Assessing government-nonprofit collaborations and density of nonprofit organizations in Brazil

Marcelo Marchesini da Costa
University at Albany (State University of New York)
New York / USA
Insper
São Paulo / SP - Brazil

This research analyzes the effects of the density of nonprofit organizations and government-nonprofit collaboration on human development and income inequality in Brazil. Governance studies assume that government-nonprofit collaboration leads to improved societal outcomes. This research tests this hypothesis in 5,562 Brazilian municipalities using ordinary least squares regressions and spatial models. Spatial analysis enables the identification of specific effects occurring across different regions. The rate of contracts between the federal government and nonprofits in each Brazilian municipality is associated with the decrease of income inequality, but it is also significantly associated with a lower level of human development. The density of nonprofits from different fields of activity presents diverse relations with human development and inequality. These results enable a more realistic analysis of governance arrangements, considering their impact over communities and the local realities.

Keywords: governance; collaboration; nonprofits; impact; government.

Análise de colaborações entre governo e ONGs e da densidade de ONGs no Brasil

Esta pesquisa analisa os efeitos da densidade de organizações sem fins lucrativos (ONGs) e da colaboração entre governo e ONGs no desenvolvimento humano e na desigualdade de renda no Brasil. Estudos de governança afirmam que colaboração do governo com ONGs leva a melhores resultados sociais. Esta pesquisa testa essa hipótese em 5.562 municípios brasileiros usando modelos lineares e espaciais. Análises espaciais permitem a identificação de efeitos específicos ocorrendo em diferentes regiões. A taxa de convênios entre o governo federal e ONGs em cada município brasileiro está associada com uma diminuição da desigualdade de renda, porém está também associado com uma significativa queda do nível de desenvolvimento humano. A densidade de ONGs de diferentes áreas de atividade apresenta diversas relações com desenvolvimento humano e desigualdade. Esses resultados permitem uma análise mais realista de arranjos de governança, considerando seus impactos nas comunidades e as realidades locais.

Palavras-chave: governança; colaboração; ONGs; impactos; governo.

Análisis de colaboraciones entre gobierno y ONGs y de la densidad de ONGs en Brasil

Esta investigación analiza los efectos de la densidad de organizaciones sin fines de lucro (ONGs) y de la colaboración entre gobierno y ONGs en el desarrollo humano y desigualdad de renta en Brasil. Estudios de gobernanza afirman que la colaboración del gobierno con ONGs resulta en mejores resultados sociales. La investigación prueba esa hipótesis en 5.562 municipios brasileños utilizando modelos de regresión lineales y espaciales. Los análisis espaciales permiten la identificación de efectos específicos en distintas regiones. La tasa de acuerdos entre el gobierno federal y las ONGs en cada ciudad brasileña se asocia con la disminución de la desigualdad de ingresos, pero también se asocia significativamente con un menor nivel de desarrollo humano. La densidad de ONG de diferentes campos de actividad tiene diferentes relaciones con el desarrollo humano y la desigualdad. Esos resultados permiten un análisis más realista de acuerdos de gobernanza, considerando sus impactos en las comunidades y las realidades locales.

Palabras clave: gobernanza; colaboración; ONG; impacto; gobierno.

1. INTRODUCTION

This research analyzes the influence of government-nonprofit partnerships and the density of non-profit organizations (NPOs) on key social indicators in Brazil. Since the 1980s, collaborations between governments and private organizations increased and have been promoted around the world as a way to achieve improved results for the society (Milward and Provan, 2000; Salamon, 2002). The increase on collaborations is supported by the frustration with the government's inefficiency in solving relevant social problems, along with the recognition of the potential of NPOs and companies in identifying societal demands (Saidel, 1991; Milward and Provan, 2000; Salamon, 2002; Rhodes, 2012).

There are concerns, however, about the impact of government-NPOs partnerships, since they can create problems in terms of accountability, as well as deviation of NPOs mission, taking them away from their original goals and from communities' priorities (AbouAssi, 2013; Banks, Hulme and Edwards, 2015). In order to assess the potential benefits to society of different governance arrangements, this research investigates whether there is evidence that collaborations between governments and NPOs improve human development and reduce income inequality.

Thus, this analysis evaluates the benefits for society in terms of human development and inequality variation. Human development is related to indicators of health, education, and income generation, while inequality reveals structural patterns in the society. These measures capture both the effect of NPOs service provision, and the results regarding advocacy or actions toward structural changes.

The present study is focused on NPOs, but it brings arguments that may also support public administrators, researchers, and other private actors, given that cross-sectoral arrangements are often suggested by and to these actors. While there are many analyses of governance in the United States and Europe (Börzel, 2012; Cornforth, Hayes and Vangen, 2015), there is less information about governance in the global South, and in countries with a reduced state capacity (Risse, 2013). Thus, this study contributes to fill this gap by analyzing governance arrangements and their social impact in all 5,562 Brazilian municipalities.[1]

The methodology adopted here includes tests for spatial autocorrelation, OLS regressions and spatial models (Anselin and Rey, 2014). Results indicate that municipalities with higher rates of government-NPOs collaborations in Brazil are associated with a decrease in income inequality from the years 2000 to 2010, and are also associated with a decrease in human development in the same period. That is, partnerships between the federal government and NPOs may contribute to a more equal society, but are detrimental to human development. It is not clear what causes this relationship, but it may indicate that social service provision through government-NPOs collaborations contributes to income redistribution, but is less efficient than alternative forms of providing social services, such as direct provision from the government. Moreover, the results regarding density of NPOs vary according to the different fields of activity. NPOs from several fields of activity are associated to a decrease in the level of human development, but advocacy groups and professional associations have a positive relationship with such indicator. Professional associations are also the only field associated

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[1] Brazil had 5,570 municipalities in 2015. This paper does not include six municipalities created since 2010, besides Fernando de Noronha and Ilhabela. These islands are not relevant in terms of population and cannot be easily included in the spatial analysis (Anselin and Rey, 2014).

with a reduction in income inequality. Tests reveal spatial effects in human development and inequality. Spatial methods show that human development extends from one municipality to another, and that regional factors may be influencing inequality in different parts of the country. These findings should not be considered as conclusive causal relationships. There are many complex variables affecting human development and inequality. The significant statistical associations, however, challenge the argument that collaboration is always a desirable policy. Qualitative studies are needed to explain the relationships found.

This paper is structured in five sections. First, there is a literature review on government-NPOs collaboration and governance, emphasizing research related to the expected outcomes of these arrangements. The second presents method and data used in the research. The third section describes the key elements of the third sector in Brazil, presenting the results from exploratory analysis. The fourth section presents the results from spatial models, associating indictors with different fields of nonprofit activity and collaborative arrangements. The final section presents the implications of this study, questions for further analysis, and highlights research limitations.

