

What Influences the Location of Nonprofit Organizations? A Spatial Analysis in Brazil



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Research Question

What are the local characteristics influencing where new nonprofits will be established?

Brief Abstract

Previous studies on the geographical distribution of nonprofits have offered two explanations for why nonprofits form in certain areas: community need and resource availability. This paper explores these two hypotheses, in addition to examining existing nonprofit density in an area as another potential determinant of nonprofit location. Using data on 5562 Brazilian municipalities in the year 2000, this analysis finds evidence that the influence of community needs, resource availability, and nonprofit density varies across nonprofits in different fields of activity. This explains why previous studies may have had conflicting results. Although this study offers a macro perspective, the results suggest that, in order to develop effective strategies to address social needs, practitioners must examine local circumstances at the municipal level.

Key Findings

- ▶ The analysis of nonprofits overall shows no evidence that municipalities with worse socioeconomic indicators or access to resources are attracting more nonprofits in Brazil.
- ▶ Nonprofits are attracted to specific areas by higher rates of previously existing nonprofits.
- ▶ Religious organizations, the biggest group of nonprofits in Brazil, tend to have different influences on location, typically seeking out highly urbanized areas with high homicide rates.

Opportunities for Action

- ▶ Analyses of nonprofit location and the geographical elements of nonprofits can benefit from the use of geographically weighted regression (GWR) models and maps.
- ▶ It is likely more beneficial for organizations to consider trends in their particular nonprofit fields than to look at nonprofit trends overall, as influences on location differ significantly between different types of nonprofits.
- ▶ Practitioners should consider the effects of the decision to establish a nonprofit in a certain area as this will also impact the policy environment.

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What Influences the Location of Nonprofit Organizations? A Spatial Analysis in Brazil

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Abstract What are the local characteristics influencing where new nonprofits will be established? How important are community needs, available resources, or the existence of similar organizations for nonprofits' location? This paper analyzes how the characteristics of 5562 Brazilian municipalities in the year 2000 help explain the location of nonprofits formed between 2001 and 2010. Based on geographically weighted regressions, results indicate that neither access to resources nor poor socioeconomic indicators are powerful influences on nonprofit location in Brazilian municipalities. The main predictor of nonprofit entry is a high pre-existing density of nonprofits in that area. These findings, however, vary across regions and nonprofit fields of activity. By mapping the effect of key explanatory variables, this paper helps understand nonprofit location. The methodology and findings on nonprofit location presented here are novel and may contribute to research in other countries.

Résumé Quelles sont les caractéristiques locales qui influencent l'endroit où vont s'établir les nouvelles organisations à but non lucratif ? Quelle est l'importance des besoins de la collectivité, des ressources disponibles ou de l'existence d'organisations semblables pour l'emplacement des organisations à but non lucratif ? Cet article analyse dans quelle mesure les caractéristiques de 5 562 municipalités brésiliennes en 2000 permettent d'expliquer l'emplacement des organisations à but non lucratif créées entre 2001 et 2010. Tenant compte de régressions géographiquement pondérées, les résultats indiquent que ni l'accès aux ressources ni les mauvais indicateurs socioéconomiques n'exercent une influence puissante sur les organisations à but non lucratif dans les municipalités brésiliennes. Le principal

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indicateur d'enregistrement des organisations à but non lucratif est une densité préexistante élevée de ces organisations dans ces zones. Ces résultats, cependant, varient selon les régions et les secteurs d'activité de ces organisations. En cartographiant l'effet des principales variables explicatives, cet article permet de comprendre l'emplacement des organisations à but non lucratif. La méthodologie et les résultats présentés ici sur l'emplacement des organisations sont inédits et peuvent contribuer aux recherches dans d'autres pays.

Zusammenfassung Welche lokalen Merkmale nehmen Einfluss darauf, wo neue gemeinnützige Organisationen gegründet werden? Wie wichtig sind die Bedürfnisse der Gemeinde, die verfügbaren Ressourcen oder das Vorhandensein ähnlicher Organisationen für den Standort einer gemeinnützigen Organisation? Dieser Beitrag untersucht, wie die Merkmale von 5.562 brasilianischen Gemeinden im Jahr 2000 zur Erklärung des Standorts gemeinnütziger Organisationen, die zwischen 2001 und 2010 gegründet wurden, beitragen. Beruhend auf geografisch gewichteten Regressionen weisen die Ergebnisse darauf hin, dass weder der Zugang zu Ressourcen noch schwache sozioökonomische Indikatoren einen starken Einfluss auf den Standort einer gemeinnützigen Organisation in brasilianischen Gemeinden haben. Der Hauptprädiktor für den Einzug einer gemeinnützigen Organisation ist eine zuvor bestehende hohe Dichte von gemeinnützigen Organisationen in dem Gebiet. Diese Ergebnisse variieren jedoch je nach Region und gemeinnützigen Bereich. Durch die Ausarbeitung der Effekte wichtiger erklärender Variablen trägt dieser Beitrag zu dem Verständnis über den Standort gemeinnütziger Organisationen bei. Die hierin dargestellte Methodik und präsentierten Ergebnisse in Bezug auf den Standort gemeinnütziger Organisationen sind neu und können zur Forschung in anderen Ländern beitragen.

Resumen ¿Cuáles son las características locales que influyen en dónde se establecerán nuevas organizaciones sin ánimo de lucro? ¿Qué importancia tienen las necesidades de la comunidad, los recursos disponibles, o la existencia de organizaciones similares para la localización de las organizaciones sin ánimo de lucro? El presente documento analiza cómo las características de 5.562 municipios brasileños en el año 2000 ayudan a explicar la localización de las organizaciones sin ánimo de lucro formadas entre 2001 y 2010. Basándose en regresiones ponderadas geográficamente, los resultados indican que ni el acceso a los recursos ni los bajos indicadores socioeconómicos son influencias poderosas en la localización de las organizaciones sin ánimo de lucro en los municipios brasileños. El principal pronosticador de la entrada de organizaciones sin ánimo de lucro es una alta densidad preexistente de organizaciones similares en dicha área. Estos hallazgos, sin embargo, varían de región en región y según los campos de actividad de las organizaciones sin ánimo de lucro. Al cartografiar el efecto de variables explicativas claves, el presente documento ayuda a comprender la localización de las organizaciones sin ánimo de lucro. La metodología y los hallazgos sobre la localización de las organizaciones sin ánimo de lucro presentados en el presente documento son innovadores y pueden contribuir a la investigación en otros países.

