscal transparency generate different results for the perception of corruption.

In the case of undemocratic countries, there is practically no change in the degree of perception of corruption, even when there are changes in the level of transparency. On the other hand, we observe that variations in democratic countries are directly proportional to the fiscal transparency and perception of corruption variables.

We have been able to fill the theoretical gap, therefore, in the sense that we now have a better understanding of the phenomenon of the variables we studied. We conclude that the perception of corruption is positively impacted by the interaction between the levels of fiscal transparency and democratic institutions.

Care must be taken not to jump to conclusions too quickly about the results of democratic countries that have imperfections in their institutions. A good example of this is the case of Brazil, as shown in the results of this research. This is justified in the literature by the fact of the recent process of Brazilian re-democratization; in other words, it is very important to continue improving the level of democratic institutions in order to obtain better results with regard to the perception of corruption that are based on progress being made in fiscal transparency.

Transparent practices, therefore, such as disclosing budgetary and financial data to society, preparing a citizens' budget, tax education and holding public meetings at which budgetary and financial presentations are made in accessible language, must be developed considering the need also to ensure democratic practices related to free elections, effective government, political participation, a democratic political culture and civil liberties.

It is worth stressing that more research is needed with a view to expanding the results of this study, which can be done by including more data or by using different indices. In doing so, it is expected to achieve what Manski (2011) warns us about; governmental reliability, in the sense that a nation's authorities need to consider the uncertainties and limitations in policy formulations with a view to taking decisions in government that are based on firm predictions.

Since the problem of corruption is unfortunately still an urgent matter in the world, we believe that new studies motivated by the results of this article will find fertile ground for making new contributions These can be achieved by using and comparing different hypothetical models, by incorporating other explanatory variables, for example, and/or checking the budget transparency and democracy variables in isolation.

We also suggest further investigation of the occurrence of outliers in 2017, with regard to little budgetary transparency in democratic countries (Botswana and Lesotho), and a large perception of corruption in undemocratic countries (Qatar, Georgia and Rwanda), in view of their atypical characteristics. We also suggest that future research should identify possible causes for the increase in the perception of corruption based on the interaction between the results of democracy and budget transparency.

Given the above, we believe that, depending on the democratic situation of a country, fiscal transparency can have different impacts on the result of the perception of corruption. Nevertheless, it is suggested that further research should explore the contribution of this study better, using either quantitative or qualitative methods to do so. We encourage new scientific inquiries with a view to identifying the gaps in the specific democratic factors that lead to an improvement in fiscal transparency, and the other variables that help improve results in terms of the perception of corruption.

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