2. LITERATURE REVIEW AND HYPOTHESES

Since the 1980s, several areas adopted the term governance, not always with the same meaning (Levi-Faur, 2012). In general, the concept of governance is associated with changes in the processes and structures through which the society is managed, involving the re-definition of boundaries between the government, for-profit, and nonprofit organizations (Rhodes 2012). Governance connects "a network of actors who operate in various domains of public policy" (Milward and Provan, 2000:360). Among these actors, this paper is particularly interested in governance arrangements between governments and NPOs. The concept of NPO refers to organizations that are private, self-governing, voluntary, and not profit-distributing (Salamon and Anheier, 1999). In Brazil, these organizations are part of a universe identified by the government agency as *Fundações Privadas e Associações Sem Fins Lucrativos* (Fasfil) (IBGE, 2010). Despite a relevant debate on the proper nomenclature, here the concept of NPO refers to all of these organizations, given the goal of highlighting the heterogeneity in this field. The diversity of these organizations is observed, for example, in their multiple organizational forms and areas of activity (Boris, 2006; Anheier, 2014).

Salamon (2002) suggests that governance changes the focus of policy analysis of government agencies to programs or governance tools. Collaboration is often a condition to governance tools, leading to an increasing literature that discusses collaborative governance. There are different definitions of collaboration, and these arrangements may be more or less frequent and intense. Focused on the analysis of the general outcomes of these governance arrangements in Brazil, in this study the terms collaborations or partnerships appear interchangeably, and these relationships are understood as "formalized, joint-working arrangements between organizations that remain legally autonomous while engaging in ongoing, coordinated collective action to achieve outcomes that none of them could achieve on their own" (Cornforth, Hayes and Vangen, 2015:6). The governance tool analyzed here are *convênios*, a contracting mechanism intensely adopted for financial transfers from the government to NPOs in the period between 2000 and 2009 in Brazil (Plataforma OSC, 2010).

Generally, the governance literature assumes that collaboration between different sectors leads to improved outcomes for the society when compared to organizations working in isolation from one another (Milward and Provan, 2000; Salamon, 2002; Salamon and Toepler, 2015). The choice of collaborative arrangements, however, involves those who participate and how they influence the policies that are carried out (Salamon, 2002). Each form of collaboration between the government and NPOs changes the system of accountability, affects the legitimacy, and creates new management challenges for the different actors involved (Salamon, 2002; Banks, Hulme and Edwards, 2015). Thus, it is important to know whether or not a governance arrangement delivers the intended societal benefit, justifying eventual inefficiencies during the process.

Despite the argument that government-NPOs collaborations present better outcomes for the society (Milward and Provan, 2000), a great part of the literature emphasizes detrimental organizational consequences for NPOs working in these arrangements (Frumkin, 2002). Several authors discuss, for example, how collaboration with the government leads to bureaucratization (Frumkin, 2002) and restricts the political activity of NPOs (Nicholson-Crotty, 2007; Schmid, Bar and Nirel, 2008; Guo and Saxton, 2010; Verschuere and De Corte, 2015). It is less common to find debates about the broader consequences of these arrangements for society. That is, even if NPOs suffer detrimental organizational consequences when they collaborate with the government, how is the society affected by these collaborative arrangements?

The first and main hypothesis in this research assesses societal outcomes of government-NPOs collaborations. The choice to discuss collaborations by focusing on contracting mechanisms with resource transfers tests the argument that NPOs receiving funding from the government change their priorities to continue receiving funding, instead of focusing on policy goals (Mosley, 2012). Human Development Index (HDI) is the first societal outcomes analyzed here because it is a measure that captures benefits from service delivery in the fields of education, health, and income generation (Anand and Sen, 1994; UNDP, 2015). Atack (1999) argues that NPOs have unique characteristics, such as their access to the communities, which allow them to contribute to the improvement of development indicators. Ranis, Stewart, and Ramirez (2000) state that NPOs are typically oriented toward human development objectives. There are, however, criticisms to the HDI for not incorporating distributional issues (Grimm et al., 2008; Permanyer, 2013). In order to complement the analysis of social impact, this research also analyzes effects on the Gini coefficient, which measures income inequality. Brazil is one of the most unequal countries in the world, despite the reduction of income inequality during the 2000s, which is attributed to government cash transfer programs that made unskilled labor relatively less abundant (Lustig, Lopez-Calva and Ortiz-Juarez, 2013). Previous studies also adopt Gini as a measure of the need for NPOs' activity in communities (Koch et al., 2009; Sokolowski, 2013).

The arguments previously presented generate an expectation that government-NPOs collaborations funded by the government have benefits in terms of HDI through the expansion of social service provision, but remove NPOs from actions that promote rights for the citizens, limiting their impact on inequalities (Neal, 2008; Banks et al., 2015).

H1: Collaboration involving financial transfers from the government to nonprofits leads to improved human development and do not contribute to lower the income inequality at municipal level.

In addition to the main hypothesis, two additional analyses complement this study. First, it is important to understand the contribution from NPOs, independent of their collaboration with the government. Full collaboration with the government and NPOs' full autonomy may be two ends of a continuum that includes different degrees of collaborations and autonomy. Therefore, in addition to debating on whether collaboration is beneficial or not, it is also necessary to identify NPOs' outcomes. Given the complexity and heterogeneity in the nonprofit sector (Boris, 2006), different outcomes are expected from NPOs working in distinct fields of activities. Nonprofit organizations may be from fields typically focused on service provision, such as housing, social services, health care and education, or from fields related to community building, identity, and structural causes, such as cultural organizations, advocacy groups, and professional associations (Salamon et al., 2013). Given the outcomes analyzed here — human development and inequality — service providers are expected to improve human development, while expressive NPOs may contribute to a more equal society.

H2: The density of NPOs from fields of activity closely related to service provision improve human development, while the density of NPOs from fields related to community building, identity and structural causes reduce income inequality in each municipality.

The final hypothesis in this paper verifies if there is geographical variation in social impact of government-NPOs collaboration and NPOs' density. The few studies analyzing social impact of NPOs and their collaboration with the government usually discuss a specific field of activity and a limited geographical area (Kearns, Park and Yankoski, 2005; Scott et al., 2006; Suda, 2006). What would the results be when considering a whole country at municipal level? Are there spatial effects influencing the outcomes considered here? Given the nonprofit sector's diversity and the huge regional variation in the characteristics of Brazilian municipalities, it is expected that significant spatial effects will be found in how nonprofits and government-NPOs collaborations affect human development and inequality.

H3: There are significant spatial effects of the density of NPOs and the collaborations government-NPOs that influence the societal outcomes at municipal level.

Based on this theoretical framework, the next section presents the method adopted to test these hypotheses.

3. METHOD

This paper adopts quantitative methods including OLS regressions and spatial models. Spatial analysis provides tools for testing if a phenomenon is randomly distributed in different units, and if this phenomenon is conditioned by what is happening in nearby units, or by features of distinct units (Dale and Fortin, 2014). Municipalities are the unit of analysis in this research.