Keywords Nonprofit location · Nonprofit density · Brazil · Spatial analysis · Geographically weighted regression

Introduction

What make nonprofits more likely to be formed in certain areas? Previous studies on this topic present two main explanations: that community needs attract nonprofits and that these organizations are established where there are more resources available for their action (e.g., Grønbjerg and Paarlberg 2001; Fruttero and Gauri 2005; Peck 2008; Brass 2012; Yan et al. 2014). Other relevant factors, such as demographic characteristics (Bielefeld et al. 1997; Grønbjerg and Paarlberg 2001; Yan et al. 2014), generosity and political culture (Bielefeld 2000), political influence (Brass 2012), or complementarities with other nonprofit actions (Fruttero and Gauri 2005) appear as possible explanations for nonprofit location as well. Nevertheless, these previous studies present conflicting results and do not explain the reasons for such variation. Also, studies of nonprofit location are mostly focused in the United States and are, to my knowledge, unprecedented in Latin America. This paper addresses these limitations in two ways: (1) by discussing differences among influences on the location of the four most common groups of nonprofits in Brazil and (2) by analyzing regional differences in the influences of nonprofit location in Brazil, i.e., I aim to discuss why nonprofits with different services and activities are located in different places. Specifically, I investigate if socioeconomic needs, available resources, and the density of nonprofits previously established in all 5562¹ Brazilian municipalities in the year 2000 affected the creation of nonprofits between 2001 and 2010 in these localities. Policy makers, nonprofit entrepreneurs, and donors can benefit from this investigation by better understanding why nonprofits with different programmatic emphases locate in different parts of Brazil.

Scholars from different academic fields argue that nonprofits are increasingly part of governance arrangements with governments (Salamon 1987; Milward and Provan 2000; Boris 2006). Knowing where nonprofits are located and how to promote the development of new nonprofits is important in order to decide if these organizations can be part of arrangements that aim to solve complex social issues (Fruttero and Gauri 2005; Yan et al. 2014). High nonprofit density increases the public awareness of the sector and the confidence in nonprofit performance (McDougle and Lam 2014). On the other hand, the concentration of nonprofits in affluent communities compromises the effectiveness of nonprofits targeting social change because it might increase inequalities, given that wealthier areas will have a better network of service providers, advocates, and community builders (McDougle and Lam 2014; McDougle 2015).

The literature emphasizes access to resources and community needs as reasons for nonprofit location. Nonprofits might establish themselves in more prosperous areas in order to have access to donors and political connections or other resources

¹ Brazil has 5,570 municipalities in 2015. I did not include in this research the 6 municipalities created since 2010 and the islands of 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).

(Bielefeld et al. 1997; Fruttero and Gauri 2005; Brass 2012). In terms of community needs, here I test if poverty, unemployment, inequality, or high violence attracts nonprofits to a certain municipality, presumably to improve these social indicators. However, nonprofits may not be interested in solving any kind of social problem or may actually promote extreme and undemocratic initiatives. Armony (2004, p. 56), for instance, exemplifies “civil society’s dark side” with the American nonprofits that promoted segregation, German associations supporting Nazism, and Argentinean organizations that contributed to a weak rule of law and high inequality in that country. Thus, nonprofits are not a uniform, monolithic sector, and different kinds of nonprofits might be attracted and motivated by different factors. Using spatial methods and disaggregating nonprofits according to main fields of nonprofit activity in Brazil, this paper presents a more nuanced analysis of what affects the location of these organizations in that country.

This study also differs from previous research in terms of the unit of analysis considered. There are previous studies on the location of nonprofit organizations analyzing counties (e.g., Grønbjerg and Paarlberg 2001) or metropolitan areas in the United States (e.g., Bielefeld et al. 1997; Bielefeld 2000; Bielefeld and Murdoch 2004; Peck 2008; Yan et al. 2014). Studies on this topic frequently neglect considering a whole country at a subnational (e.g., municipal) level and generally overlook the global South (for exceptions, see Fruttero and Gauri 2005; Brass 2012). This paper focuses on a major country in the developing world and intends to provide a diversified explanation for nonprofit location by analyzing what affects this phenomenon across Brazilian municipalities.

The results indicate that measures of community need are not strong determinants of nonprofit location in Brazil. Differently than expected, more income inequality and unemployment rate are associated with a lower rate of nonprofits created between 2001 and 2010. Among the available resources, only the percentage of rural population, which is used as a measure of a higher social capital (Grønbjerg and Paarlberg 2001), is positively associated with nonprofit location. The main predictor of the increase of nonprofits in a municipality is the density of nonprofits previously existing in that geographic area. The concentration of nonprofits in certain areas might suggest the existence of resources or need for their actions, but, likewise, there are organizational benefits from clustering (Bielefeld and Murdoch 2004). These results, however, vary across different regions and nonprofit fields of activity. Professional associations, for instance, are attracted to areas of higher poverty, especially in the wealthier South of Brazil, while in most parts of the poorer regions of the North and Northeast, poverty has no significant effect. Differently than other nonprofit fields of activity, religious organizations are not attracted to areas with higher nonprofit density in most parts of the country. By mapping the main results of geographically weighted regressions (GWR), this paper presents regional differences in the determinants of nonprofit location in four fields of activity: religious, cultural, and advocacy nonprofits, as well as professional associations.

This paper starts by presenting the main characteristics of the nonprofit sector in Brazil. A second section discusses theoretical arguments and findings from the literature regarding what attracts nonprofits to certain areas. The following section

presents the data and methods adopted in this research. A forth section presents the results from ordinary least squares (OLS) and GWR. The fifth section discusses these findings and its implications. Finally, I present the conclusions, limitations, and agenda for future research.

The Nonprofit Sector in Brazil

In 2010, there were more than 290,000 nonprofit organizations in Brazil, employing 2.1 million people (IBGE 2010). Despite the aggregate numbers and a history that started with Catholic organizations more than one century ago (Landim et al. 1999), the nonprofit sector in Brazil is still incipient if compared to countries such as the United States, where the number of nonprofits reach more than 1,500,000 organizations (NCCS 2016). In 2010 one quarter of Brazilian cities² had no more than seven nonprofit organizations each.

The most prominent fields of nonprofit activity in Brazil are also distinct from other countries. While in the United States, areas such as education, health, and human services constitute the largest number of nonprofits (Boris 2006), in Brazil, these fields are less dominant, possibly due to the traditionally strong role of the government in the direct provision of these services. Additionally, the growth of nonprofit organizations in Brazil is being unequal across different fields of nonprofit activity. Illustration 1 presents the number of Brazilian nonprofits according to their official field of activity.³

Religious organizations, professional associations, advocacy groups, and cultural organizations constitute more than 70 % of Brazilian nonprofits. Religious organizations include all kinds of churches and temples, as well as associations or congregations that promote religious beliefs and support communities through service provision (IBGE 2010). Brazil has the highest number of Catholics in the world, but over the last decades, there was a rapid increase in evangelical churches (Garmany 2013). Religious nonprofits grew in the 2000s on a higher rate than any other group of nonprofits (IBGE 2010). Professional associations involve three kinds of organizations: the biggest group is formed by associations of farmers, followed by associations of other specific professions—focused as well on sharing information, establishment of norms, and dialogue with the government—and, finally, associations of employers (IBGE 2010). Advocacy groups, in the Brazilian classification, include neighborhood associations, community centers, associations of rural development, nonprofit organizations focused on training and employment, and associations representing specific groups (IBGE 2010). While professional associations follow a more traditional role of representation, based on professional identification, advocacy groups include a mix of organizations that deal with a more diverse sense of identity, such as nonprofits dealing with the LGBT or immigrant

² In Brazil one municipality is always a city. Here the terms are adopted interchangeably.