The dependent variables[2] are: a) Difference in the municipal HDI[3] from 2010 to 2000 and b) Difference in municipal income inequality from 2010 to 2000, measured by the Gini

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[2] Different dependent variables were previously tested, such as the HDI and Gini in 2010. Results in this case were not positive for collaboration and diverse for density of NPOs. An anonymous reviewer highlighted the importance of using difference in these variables from 2000 to 2010, in order to properly capture the effect of independent variables.

[3] The Human Development Index varies from zero to one, with higher values indicating a higher level of human development.

coefficient.[4] Data on HDI and Gini come from the Brazilian censuses of 2000 and 2010, compiled by the United Nations Development Program.[5] The independent variable that indicates collaboration between NPOs and government is c) the rate of *convênios* between nonprofits and the federal government per 100,000 inhabitants in each municipality, from 2000 to 2009. The effect of the total sum of resources from *convênios* per capita was also tested, but because of the high correlation between this variable and the number of *convênios*, and because results were not significantly different, the research focused on the effect of the rate of *convênios* per 100,000 inhabitants. This data was obtained through an official request of information to the federal government[6]. Other independent variables are: d) the rate of NPOs per 100,000 inhabitants created between 2000 and 2009[7], according to their ten official fields of activity, e) the local government´s investments per capita made between 2000 and 2009,[8] as a measure of state capacity, f) variation in total population between 2000 and 2010, g) variation in rural population between 2000 and 2010, and h) the omitted dependent variable — that is, HDI when the dependent variable is Gini, and Gini when the dependent variable is HDI. Other controls were not added, given that HDI is composed of several variables that would cause problems of multicollinearity. Data from NPOs' areas of activity in each municipality come from a second request for information to the federal government.[9] Table 1 presents a summary of statistics for these variables.

TABLE 1   SUMMARY OF STATISTICS

Variable	Description	Min	Mean	Max
DifIDH	Difference in HDI between 2010 and 2000	0.03	0.13	0.32
DifGINI	Difference in Gini between 2010 and 2000	-0.38	0.05	0.24
ConvPC	Rate of *convênios* between 2000 and 2009 per 100,000 inhabitant	0	16.54	548.08
VConvPC	Rate of values from *convênios* between 2000 and 2009 per 100,000 inhabitant	0	199	27,308
Rhab00	Rate of housing NPOs per 100,000 inhabitant created between 2000 and 2009	0	0.09	47.10

Continue

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[4] The Gini coefficient varies from zero to one, with higher values indicating a higher level of inequality.
[5] Atlas Brasil. Available at: <www.atlasbrasil.org.br/2013/>. Accessed on: 14 Feb. 2015.
[6] Protocol number 16853.000393/2015-45.
[7] There is also an expected effect of the NPOs existing before 2000. However, given that the 2000s witnessed a higher rate of nonprofit organizations' creation, and that the rate of previous NPOs is a strong indicator of NPOs' location (Marchesini da Costa 2016), the measure of nonprofits created between 2000 and 2009 serves as a proxy for nonprofit density.
[8] Available at: <www.ipeadata.gov.br/>. Accessed on: 21 Sept. 2015.
[9] Protocol number 03950.001988/2014-97. The Brazilian government provides aggregate data on the nonprofit sector through the Fasfil publication, but municipal level data on all nonprofits, independent of receiving funding from the government, needed to be requested.

Variable	Description	Min	Mean	Max
Rsau00	Rate of health NPOs per 100,000 inhabitant created between 2000 and 2009	0	0.76	62.55
Rcul00	Rate of cultural NPOs per 100,000 inhabitant created between 2000 and 2009	0	10.16	339.37
Redu00	Rate of education NPOs per 100,000 inhabitant created between 2000 and 2009	0	2.66	81.16
Rwel00	Rate of social assistance NPOs per 100,000 inhabitant created between 2000 and 2009	0	7.38	457.10
Rrel00	Rate of religious NPOs per 100,000 inhabitant created between 2000 and 2009	0	12.90	168.63
Rpro00	Rate of professional associations per 100,000 inhabitant created between 2000 and 2009	0	22.36	416.71
Renv00	Rate of environment NPOs per 100,000 inhabitant created between 2000 and 2009	0	0.84	136.18
Radv00	Rate of advocacy NPOs per 100,000 inhabitant created between 2000 and 2009	0	17.36	845.86
Roth00	Rate of NPOs from other fields of activity per 100,000 inhabitant created between 2000 and 2009	0	10.31	210.97
InvMunPC	Local government investment per capita between 2000 and 2009 (R$)	0	1,089	25,045
DifPopT	Difference of total population between 2010 and 2000	-35,360	3,766	816,300
DifPopR	Difference of rural population between 2010 and 2000	-519,906	-362	46,353

Source: Created by the author using data described in this section.

Section 3 presents a summarized historical evolution of Brazilian nonprofit organizations, in addition to ordinary least squares (OLS) regressions, and diagnostics of spatial autocorrelation. Simultaneously to the OLS regressions, these diagnostics[10] indicate what kind of spatial process occurs in each case. Moran's *I* is the main diagnostic of spatial autocorrelation, and the confirmation of spatial effects leads to Lagrange Multipliers tests,[11] which indicate the most appropriate spatial model for each case (Anselin and Rey, 2014). After the spatial models, it is possible to compare the Akaike Information Criterion (AIC) to determine if the spatial models provide a better explanation to the phenomenon than the OLS regressions (Anselin and Rey, 2014).

The spatial models tested here are spatial error and spatial lag (Anselin, 2005; Anselin and Rey, 2014). The spatial error model indicates if there are omitted variables affecting neighboring units dis-

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[10] All spatial analysis is sensitive to the manner in which spatial weights are specified. This research uses a threshold distance contiguity matrix to capture connectedness among units.

[11] The Lagrange Multiplier uses residuals from OLS to test for spatial autocorrelation (Baller et al., 2001).

tinctively, which causes correlation among their error terms, while the spatial lag model investigates if events in one unit increase the likelihood of that same event in its neighboring unit (Baller et al., 2001). Formally, a spatial error term (Anselin and Rey, 2014) is given by:

$$y_i = \beta X_i + \mu_i$$
$$\mu_i = \lambda W \mu + \in$$

The dependent variable at unit i is given by the coefficient β for the independent variable X in that same unit, plus an error term that is spatially dependent ($W\mu$). In this case, λ is the autoregressive spatial coefficient, and is the remaining – non-spatially dependent – error term. That is, there are regional factors affecting neighboring units and making their error terms correlated.

A spatial lag model (Anselin and Rey, 2014), in matrix notation, is given by the equation:

$$y_i = \alpha W_{i,j} y_j + \beta X_i + \mu_i$$

That is, if is the dependent variable at unit i, α is the autoregressive spatial coefficient; $W_{i,j}$ is the spatial weight specifying the spatial relationship between units i and j; y_j is the dependent variable at unit j; β is the coefficient for the independent variable; X_i is the independent variable at unit i; and μ_i is the error term at that same unit, this means that the value of a dependent variable at the unit i is given by the value of that same variable in its neighbor units, plus the effect of independent variables and error terms at that unit.