³ The areas of activity considered here follow the official register of the organizations for fiscal purposes in Brazil. Several authors have pointed out, however, that nonprofits often develop activities in several of these areas (e.g., Almog-Bar and Schmid 2013).

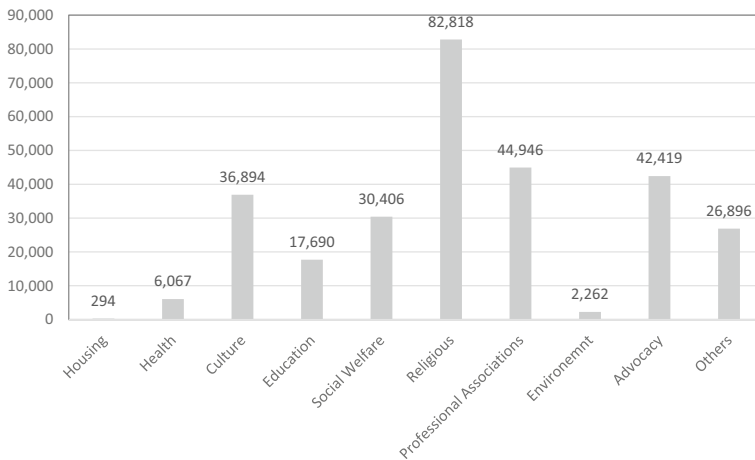


Illustration 1 Nonprofit organizations according to their field of activity, active in 2010. *Source* Created by the author, based on data officially requested to the federal government

communities. Nonprofits working with advocacy grew in Brazil especially in the 1990s, a period coincident with the “golden age of international cooperation,” when Brazil was the country receiving most funding from European aid agencies (Biekart 2014). Finally, cultural nonprofits are organizations working with all kinds of arts and culture, including associations and clubs focused on sports and recreation (IBGE 2010). As it should be clear, in each of these fields of activity, there is still a great variety of organizations. For instance, nonprofits working with arts may follow logics distinct from the ones followed by sports nonprofits, but the data available for this research merge them in the cultural field of activity. Despite the persistent internal variation, breaking the analysis of nonprofit location by fields of activity improves the identification of meaningful distinctions among these groups.

Illustration 2 presents clusters of nonprofits per 10,000 residents, considering each of the four main fields of nonprofit activity in Brazil. There are important differences in how nonprofits from different fields cluster regionally. These maps are based on the values of local indicators of spatial association (LISA). LISA values indicate the direction and strength of the association between the value of a variable in a focal unit and the average value of that variable among its neighboring units (Anselin 1995). In this manner, if the number of nonprofits per 10,000 residents in Brazilian municipalities were randomly distributed, these maps should be totally blank, indicating no association between the density of nonprofits in any given unit and the average density among its neighbors (i.e., no clustering). There are, however, gray areas (low–low clusters) indicating that these municipalities have a lower density of nonprofits than the global average and are surrounded by neighboring municipalities that, on average, have a lower than average density of nonprofits. Also, the black spots (high–high cluster) indicate municipalities in which the rate of nonprofits from that particular area of activity is higher than the global

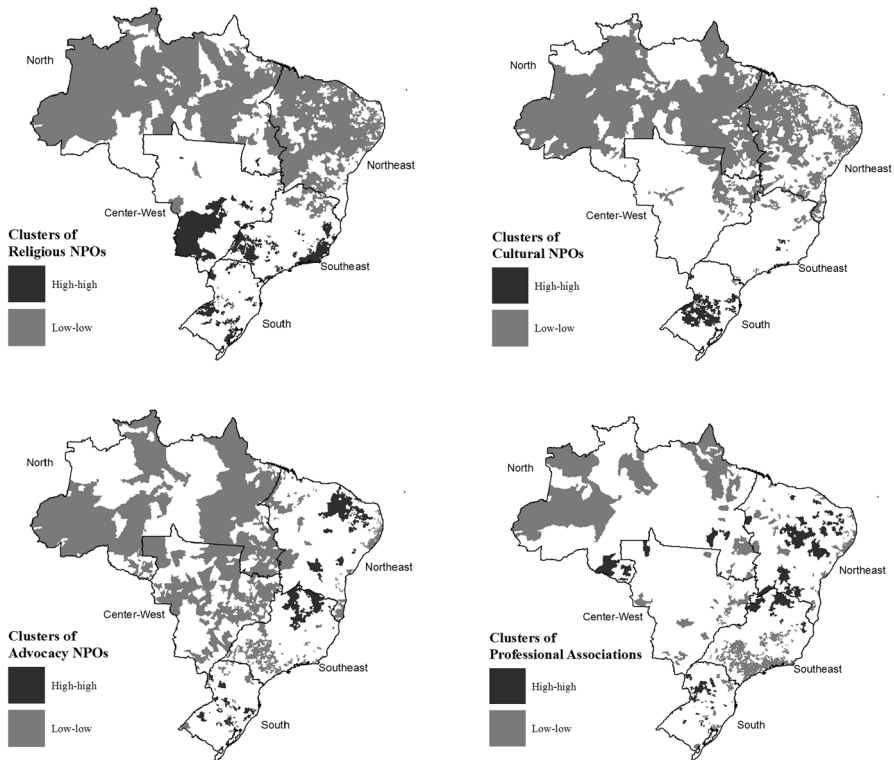


Illustration 2 LISA Cluster maps—main kinds of nonprofits in Brazil. *Source* Created by the author, based on data officially requested to the federal government

average, and the neighboring municipalities likewise have a higher than average density of nonprofits from that same area of activity.

The maps from Illustration 2 indicate that nonprofits from different fields of activity present distinct clusters across Brazilian regions. The Southeast, which is wealthier, more industrialized, and more populated than other regions, has high–high and low–low clusters for all four groups of nonprofits, although with fewer clusters for cultural organizations.

The Northeast is the second most populated region in Brazil, in addition to being an area with some of the poorest municipalities in Brazil. In this region, there is a strong presence of advocacy groups and, more prominently, professional associations, which in most cases are associations of small farmers. Despite the known religiosity and cultural expressions common to the Brazilian Northeast, there is a low concentration of religious and cultural nonprofits in this area. This could be partially because informal groups are not included in this study.

The South is a region with higher development, a strong influence of more recent European immigrants, and third among the Brazilian regions in terms of population. In this region, there are high–high clusters of nonprofits from all four main fields of activity, with a bigger area of high–high clusters of cultural organizations.

The Center-West, characterized by a 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 nonprofits. There are almost exclusively low–low clusters of nonprofit activity in these regions, with the exception of some clusters of religious organizations in the Center-West and professional associations in both regions.

The LISA maps suggest that distinct characteristics influence the location of distinct kinds of nonprofits. The developed South appears to attract nonprofits from all main fields of activity, which might be due to more resources available in this area. The needier Northeast, on the other hand, presents only high–high clusters for professional associations and advocacy groups, suggesting that these two groups of nonprofit activity might be more sensitive to communities' needs. These relationships require a more detailed investigation that follows in the next sections. Before this analysis, the next section presents the theoretical debates and hypotheses adopted here to discuss nonprofit location.

What Determines Nonprofit Location?

Most of the literature focuses on community needs and access to resources as potential determinants of nonprofit location (e.g., Grønbjerg and Paarlberg 2001; Fruttero and Gauri 2005; Peck 2008; Brass 2012; Yan et al. 2014). The influence of organizations previously existing in a certain area over the creation of new organizations is not as commonly debated for nonprofits (for an exception, see Fruttero and Gauri 2005), although studies on private firms discuss the benefits that can accompany clustering, and therefore why organizations are drawn to form in proximity to each other (Baum and Haveman 1997). In this section, I explore these three potential influences over nonprofit location. It should be noted, nonetheless, that the lack of studies on nonprofit location in Latin America prevents the use of a theoretical background more adjusted to the reality of that region. Regional factors, such as the reduction on funds from international cooperation and the changing environment in terms of government funding and private donations (Mendonça et al. 2014), may affect nonprofit location in Brazil. The choice to analyze here the 'usual suspects' should be considered not only a link to the established literature but also a preliminary step for the inclusion of these more regionally determined influences on nonprofit location.

Community Needs

H1 The higher the measures of community need in a municipality (i.e., high inequality, high poverty, high unemployment, high homicide rates), the more likely nonprofits are to be formed in that municipality.

The argument that nonprofits go where they are most needed is based on an assumption that nonprofits intend to help disadvantaged groups. Brass (2012) claims that this view is expressed in the mission statement of most development nonprofits.

Grønbjerg and Paarlberg (2001) argue that community needs attracting nonprofits is coherent with the demand-side explanation for nonprofit organizations. According to this theory, nonprofit organizations exist to provide services that are not covered by for-profit companies or by the government (Weisbrod 1978). This suggests that, in certain communities, there is demand, but there is a limited capacity to pay for these services, which discourages for-profit companies, and the demanding group is not sufficiently numerous or powerful to gain government attention (Weisbrod 1978).

Previous studies, predominantly in the United States, investigate how community needs inform nonprofit location, presenting mixed results. Peck (2008) found that nonprofits are located in poorer neighborhoods in the metropolitan area of Phoenix, in the United States. Similarly, Yan et al. (2014) concluded that anti-poverty nonprofits are located where they are most needed in the Greater Hartford region. Kim (2013) found that income inequality is a measure of community needs attracting more nonprofits to counties in the United States. Based on a study of nonprofits in Kenya, Brass (2012) presented evidence that lack of access to healthcare in a community might be positively associated with nonprofit location. Other studies, on the other hand, did not find measures of community needs as influences to nonprofit location. Bielefeld et al. (1997) concluded that, in Dallas County, measures of community need do not affect nonprofit location. Grønbjerg and Paarlberg (2001), analyzing Indiana counties, found no support for measures of need as determinants of nonprofit density. Fruttero and Gauri (2005), likewise, found no evidence that nonprofit programs were targeting the poorest areas in Bangladesh.

As indicated in the previous paragraph, poverty is the most common measure of need adopted by the literature on nonprofit location (e.g., Fruttero and Gauri 2005; Peck 2008; Yan et al. 2014). For this reason I include the percentage of poor families in each municipality as one of the variables that might contribute to explain nonprofit location in Brazil. Following previous studies, I also include as social issues that might attract nonprofits: unemployment rate (Peck 2008), homicide rates (Caldeira and Holston 1999), and inequality (Kim 2013).

The literature tends to consider the location of nonprofits in general, and not segmented according to their fields of activity (e.g., Peck 2008; Brass 2012; Kim 2013; Yan et al. 2014). Grønbjerg and Paarlberg (2001), who debate the distinction between charitable, advocacy, and mutual-benefit nonprofits, and Fruttero and Gauri (2005), who discuss different programs from major nonprofits in Bangladesh, are rare exceptions that confirm the value of unpacking the nonprofit sector, through their distinct findings for different groups of organizations.

In this paper, I start by analyzing whether socioeconomic characteristics of a community affect the location of new nonprofits in general. I expect that municipalities with worse socioeconomic indicators will be more likely to attract new nonprofits. After the discussion of nonprofits overall, I focus on analyses disaggregating the four main fields of nonprofit activity in Brazil—religious, advocacy, cultural, and professional associations. It would be possible to state hypotheses indicating the expected effect of community needs on each of the main nonprofit fields of activity, but this would result in four additional hypotheses,

which, for clarity purposes, I will avoid. I expect, however, to find differences in how measures of community need affect the location of nonprofits from these different fields.

Access to Resources

H2 The higher the measures of access to resources in a municipality (i.e., high population density, high rural population, high government investments, or being a state capital), the more likely nonprofits are to be formed in that municipality.

If nonprofits are not attracted by community needs, an opposite explanation for their location is the availability of resources in a certain area. This hypothesis is frequently investigated as a motivation to nonprofit location (e.g., Grønbjerg and Paarlberg 2001; Fruttero and Gauri 2005; Peck 2008; Brass 2012; Yan et al. 2014). Grønbjerg and Paarlberg (2001) argue that “[l]ike all other organizations, nonprofits must secure resources from their environment to survive, suggesting that they will be most prevalent where resources needed for their survival are plentiful.” Resources in this context are not only money but also available workers and volunteers that might be useful for nonprofits (Grønbjerg and Paarlberg 2001).

Previous research is consistent in confirming the importance of access to resources for nonprofit location. Brass (2012) claimed that, in Kenya, access to resources attracts nonprofits to certain communities. Bielefeld et al. (1997) concluded that, in Dallas County, rich neighborhoods attract nonprofits due to the availability of possible donors or clients that would be able to pay fees for service. Fruttero and Gauri (2005), Peck (2008), and Yan et al. (2014) presented similar results, claiming that nonprofits can be “pragmatic and charitable at the same time.”

In general, it is challenging to identify resources available in a community. Researchers often choose proxies for these measures. Peck (2008, p. 142) uses “average occupied housing values and the proportion of housing units that are renter occupied to measure the resources a neighborhood has.” Grønbjerg and Paarlberg (2001) adopt library funding per capita as a measure of local government funding. Grønbjerg and Paarlberg (2001) claim that the existence of government funds to nonprofit organizations, as proposed by Salamon (1987), is an incentive for new nonprofits to be created in that area. Wolpert (1988) argues that public funding and private donations follow similar patterns in each region, i.e., areas with higher public funding to nonprofits are expected to have higher levels of private donations to these organizations. For this reason, I use the average investment per capita of local governments as a measure of available resources.