The software R (R Core Team, 2015) and Geoda (Anselin, Syabri, and Kho, 2006) enabled all the models and tests. After explaining the methods adopted here, the next section presents descriptive data and preliminary analysis on the Brazilian nonprofit sector.

3. PRELIMINARY DATA

There are more than 290,000 nonprofit organizations in Brazil, employing 2.1 million people (IBGE, 2010). Despite the considerable aggregate numbers, and the history of nonprofits in Brazil, which started with Catholic organizations more than a century ago (Landim et al., 1999), the Brazilian nonprofit sector is still incipient if compared to countries such as the United States. There are 63 municipalities in Brazil with any registered NPO, and one quarter of all Brazilian municipalities have a maximum of seven NPOs (IBGE, 2010). Also, while areas such as education, health and human services concentrate the largest number of NPOs in the United States (Boris, 2006), in Brazil these areas are less dominant. Religious organizations, professional associations, advocacy groups and cultural organizations make up more than 70% of the Brazilian nonprofits. There is, however, a significant regional variation in this profile.

Data on NPOs' fields of activity[12] and age, depicted by their establishment in each decade, add information to their profile. Graph 1 shows the evolution in the number of NPOs according to different regions and decade of foundation. Graph 2 presents the number of NPOs in different fields of activity, according to the decade in which they were established.

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[12] The fields of activity considered here follow the official register of nonprofits for fiscal purposes in Brazil. Several authors have pointed out, however, that nonprofits develop activities in several fields simultaneously (Almog-Bar and Schmid, 2014).

GRAPH 1   **NUMBER OF NPOS ACCORDING TO THEIR REGIONS AND ORGANIZATIONAL AGE**
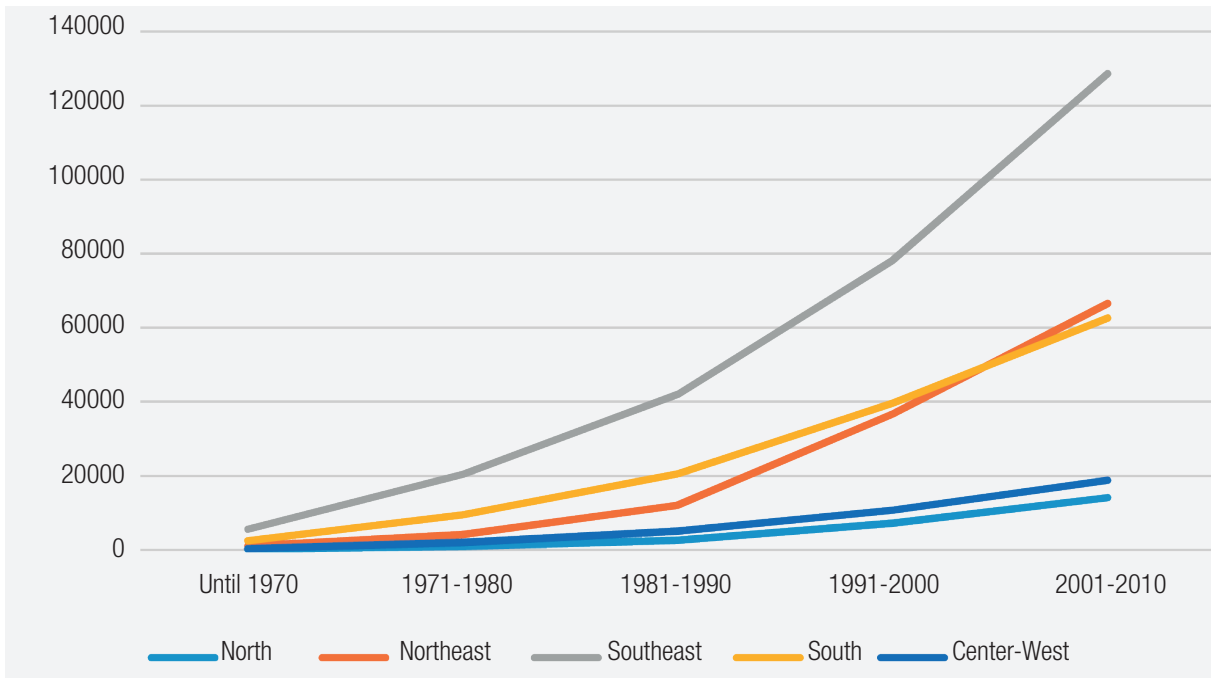
Source: Created by the author based on data described in Section 2.

GRAPH 2   **NPOS IN DIFFERENT FIELDS OF ACTIVITY, ACCORDING TO THE DECADE IN WHICH THEY WERE ESTABLISHED**
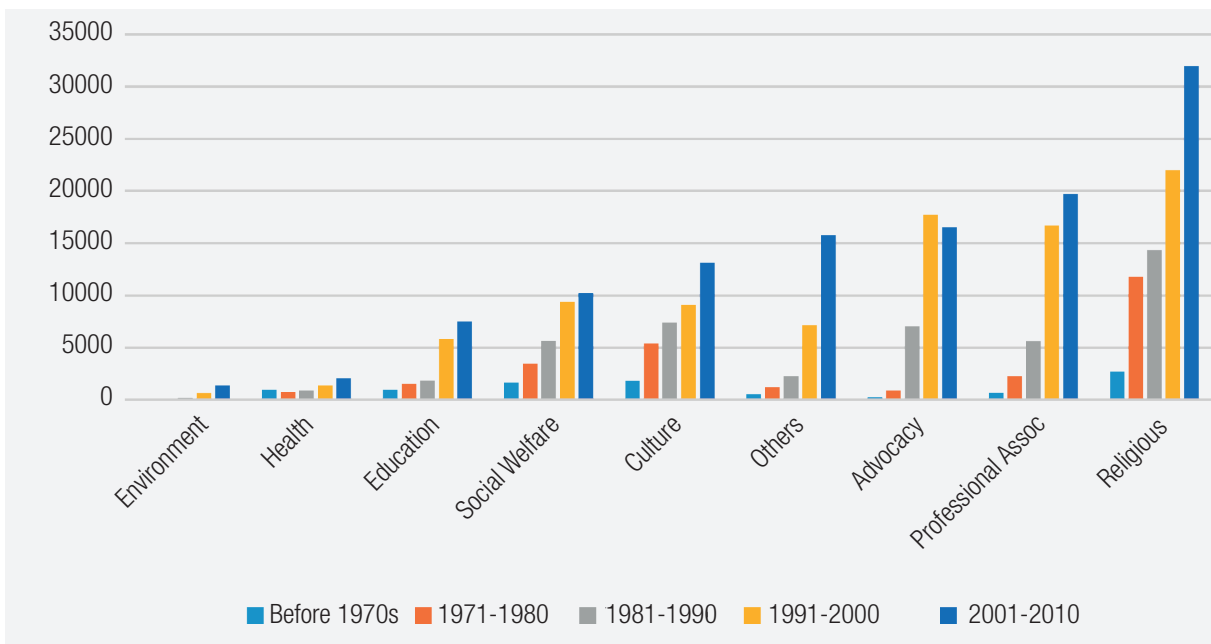
Source: Created by the author based on data described in Section 2.