The literature claims as well that certain communities’ characteristics indicate resource availability. Wolpert (1988), analyzing 85 American metropolitan areas, concluded that small size communities with moderate income and a low level of distress are more prone to generosity. Grønbjerg and Paarlberg (2001), based on Putnam et al. (1994) and others, emphasize that small communities, not densely populated, attract a higher rate of nonprofits by enabling more social capital. In this sense, the percentage of rural population and population density might be indirectly related to available resources. I include these variables as measures of resource

availability, but it should be noted that different kinds of resources might be captured: a higher rate of rural population and lower population density might indicate higher social capital, while more urban and densely populated cities are expected to concentrate more financial and human resources. Finally, a dummy variable for state capitals was added in this study, because these cities in Brazil tend to have better structure, more population, and access to the government, which are all resources that could be useful for nonprofits.

In summary, I consider the percentage of rural population as a proxy for social capital, government investments as a proxy for access to public funds and contracting, population density as a proxy for the concentration of volunteers, workers, and donors, and state capitals as a proxy for political connections and other resources. I expect that municipalities with more resources will be more likely to attract new nonprofits. Similarly to the measures of need, I further expect that, against the null hypotheses that there are no differences across the four main fields of activity, there will be differences in what resources attract nonprofits from different fields.

Clustering Effects

H3 The higher the previous nonprofit density in a municipality, the more likely nonprofits are to be formed in that municipality.

Nonprofit studies tend to overlook how the previous nonprofit density affects the location of new nonprofits, despite research in other areas that adopt community ecology theory and institutional theory arguments to discuss organizational clustering (e.g., Lomi 1995; Baum and Haveman 1997; Ruef 2000; Freeman and Audia 2006).

A high rate of existing nonprofits (i.e., high concentration) might indicate that, at least until it reaches saturation, needs and resources are available in that area. There are also organizational benefits of clustering. Among these benefits, Bielefeld and Murdoch (2004), complementing Baum and Haveman's (1997) model, list shared structure, access to specialized resources, knowledge spillovers, information about demand and feasibility, and reduction of search-costs for customers.

The few articles on nonprofit studies that address clustering of nonprofit organizations present mixed results. Joassart-Marcelli and Wolch (2003), investigating social service providers in Southern California cities, found no spatial autocorrelation indicating clustering of these organizations. Nevertheless, Bielefeld and Murdoch (2004), analyzing American metropolitan areas, found that similar nonprofits tend to cluster. Adopting an economic approach, Fruttero and Gauri (2005) claim that nonprofits decide to establish in a community according to their expected rewards for success or punishments for failure: if a nonprofit expects its own results to be positively evaluated by funders, it will establish in areas with low nonprofit density, so that these funders can identify and reward these results. In spite of that, if the nonprofit expects its results to be negatively evaluated, or expects that donors cannot properly identify the results, it will prefer to cluster in order to reduce punishments and damages to their reputation (Fruttero and Gauri 2005).

Another issue raised by the influence of nonprofit density on the location of new nonprofits is the endogeneity between nonprofit location and social needs. If nonprofits aim at societal improvement, they might be created in places with worse socioeconomic indicators, as explained in the subsection on community needs. However, if nonprofits are effective in their job, it is expected that the socioeconomic indicators in that area will improve. Most of the studies on nonprofit location ignore this debate. An exception is Peck (2008), who discussed both the determinants of nonprofit location and the impact of previously existing nonprofits. Here, I follow a different approach. I focus only on nonprofit creation, but including the base density of nonprofits established in each municipality in 2000, when the socioeconomic indicators were measured. Considering this base density of nonprofits and the indicators of need and resources in 2000, I investigate the location of nonprofits created between 2001 and 2010.

Despite the higher competition for resources created by higher nonprofit density, I expect that, given the organizational benefits of clustering, municipalities with higher concentration of nonprofits will be more likely to attract new nonprofits. Freeman and Audia (2006) argue “[o]rganizations build relationships on the basis of what they do to and for each other.” This suggests that organizations with different purposes might respond differently to previously existing nonprofits. Applied to this study, I expect that the relationship between a previous rate of nonprofits and the location of new nonprofits will vary among different fields of activity. The next section presents the data and methods adopted in this research.

Data and Methods

I filed a request of information⁴ to the federal government in Brazil, in order to gain access to the dataset with all nonprofits registered in each Brazilian municipality, according to their field of activity and decade of foundation. This dataset refers to nonprofit organizations that were active in 2010. This research also uses data from online sources, such as the *Atlas do Desenvolvimento Humano*,⁵ from the United Nations Development Program, which compiles information from the Brazilian censuses, and the *Sistema de Informações de Mortalidade*,⁶ from the Brazilian Ministry of Health. Data from the independent variables are from 2000, and data from the dependent variable—number of nonprofits created in each municipality—are from 2001 to 2010, in order to address the endogeneity issue, as previously stated. All data are at the municipal level, covering Brazil’s 5562 municipalities. A limitation common to studies of nonprofit location (McDougle 2015) and to which this article is not immune, is that registries of location are not necessarily indicating the real area of these nonprofits’ activities. This problem is minimized by the fact

⁴ Protocol Number 03950.001988/2014-97. I requested data on 24/09/2014 in municipal level and by decade of foundation of nonprofits from each field of activity. My request was successfully answered on 21/10/2014. The consolidated data are available online at the report *As Fundações Privadas e Associações sem Fins Lucrativos no Brasil 2010* (IBGE 2010).

⁵ Available at <http://www.atlasbrasil.org.br/2013/>. Accessed on 26/06/2015.

⁶ Available at: <http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sim/cnv/ext10br.def>. Accessed on 26/06/2015.

that in Brazil the size of nonprofits, although very diverse across different areas of activity, is relatively small, with an average of 7.3 employees in each organization (IBGE 2010). The average number of employees for the nonprofit fields of activity analyzed in greater details here is even smaller, varying from 1.8 employees in religious nonprofits to 4.3 employees in cultural nonprofits. I assume that the small number of employees constitutes an organizational limitation for activities in municipalities different from than the ones in which the nonprofit was registered.

This paper follows previous research (e.g., Peck 2008; Yan et al. 2014) in organizing the predictors of nonprofit location according to measures of community needs and available resources. I added as a measure the density of nonprofits previously established in each municipality to test the third hypothesis for nonprofit location.