These graphs show a continuous growth in the nonprofit sector in all regions, especially since the 1980s, when the military regime fell in Brazil (Landim et al., 1999). NPOs continued growing during the 1990s and 2000s, while the government updated regulations, promoting partnerships with nonprofit organizations (Appe and Marchesini da Costa, 2016).

The Southeast — which is the most industrialized, wealthiest, and most populated region — also has the largest number of NPOs in Brazil. In this region, 37% of NPOs are faith-based, which is the highest percentage for this category in the country. Graph 2 shows that religious organizations are consistently the biggest group in Brazil. This group had a sharp growth in the 1970s, during the military regime. Several studies discuss the role of religious organizations in the struggle against the military regime in that moment of restricted political association (Krischke, 1991; Azevedo, 2004). The role of religious organizations in recent years, however, is more diverse, having contributed to the propagation of conservative agendas in Brazil (Coutinho and Golgher, 2014).

The Northeast is the second most populated region in Brazil, but it only surpassed the South region in number of NPOs in the 2000s. This partially happened due to a significant increase in the number of advocacy organizations and professional associations – the biggest areas of activity in this region – especially in the 1980s and 1990s. While the 1980s were characterized by the re-democratization and by an influx of resources from international foundations supporting Brazilian nonprofit organizations, the 1990s were a moment of expansion in contracting between the government and NPOs (Appe and Marchesini da Costa, 2016). Despite some industrial and developed areas, the Northeast has several of the poorest municipalities in Brazil.

Although having only 52% of the Northeast's population, until the 1990s the South had the second largest nonprofit sector in Brazil. Cultural and religious NPOs are the largest areas of activity in this region, which is one of the most prosperous regions in Brazil, and deeply characterized by European immigration. Social welfare organizations also appear in this region relatively more than in others.

The Central-West region, characterized by strong agricultural activity, and the North, which is the largest region — and where the Brazilian Amazon forest is located — are less populated and have a smaller number of NPOs. Religious NPOs are important in both regions, but in the North, professional associations appear as equally numerous.

In order to identify general results and to enable diagnostics for spatial autocorrelation, which suggests the need for spatial models, Table 2 presents the results of OLS regressions.

Interpreting the OLS results would only make sense if the diagnostics had presented no spatial autocorrelation. Given that the Moran's I and the Lagrange Multiplier tests had significant results for all models, confirming the existence of spatial processes, there is evidence that spatial models can explain more about this relationship that regular OLS regressions. These tests also indicate which spatial model is recommended in each case. Following Anselin and Rey's (2014) orientation, if the robust versions of both the spatial lag and spatial error tests are significant, as is the case here for human development and inequality, the model with a higher significant value should be used. This suggests the spatial lag model for HDI and spatial error model, which is the only one that is still significant for Gini. It should also be noted that the significant value of the Lagrange Multiplier Sarma test suggests a mix of spatial effects from regional omitted variables and from the effect of the outcome in one unit over its neighboring units. This mixed effect could be explored with geographically weighted regressions (Brunsdon, Fotheringham, and Charlton, 1996), which are not presented here in order

to focus on the most relevant findings for the country overall. In the following section, the results from spatial models are presented.

TABLE 2   OLS MODELS

	Dependent variable: Difference in HDI (2010-2000)	Dependent variable: Difference in Gini (2010-2000)
Constant	0.15283** (156.084)	-0.10128** (-26.611)
Government-NPOs Collaboration Rate of *convênios per 100,000 inhabitant*	-0.00020** (-13.087)	-0.00009**(-3.307)
Nonprofit fields of activity Advocacy NPOs per 100,000 inhabitant	0.00005** (3.335)	-0.00001 (-0.578)
Culture NPOs per 100,000 inhabitant	-0.00025** (-9.837)	0.0005 (1.226)
Educational NPOs per 100,000 inhabitant	-0.00020** (-2.405)	0.0005 (0.436)
Environmental NPOs per 100,000 inhabitant	-0.00004 (-0.405)	-0.00031 (-1.550)
Housing NPOs per 100,000 inhabitant	-0.00123** (-3.512)	-0.00047 (-0.770)
Professional associations per 100,000 inhabitant	0.00020** (13.521)	-0.00005* (-1.901)
Religious NPOs per 100,000 inhabitant	-0.00040** (-12.583)	0.00005 (1.001)
Social welfare NPOs per 100,000 inhabitant	-0.00022** (-7.237)	-0.0002 (-0.455)
Health NPOs per 100,000 inhabitant	-0.00132** (-8.768)	0.00014 (0.542)
Other NPOs per 100,000 inhabitant	0.00006** (1.972)	0.00013** (2.260)
Difference in total population	-0.00000** (-5.490)	0.00000** (5.436)
Difference in rural population	-0.00000 (-1.378)	0.00000** (2.191)
Difference in HDI	–	0.36490** (15.621)
Difference in Gini	0.11549** (15.621)	–
State capacity	-0.00000**(-4.113)	-0.00000 (-1.488)
N	5,562	5,562
R-squared	0.20	0.05
Akaike Information Criterion (AIC)	-21,060	-14,661
Moran's I	54.95**	4.56**
Lagrange Multiplier (lag)	2,527.70**	15.89**
Robust LM (lag)	345.47**	0.59
Lagrande Multiplier (error)	2,651.03**	17.35**
Robust LM (error)	468.80	2.05
Lagrange Multiplier (Sarma)	2,996.51**	17.95**

Source: Created by the author using data described in section 2.
** $p \leq 0.05$; * $p \leq 0.10$ (two-tailed tests); t-statistics in parentheses.

4. SPATIAL MODELS

This section explores the geographical effects identified above by explicitly modeling spatial relationships. Table 3 presents the results from the spatial error and spatial lag models, following the Lagrange Multipliers obtained in the OLS (Anselin and Rey, 2014). All models show an increase in the R-squared and decrease in the AIC values in the spatial models when compared to the OLS models, indicating that, as expected, spatial models fit the data better. Anselin and Rey (2014) indicate that a reduction of more than 10 in AICs already indicates a better model. A second general observation is that the Lagrange Multiplier tests are still significant, which shows the persistence of spatial effects not solved by these models. Despite this, the better fitted models from the spatial regressions enable preliminary analyses of the results for the whole country. Finally, before presenting the results from each model, the r-squares suggest the model for human development explains more about this phenomenon than the model for inequality.