In the previous section, I explained the rationale for the selection of variables adopted here. In summary, the measures of need include (a) the percentage of poor families and (b) the percentage of unemployment (Peck 2008). Additionally

Table 1 Descriptive statistics

Variable	Description	Min	Max	Mean	S.D.	Source
NPOs overall	NPOs created between 2001 and 2010, per 10,000 residents	0	123.2	7.95	8.04	Info request
Religious NPOs	Religious NPOs created between 2001 and 2010 per 10,000 residents	0	16.86	1.17	1.41	Info request
Advocacy NPOs	Advocacy NPOs created between 2001 and 2010 per 10,000 residents	0	88.67	1.65	3.40	Info request
Cultural NPOs	Cultural NPOs created between 2001 and 2010 per 10,000 residents	0	34.88	0.95	2.00	Info request
Professional associations	Professional associations created between 2001 and 2010 per 10,000 residents	0	42.02	2.10	3.31	Info request
Poverty	Percent of poor families in 2000	0.70	90.76	41.06	22.76	UNDP
Unemployment	Unemployment rate in 2000	0	59.17	11.02	6.22	UNDP
Inequality	GINI index for income inequality in 2000	0.3	0.87	0.54	0.06	UNDP
Homicides	Homicide rate (per 100,000 people) in 2000	0	204.70	9.19	16.06	Health Ministry
Capital	Dummy variable for state capitals	0	1	0	0.06	IBGE
Government investment	Average of the investment per capita made by local governments between 1996 and 2000	0	1516	51.58	55.69	IpeaData
Nonprofit density	Base rate of NPOs in each municipality in 2000 per 10,000 residents	0	190.20	12.31	13.21	Info request
Rural population	Percent of rural population in 2000	0	1	0.41	0.23	UNDP
Population density	Population density (population/city area in km ²) in 2000	0.12	12,740	95.41	517.06	IBGE

considering the severity of income inequality and violence in Brazil (Caldeira and Holston 1999; Carvalho et al. 2005; Koch et al. 2009; Lustig et al. 2013), I added as measures of need (c) the Gini index for income inequality and (d) homicide rates. The measures of available resources are (a) the average from local governments' budget per capita classified as investment between 1996 and 2000, (b) a dummy for state capitals, which in Brazil are the biggest cities in every state, concentrating not only access to the subnational government but also infrastructure and large, for-profit companies, (c) the percentage of population that qualifies as rural, and (d) population density. The measure of nonprofit density is the rate of nonprofits per 10,000 residents. Table 1 presents description and summary statistics for all of these variables.

Considering the main fields of activity discussed in “[What Determines Nonprofit Location?](#)” section, I analyze five models of nonprofit location, changing only the dependent variable. The dependent variable in each model is (1) the overall density of nonprofit organizations; (2) the density of religious nonprofits; (3) the density of advocacy nonprofits; (4) the density of professional associations; and (5) the density of cultural organizations. The densities are calculated based on the number of organizations created between 2001 and 2010 per 10,000 residents.

Previous studies on nonprofit location did not discuss variation on the local effects of an independent variable. For instance, would poverty in the less developed North and in the wealthier South of Brazil have the same effect over nonprofit location? Without the identification of geographically varying effects, the prevailing assumption is that one single coefficient from nonspatial models represents the effect of each predictor on the variables of interest. This assumption is highly problematic in studies using municipalities as unit of analysis in a country as heterogeneous as Brazil. In order to verify the existence of spatial effects on each nonprofit field of activity, the first models use OLS regressions and include tests for spatial autocorrelation. Having indication of spatial effects, I then use GWR to explore how the coefficients change across different units (Brunsdon et al. 1996, 2002). In matrix notation, GWR can be represented as

$$y_i = \beta_i X_i + \varepsilon_i.$$

Each location i , is identified by the longitude and latitude coordinates of its centroid. The outcome of interest is y_i , the set of predictors is X_i , ε_i is a random error term, and β_i is a vector of local coefficients associated with the predictors in X . For each location i , the coefficient β_i is determined by the values of y_i and X_i not only in the focal unit but also in the neighbors included in an optimal bandwidth determined for each dataset.

The results from GWR provide local coefficients that are better interpreted through maps. I present these maps in the next section, but only for the variables that are nonstationary (i.e., that vary geographically) in all four main fields of nonprofit activity, as determined by Monte Carlo simulations. The Monte Carlo simulations test the hypothesis that local coefficients are equal to the global, OLS coefficient for that variable (Brunsdon et al. 1998). Significant results indicate nonstationary coefficients. The summary results of GWR, including minimum,

Table 2 OLS regressions for NPOs created between 2001 and 2010

	NPOs overall	Religious NPOs	Advocacy NPOs	Professional associations	Cultural NPOs
Constant	3.583** (4.658)	1.809** (1.180)	0.389 (1.057)	-0.043 (-0.119)	0.642** (3.150)
Needs					
Inequality	-2.636* (-1.893)	0.063 (0.216)	-1.713** (-2.568)	-0.717 (-1.085)	-0.507 (-1.373)
Poverty	-0.003 (-0.682)	-0.012** (-10.674)	0.009** (3.772)	0.025** (9.708)	-0.017** (-12.079)
Unemployment	-0.036** (-2.170)	0.001 (0.418)	-0.008 (-1.016)	-0.024** (-3.001)	-0.003 (-0.680)
Homicides	0.007 (1.391)	0.007** (6.457)	-0.001 (-0.530)	0.002 (0.889)	-0.002 (-1.436)
Resources					
Population density	0.000 (0.416)	0.000** (1.986)	0.000 (0.418)	0.000 (-0.228)	0.000 (0.201)
Rural population	5.260** (9.967)	-0.669** (-6.030)	1.732** (6.852)	1.881** (7.507)	1.406** (10.052)
Government investment	-0.001 (-1.085)	0.000 (-0.232)	-0.001** (-2.369)	0.000 (0.530)	-0.000 (-0.821)
Capital	0.780 (0.597)	-0.338 (-1.232)	0.108 (0.173)	0.176 (0.284)	0.133 (0.386)
NPO density					
Nonprofit density	0.340** (47.677)	0.016 (1.066)	0.103** (30.094)	0.077** (22.781)	0.064** (34.209)
<i>N</i>	5562	5562	5562	5562	5562
Akaike information criterion (AIC)	36,484	19,143	28,297	28,202	21,714
<i>R</i> -squared	0.36	0.09	0.18	0.15	0.28
Moran's <i>I</i>	13.489**	17.920**	9.552**	16.592**	10.844**

** $p \leq 0.05$; * $p \leq 0.10$ (two-tailed tests); *t* statistics in parentheses

maximum, and mean coefficients for each variable, are reported in Tables 4, 5, 6, and 7 in [Appendix](#).

I used the software R (R Core Team 2015), Geoda (Anselin et al. 2006), and GWR4 (Nakaya et al. 2009) for the models and tests. The next section presents the results, starting with OLS regressions and tests for coefficient stationarity.

Results

Table 2 presents the results of OLS regressions considering nonprofits in general and from the four main fields of activity in Brazil. These results indicate that, for nonprofits in general, inequality and unemployment are associated with fewer new nonprofits located in these cities. On the other hand, a higher percentage of rural population and a higher rate of nonprofits already established in these areas are associated with more nonprofits. These results seem to indicate that new nonprofits tend to be located in more rural cities, where there are already nonprofits established, and the unemployment and inequality are lower than in other parts of the country.

Nonprofits from each of the main four fields of activities, however, present distinct relationships with these predictors. The location of religious nonprofits is not associated with inequality, unemployment, or pre-existing nonprofits. Contrary to nonprofits in general, the influence of rural population on the location of newly established religious nonprofits is negative. The fact that population density is positively associated with the location of religious nonprofits reinforces the evidence that more urbanized areas attract this group of nonprofits. In addition, higher poverty rates are associated with fewer religious nonprofits. Homicide rate is the only measure of community needs positively associated with the location of religious nonprofits.

Some results for advocacy organizations are similar to nonprofits in general, such as the negative association with inequality and the positive relationships with the percentage of rural population and with the previous nonprofit density. Even so, differently from nonprofits in general, the percentage of poor population leads to a higher rate of new advocacy nonprofits being located in these areas. Furthermore, unemployment has no significant effect and the investment of local governments is associated with fewer advocacy groups.

Professional associations are somewhat similar to advocacy groups in that poverty, rural population, and the pre-existing density of nonprofits are positively associated with the location of these kinds of nonprofits. Professional associations differ by being negatively associated with unemployment and not significantly related to inequality or government investment.

Finally, cultural associations differ from nonprofits in general by not being associated with inequality and unemployment, and by having a negative association with poverty, contrary to advocacy groups and professional associations. Cultural nonprofits are similar to nonprofits in general, but contrary to religious nonprofits for being positively associated with rural municipalities. The previous nonprofit density is also positively associated with the location of new cultural nonprofits.

I adopted the income per capita from the 10 % of the population with higher income as an alternative measure of resources available, which might indicate potential donors. The finding from models using this variable did not change the conclusions presented here, but I decided to exclude the models using this variable because the income per capita from the 10 % of the population with higher income is highly correlated with inequality, causing multicollinearity. This suggests that the Gini index of income inequality, which is used here primarily as a measure of social need, further indicates that a certain segment of the population concentrates resources. Additionally, I tested models aggregating nonprofits from different fields as service providers and expressive nonprofits, following the distinction made by Salamon et al. (2013). I decided not to include these results here, given that nonprofit fields such as health and education, which compose the service provision category, are not among the biggest fields of nonprofit activity in Brazil. Moreover, these aggregations present similar results to the first model, for nonprofits in general, and my goal here is to unveil distinctions within the sector.

Several elements of these results could be further explored. Why, for instance, does poverty seem to attract advocacy groups and professional associations, but repels religious and cultural nonprofits? Or why are religious nonprofits the only group among the main fields of activity not attracted by the rate of nonprofits previously established in that area? Before entering these debates, it is worth verifying if these results are stationary or not. In other words, can we assume that in each model the coefficients are the same across municipalities in the entire country?

A first step toward this analysis of stationarity is to detect whether there is any spatial dependence in the initial results. Spatial dependence suggests that the OLS results are inadequate and that a model that accounts for spatial patterns would be more appropriate. In Table 2, it is possible to check the Moran's *I*s of each model. This test indicates if there is spatial autocorrelation through the analysis of the residuals of each model. The results confirm, through significant Moran's *I*s, the existence of spatial autocorrelation in all models.⁷ This diagnostic suggests that OLS is not the best model to analyze nonprofit location in Brazil. Considering the LISA maps from Illustration 2, there are reasons to expect different processes affecting nonprofit location in distinct parts of the country, i.e., distinct spatial regimes (Anselin and Rey 2014). This supports the adoption of GWR models in order to examine the continuous spatial heterogeneity in the relationships of interest.

Table 3 presents the results of Monte Carlo simulations showing which coefficients from the previous OLS models are nonstationary for each of the main nonprofit fields of activities.

The results from the Monte Carlo simulations show that several coefficients in each of these models are nonstationary, meaning that they vary across different geographical units in Brazil. In order to focus the discussion on particularly relevant variables, I analyze here the effects of poverty rates and of the pre-existing density of nonprofits, which are the only variables that have nonstationary effects across all

⁷ Tests of spatial autocorrelation are sensitive to the spatial weights adopted in each case. All models presented here use a queen one contiguity matrix. Robustness checks with rook one contiguity confirm spatial autocorrelation in all models but with different values.

Table 3 Results of Monte Carlo simulations for coefficient stationarity

	Religious NPOs	Advocacy NPOs	Professional associations	Cultural NPOs
Constant	0.003**	0.001**	0.000**	0.009**
Needs				
Inequality	0.004**	0.3766	0.069*	0.346
Poverty	0.000**	0.000**	0.000**	0.000**
Unemployment	0.000**	0.033**	0.247	0.000**
Homicides	0.000**	0.024**	0.099*	0.049**
Resources				
Population density	0.303	0.000**	0.000**	0.009**
Rural population	0.131	0.000**	0.000**	0.000**
Government investment	0.630	0.001**	0.019**	0.465
Capital	0.013**	0.012**	0.000**	0.069*
NPO density				
Nonprofit density	0.008**	0.015**	0.000**	0.000**
Simulations	1000	1000	1000	1000
Adaptive bandwidth (in number of obs)	99	122	112	178

** $p \leq 0.05$; * $p \leq 0.10$ (two-tailed tests)

models, at the 0.05 significance level. Additional results from GWR analyses are presented in [Appendix](#). By comparing the results from [Table 2](#) with [Appendix](#), it can be seen that the AICs of the GWR models are always lower than that of the OLS models, indicating that GWR models provide a better fit to the data in this study (Anselin and Rey 2014). In other words, the spatial analysis using GWR explains more about the phenomena of nonprofit location in Brazil than OLS.

[Illustration 3](#) shows the effect of poverty on the location of new nonprofits from the four main fields of nonprofit activity in Brazil. Recalling results from the OLS model, there was a negative effect of poverty on the location of religious and cultural nonprofits and a positive effect on the location of advocacy and professional associations. The improved results from the GWR, mapped in [Illustration 3](#), indicate that, in fact, in a considerable part of Brazil, there is no significant association between poverty rates and the creation of nonprofits from all of these fields of activity. There is, however, as predicted by the OLS, a negative effect of poverty rate on the location of new religious organizations in a large area that includes all the North region and significant parts of the other regions. This effect is not significant in the coastal and most populated area of the Northeast. For cultural nonprofits, the areas of negative association with poverty include the entire South region and three other large spots, including part of the same populated area in the Northeast coast that has not a significant density of religious organizations.