Municipalities with higher rates of government-NPOs collaborations are associated with a lower inequality, but also with lower improvements in human development when compared to other municipalities. That is, as the summary statistics show that the minimum variation of HDI is still positive, all the municipalities in Brazil improved in human development from 2000 to 2010, but the municipalities with higher government-NPOs collaboration improved less than the others. On the other hand, these municipalities with a higher rate of government-NPOs collaborations had a bigger improvement in terms of inequality — i.e., a larger decrease in this outcome.

Density of NPOs seems to have a bigger effect on human development than on inequality. However, this effect is negative for most nonprofit fields of activity. The only exceptions are advocacy groups, professional associations and, at 90% confidence level, NPOs classified as "other" fields of activity. The last two kinds of NPOs also have a significant effect on inequality, but while the density of professional associations is associated to a lower inequality, the groups of "other" NPOs have a positive association with inequality.

The results also indicate that, for human development, spatial lag has a significant and positive effect, and for inequality the spatial error has a significant and positive effect. Therefore, human development spreads from one municipality to the neighboring municipalities, and regional factors (not included in this model) explain the growth of inequality. In addition, variations in human development and in inequality affect each other and demographic characteristics are also important, but to a lesser degree. State capacity only presents a significant effect on human development.

Tests for spatial autocorrelation continue to present significant results in the spatial lag and spatial error models. As previously explained, this suggests mixed spatial effects that could be treated with models such as the Geographically Weighted Regressions or spatial Durbin Models (Brunsdon, Fotheringham, and Charlton, 2002; Charlton, Fotheringham, and Brunsdon, 2009; Anselin and Rey, 2014). Due to space limitations and also in order to guarantee a proper discussion of the results achieved so far, this paper does not extend the analysis beyond the spatial lag and spatial error models already presented. For a regional analysis of these phenomena, for instance, inequality in the state of São Paulo, these more detailed and regionally varying models should be used.

TABLE 3   SPATIAL MODELS

	Difference in HDI (2010-2000): spatial lag model	Difference in Gini (2010-2000): spatial error model
Constant	0.05005** (12.854)	-0.10126** (-25.568)
Government-NPOs Collaboration Rate of *convênios per 100,000 inhabitant*	-0.00015**(-10.725)	-0.00008**(-2.996)
Nonprofit fields of activity Advocacy NPOs per 100,000 inhabitant	0.00003** (2.202)	-0.00001 (-0.534)
Culture NPOs per 100,000 inhabitant	-0.00019**(-7.796)	0.00004 (0.917)
Educational NPOs per 100,000 inhabitant	-0.00018**(-2.559)	0.00004 (0.369)
Environmental NPOs per 100,000 inhabitant	-0.00004 (-0.399)	-0.00031 (-1.564)
Housing NPOs per 100,000 inhabitant	-0.00110**(-3.375)	-0.00045 (-0.734)
Professional associations per 100,000 inhabitant	0.00018**(12.978)	-0.00005** (-1.962)
Religious NPOs per 100,000 inhabitant	-0.00033** (-11.076)	0.00006 (1.114)
Social welfare NPOs per 100,000 inhabitant	-0.00016** (-5.604)	-0.00001 (-0.254)
Health NPOs per 100,000 inhabitant	-0.00114** (-8.067)	0.00016 (0.617)
Other NPOs per 100,000 inhabitant	0.00005* (1.676)	0.00013** (2.317)
Difference in total population	-0.00000** (-6.877)	0.00000** (5.483)
Difference in rural population	-0.00000** (-3.005)	0.00000** (2.172)
Difference in HDI	–	0.36357** (15.147)
Difference in Gini	0.10170** (14.616)	–
State capacity	-0.00000**(-2.690)	-0.00000 (-1.600)
Spatial lag	0.73049** (27.062)	–
Spatial error	–	0.29401** (3.789)
N	5562	5562
R-squared	0.29	0.06
Akaike Information Criterion (AIC)	-21,704	-14,675

Source: Created by the author using data described in section 2.
** p ≤ 0.05; * p ≤ 0.10 (two-tailed tests); z-statistics in parentheses.

5. DISCUSSION AND CONCLUSION

Returning to the research question that guides this research — whether collaborations between governments and NPOs improve human development and reduce income inequality — the results from OLS and spatial models using data from Brazilian municipalities show evidence that government-nonprofit collaborations may be helpful for improving distributive issues, but these arrangements may also be detrimental for human development indicators. The density of NPOs from different fields also affects human development and inequality differently. However, most fields of nonprofit activity have a negative association with the evolution of human development from 2000 to 2010, while their association with inequality is, in the majority of cases, non-significant. Despite the need for further analyses on the causal mechanisms of the results obtained here, these results show that core assumptions in academia (and for some practitioners) — that cross-sectoral collaborations and that the density of nonprofit organizations improve societal outcomes — are not always true. This section explores the limitations, alternative explanations, and implications of these results.

A first limitation of this research is that it considers collaboration only as formal agreements (*convênios*) that transferred resources from the federal government to NPOs between 2000 and 2009, and analyzes human development and inequality as relevant societal outcomes. NPOs' leaders perceive limitations in the mechanism of *convênios* and advocate for changes in this process, allowing for additional and improved mechanisms of collaboration (Plataforma OSC 2010). Part of these improvements were already approved in the new regulatory framework for civil society organizations in Brazil in 2014, which is not covered in this research. A second limitation is that social outcomes cannot be exclusively attributed to a governance strategy (Fukuyama, 2013). These indicators are used, however, as "proxy results" (Rotberg, 2014:512) which evaluate what really matters in terms of governance. The goal of this study, however, is not to claim causal relationships. The associations identified in this research do not explain the causal mechanisms that relate NPOs to human development or inequality. Additional, qualitative, studies are needed to investigate how and what links NPOs to these social outcomes. Moreover, Brazilian NPOs from different areas of the country and fields of activity have managerial specificities that were not considered in this research. This leads to the final limitation: even with the data considered here, there are probably variations in how nonprofits and the government related to each other. Not all *convênios* between NPOs and the federal government are the same, and what makes a *convênio* positive or negative is beyond the scope of this research. Despite that, the results provide elements that contribute to the debate on governance.

There is a strong alternative explanation for the results obtained here, related to the endogeneity problem. That is, the relationship explained here may be reversed: NPOs and their collaboration with the government may be occurring in municipalities with low human development and high inequality, in order to reverse these indicators and improve these communities. Previous studies, however, show that community needs and available resources exert less influence in NPOs location than a high rate of NPOs previously working in a municipality (Marchesini da Costa, 2016). Despite this, in qualitative follow-ups to this research, the possibility of collaborations occurring in municipalities which are most in need, should be verified.

The implications of this research should consider, first, the discussion about the third hypothesis presented in this paper. There is no evidence to reject the existence of significant spatial variation in the effects of NPOs and their collaborations with the government on human development and in-

equality at municipal level. The significant Moran's *I*, Lagrange Multipliers and better AICs obtained in the spatial models for human development and inequality indicate spatial autocorrelation among them. These findings suggest that NPOs interested in human development and the reduction of income inequality should develop activities with a more regional focus, given that human development spreads across different units and inequality is influenced by regional factors. Partnerships between NPOs and the federal government should also explore this regional aspect. In addition, future research should analyze if these results are affected by other governance arrangements not included in this paper, such as contracts between NPOs and state governments, or inter-municipal consortiums.

The first hypothesis stated that collaboration involving financial transfers from the government to NPOs would lead to improved human development and would not be related to income inequality at municipal level. Models tested here indicate a very different result: government-NPOs collaborations are negatively associated both to human development and inequality. There is evidence, then, to reject this hypothesis. These findings contradict the general argument that NPOs are potential service providers that should be included in governance arrangements (Salamon and Toepler, 2015), but they also refute the claims that collaborations remove NPOs from having structural impact on society (Banks, Hulme, and Edwards, 2015). Future studies should explore the causal mechanisms that explain these results. The situation in the period analyzed, from 2000 to 2010, suggests that collaborations present worse results for human development than other governance arrangements, but government-NPO partnerships activate distributive channels for income in municipalities.

Finally, the hypothesis about the nonprofit fields of activity stated that NPOs closely related to service provision improve human development, while NPOs from fields related to community building, identity and structural causes reduce inequality in each municipality. Most of the results contradict this hypothesis, as no typical service provider field of activity is positively associated with the improvement of human development. This positive association only happens with two expressive fields of activity — advocacy groups and professional associations. Besides, the density of NPOs from most fields of activity is not related to inequality. The exception that seems to reduce inequality comes from expressive fields (professional associations), as expected. Additional studies could further analyze what differentiates the action of professional associations, ensuring that the density of these organizations have a positive effect.

This study raises more questions than it answers them, having several possibilities for follow-up analyses. The focus here was on a general analysis of collaboration, and not on detailed regional investigations. The results, nonetheless, show that there are spatial processes linking NPO density and government-NPO collaborations to different societal outcomes. Does that mean the results from collaborations between the government and religious NPOs differ from the results between the government and cultural organizations? Are the processes in Bahia the same as in Rio Grande do Sul? What are the factors influencing the social impact of NPOs that work in collaboration or NPOs with autonomous action? These are just some of the possible questions for the improvement of governance practices. Finally, if governance arrangements are considered in terms of their outcomes other dimensions should also be considered, such as the impact of these arrangements on violence or on democratization and political culture.

REFERENCES

ABOUASSI, Khaldoun. Hands in the pockets of mercurial donors NGO response to shifting funding priorities. *Nonprofit and Voluntary Sector Quarterly*, v. 42, n. 3, p. 584-602, 2013.

ALMOG-BAR, Michal; SCHMID, Hillel. Advocacy activities of nonprofit human service organizations: a critical review. *Nonprofit and Voluntary Sector Quarterly*, v. 43, n. 1, p. 11-35, 2013.

ANAND, Sudhir; SEN, Amartya. *Human development index*: methodology and measurement. Human Development Report Office (HDRO), United Nations Development Programme (UNDP), 1994.

ANHEIER, Helmut K. *Nonprofit organizations*: theory, management, policy. New York: Routledge, 2014.

ANSELIN, Luc. *Spatial regression analysis in R–A workbook*. Urbana. 2005. Available at: <www.csiss.org/gispopsci/workshops/2011/PSU/readings/W15_Anselin2007.pdf>. Accessed on: 30 Jan. 2017.

ANSELIN, Luc; REY, Sergio J. *Modern spatial econometrics in practice*: a guide to GeoDa, GeoDaSpace and PySAL. Chicago: GeoDa Press LLC, 2014.

ANSELIN, Luc; SYABRI, Ibnu; KHO, Youngihn. GeoDa: an introduction to spatial data analysis. *Geographical Analysis*, v. 38, n. 1, p. 5-22, 2006.

APPE, Susan; COSTA, Marcelo Marchesini da. Waves of nonprofit regulation and self-regulation in Latin America: evidence and trends from Brazil and Ecuador. In: BREEN, Oonagh; DUNN, Alison; SIDEL, Mark (Ed.). *Regulatory waves comparative perspectives on state regulation and self-regulation policies in the nonprofit sector*. Cambridge, UK: Cambridge University Press, 2016. p. 154-175.

ATACK, Iain. Four criteria of development NGO legitimacy. *World Development*, v. 27, n. 5, p. 855-864, 1999.

AZEVEDO, Dermi. A Igreja Católica e seu papel político no Brasil. *Estudos Avançados*, São Paulo, v. 18, n. 52, p. 109-120, 2004.

BALLER, Robert D. et al. Structural covariates of Us county homicide rates: incorporating spatial effects. *Criminology*, v. 39, n. 3, p. 561-588, 2001.

BANKS, Nicola; HULME, David; EDWARDS, Michael. NGOs, states, and donors revisited: still too close for comfort? *World Development*, v. 66, p. 707-718, 2015.

BORIS, Elizabeth T. Nonprofit organizations in a democracy: varied roles and responsibilities. *Nonprofits & government*: collaboration and conflict. 2. ed. Washington, DC: Urban Institute, 2006. p. 1-36.

BRUNSDON, Chris; FOTHERINGHAM, A. S.; CHARLTON, Martin E. Geographically weighted summary statistics — a framework for localised exploratory data analysis. *Computers, Environment and Urban Systems*, v. 26, n. 6, p. 501-524, 2002.

BRUNSDON, Chris; FOTHERINGHAM, A. S.; CHARLTON, Martin E. Geographically weighted regression: a method for exploring spatial nonstationarity. *Geographical Analysis*, v. 28, n. 4, p. 281-298, 1996.

CHARLTON, Martin; FOTHERINGHAM, Stewart; BRUNSDON, Chris. Geographically weighted regression. *White Paper. National Centre for Geocomputation. National University of Ireland Maynooth*, 2009.

CORNFORTH, Chris; HAYES, John Paul; VANGEN, Siv. Nonprofit-public collaborations understanding governance dynamics. *Nonprofit and Voluntary Sector Quarterly*, v. 44, n. 4, p. 775-795, 2014.

COUTINHO, Raquel Z.; GOLGHER, André B. The changing landscape of religious affiliation in Brazil between 1980 and 2010: age, period, and cohort perspectives. *Revista Brasileira de Estudos de População*, v. 31, n. 1, p. 73-98, 2014.

DALE, Mark R. T.; FORTIN, Marie-Josée. *Spatial analysis*: a guide for ecologists. Cambridge, UK: Cambridge University Press, 2014.

FRUMKIN, Peter. *On being nonprofit*: a conceptual and policy primer. Cambridge, MA: Harvard University Press, 2002.

FUKUYAMA, Francis. What is governance? *Governance*, v. 26, n. 3, p. 347-368, 2013.

GRIMM, Michael et al. A human development index by income groups. *World Development*, v. 36, n. 12, p. 2527-2546, 2008.

GUO, Chao; SAXTON, Gregory D. Voice-in, voice-out: constituent participation and nonprofit advocacy. *Nonprofit Policy Forum*, v. 1, n. 1, p. 1-27, 2010.

IBGE. As fundações privadas e associações sem fins lucrativos no Brasil — 2010. 2010. Available at: <ftp://ftp.ibge.gov.br/Fundacoes_Privadas_e_Associacoes/2010/fasfil.pdf>. Accessed on: 11 Jan. 2017.

KEARNS, Kevin; PARK, Chisung; YANKOSKI, Linda. Comparing faith-based and secular community service corporations in Pittsburgh and Allegheny County, Pennsylvania. *Nonprofit and Voluntary Sector Quarterly*, v. 34, n. 2, p. 206-231, 2005.

KOCH, Dirk-Jan et al. Keeping a low profile: what determines the allocation of aid by non-governmental organizations? *World Development*, v. 37, n. 5, p. 902-918, 2009.

KRISCHKE, Paulo J. Church base communities and democratic change in Brazilian society. *Comparative Political Studies*, v. 24, n. 2, p. 186-210, 1991.

LANDIM, Leilah et al. Brazil. In: SALAMON, Lester et al. *Global civil society*: dimensions of the nonprofit sector. Baltimore: The Johns Hopkins Comparative Nonprofit Sector Project, 1999.

LEVI-FAUR, David. From "big government" to "big governance"? In: LEVI-FAUR, David (Ed.). *The Oxford handbook of governance*. Oxford, UK: Oxford University Press, 2012. p. 3-18.

LUSTIG, Nora; LOPEZ-CALVA, Luis F.; ORTIZ-JUAREZ, Eduardo. Declining inequality in Latin America in the 2000s: the cases of Argentina, Brazil, and Mexico. *World Development*, v. 44, p. 129-141, 2013.

MARCHESINI DA COSTA, Marcelo. What influences the location of nonprofit organizations? A spatial analysis in Brazil. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, v. 27, n. 3, p. 1064-1090, 2016.

MILWARD, H. Brinton; PROVAN, Keith G. Governing the hollow state. *Journal of Public Administration Research and Theory*, v. 10, n. 2, p. 359-380, 2000.

MOSLEY, Jennifer E. Keeping the lights on: how government funding concerns drive the advocacy agendas of nonprofit homeless service providers. *Journal of Public Administration Research and Theory*, v. 22, n. 4, p. 841-866, 2012.

NEAL, Rachael. The importance of the state: political dimensions of a nonprofit network in Oaxaca, Mexico. *Nonprofit and Voluntary Sector Quarterly*, v. 37, n. 3, p. 492-511, 2007.

NICHOLSON-CROTTY, Jill. Politics, policy, and the motivations for advocacy in nonprofit reproductive health and family planning providers. *Nonprofit and Voluntary Sector Quarterly*, v. 36, n. 1, p. 5-21, 2007.

PERMANYER, Iñaki. Using census data to explore the spatial distribution of human development. *World Development*, v. 46, p. 1-13, 2013.

PLATAFORMA OSC. *Plataforma por um novo marco regulatório para as organizações da sociedade civil*. 2010. Available: <http://plataformaosc.org.br/wp-content/uploads/2011/10/Plataforma-principal.pdf>. Accessed on: 11 Jan. 2017.

RANIS, Gustav; STEWART, Frances; RAMIREZ, Alejandro. Economic growth and human development. *World Development*, v. 28, n. 2, p. 197-219, 2000.

R CORE TEAM. R: a language and environment for statistical computing, issued 2015. 2015. Available at: <www.R-project.org/>. Accessed on: 11 Jan. 2017.

RHODES, Roderick Arthur. Waves of governance. In: LEVI-FAUR, David (Ed.). *Oxford handbook of governance*. Oxford, UK: Oxford University Press, 2012.

RISSE, Thomas. *Governance without a state?*: policies and politics in areas of limited statehood. New York, NY: Columbia University Press, 2013.

ROTBERG, Robert I. Good governance means performance and results. *Governance*, v. 27, n. 3, p. 511-518, 2014.

SAIDEL, Judith R. Resource interdependence: the relationship between state agencies and nonprofit organizations. *Public Administration Review*, v. 51, n. 6, p. 543-553, 1991.

SALAMON, Lester M. The new governance and the tools of public action: an introduction. In: SALAMON, Lester M. (Ed.). *The tools of government*: a guide to the new governance. Oxford, UK: Oxford University Press, 2002.

SALAMON, Lester M.; ANHEIER, Helmut K. Civil society in comparative perspective. In: SALAMON, Lester M. et al. *Global civil society*: dimensions of the nonprofit sector. Baltimore: Johns Hopkins Center for Civil Society Studies, 1999. p. 3-39.

SALAMON, Lester M. et al. The state of global civil society and volunteering: latest findings from the im-

plementation of the UN nonprofit handbook. *Center for Civil Society Studies Working Paper*, n. 49, 2013.

SALAMON, Lester M.; TOEPLER, Stefan. Government-nonprofit cooperation: anomaly or necessity? *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, v. 26, n. 6, p. 2155-2177, 2015.

SCHMID, Hillel; BAR, Michal; NIREL, Ronit. Advocacy activities in nonprofit human service organizations implications for policy. *Nonprofit and Voluntary Sector Quarterly*, v. 37, n. 4, p. 581-602, 2008.

SCOTT, W. Richard et al. Advocacy organizations and the field of youth services: ongoing efforts to restructure a field. *Nonprofit and Voluntary Sector Quarterly*, v. 35, n. 4, p. 691-714, 2006.

SOKOLOWSKI, S. Wojciech. Effects of government support of nonprofit institutions on aggregate private philanthropy: evidence from 40 countries. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, v. 24, n. 2, p. 359-381, 2013.

SUDA, Yuko. Devolution and privatization proceed and centralized system maintained: a twisted reality faced by Japanese nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly*, v. 35, n. 3, p. 430-452, 2006.

UNDP. Human Development Index (HDI). 2015. Available at: <http://hdr.undp.org/en/content/human-development-index-hdi>. Acessed on: 11 Jan. 2017.

VERSCHUERE, Bram; DE CORTE, Joris. Nonprofit advocacy under a third-party government regime: cooperation or conflict? *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, v. 26, n. 1, p. 222-241, 2012.

Marcelo Marchesini da Costa

PhD Candidate at the State University of new York at Albany (Suny). Holds a Masters in Administration from the Brasilia University (UnB). Works as a professor and researcher at Insper. E-mail: marcelomc5@insper.edu.br.