The maps also show that the association between poverty rates and advocacy nonprofits is not always positive, and it is in fact negative or nonsignificant in certain areas of the country. In almost the whole South region and in part of the

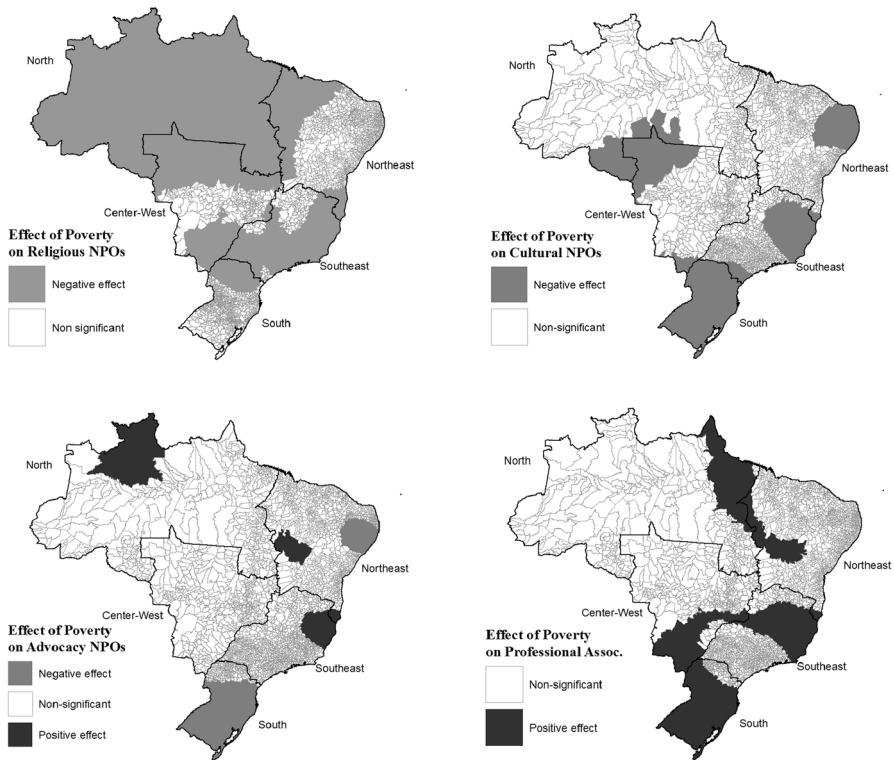


Illustration 3 Effect of poverty rate on main fields of nonprofit activity in different regions. *Source* Created by the author, based on data officially requested to the federal government

Northeast, poverty rates are actually leading to less advocacy groups, according to the GWR results. The same does not happen with professional associations, which are positively associated with poverty rates in large parts of the country, including developed and underdeveloped areas. Even in this case, the state of São Paulo, in the Southeast, and the main metropolises in the Northeast present no significant association between poverty and professional associations.

Illustration 4 shows the effect of the previous rates of nonprofits on the location of new nonprofits from each field of activity. As with poverty rates, the results from the GWR regarding the effect of the previous rate of nonprofits present important distinction in relation to the OLS results. The effect of the previous rate of nonprofits on religious organizations, for example, which the OLS indicates as nonsignificant, is shown by the GWR as positive and significant in a smaller part of Brazil that includes, nonetheless, the most densely populated region of the country, the Southeast. For all the other main fields of nonprofit activity in Brazil—cultural, advocacy, and professional associations—the effect of the previous rate of nonprofits is positive in most parts of the country, but there are still some areas where this effect is nonsignificant.

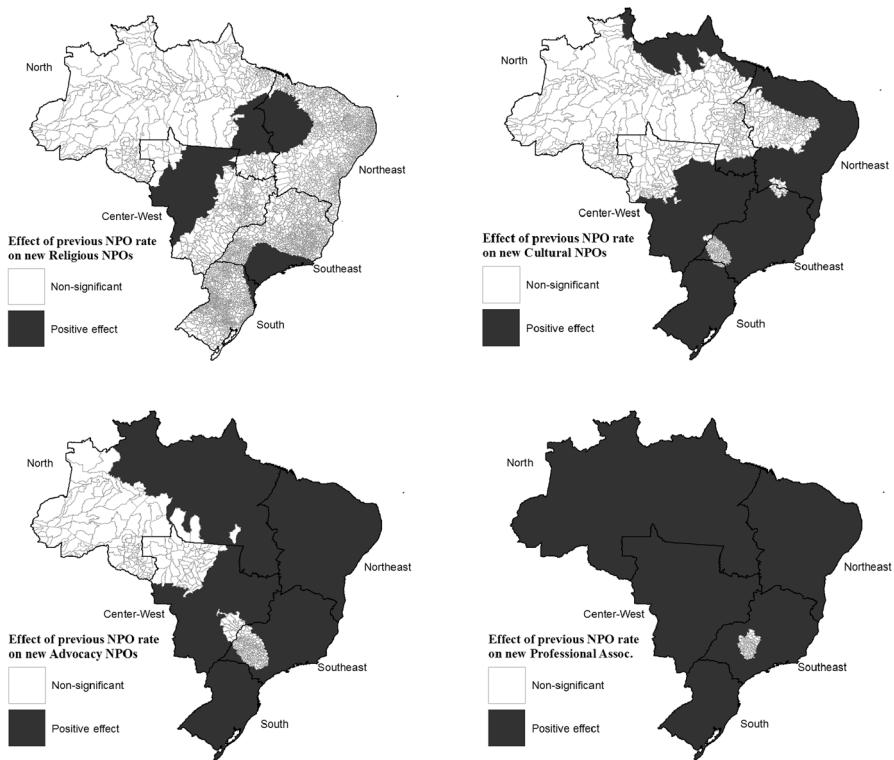


Illustration 4 Effect of the previous density of nonprofits on the main fields of nonprofit activity in different regions. *Source* Created by the author, based on data officially requested to the federal government

In summary, GWR models present better results than OLS regressions, because they enable the identification of theoretically interesting variation in the direction, magnitude, and significance of key explanatory variables. Notably, the OLS findings hold for all variables deemed stationary by the Monte Carlo simulations. In other words, for those variables, the effect can be considered stable or uniform across all municipalities. The next section discusses the substantive findings from the Brazilian case, especially regarding the effects of community needs, available resources, and nonprofit density on the location of new nonprofits.

Discussion

The results presented here justify why it is not surprising that previous studies had conflicting results when analyzing determinants of nonprofit location. The influence of community needs, available resources and nonprofit density on the location of new nonprofits varies across different fields of activity and regions of the country. In this sense, it is risky to draw general conclusions. The Brazilian case, however,

presents elements that, taken together, can inform further research on nonprofit location in different countries.

All measures of community need adopted in this research affect the location of nonprofits in at least one field of activity. In some cases, however, the effect is the opposite of what was expected. In terms of resources, the only measure that affects all four main fields of nonprofit activity in Brazil is the percentage of rural population, used as a proxy for social capital. Finally, the previous nonprofit density seems to attract all kinds of nonprofits, at least in some parts of the country. A better interpretation of these results should consider the meaning of these variables taken together for each field of nonprofit activity.

Religious organizations are the biggest group of nonprofits in Brazil and the influences on their location seem notably distinct from what influences the location of other relevant groups of Brazilian nonprofits. New religious organizations favor urban and more densely populated areas, with lower levels of poverty but suffering from higher homicide rates. Besides that, in a large part of the country, religious organizations avoid municipalities with a high nonprofit density. This seems not only to indicate a preference for new urban centers that concentrate financial resources and opportunities but also constitute dangerous and violent areas, where religiosity plays an important role. Studies on religiosity in Brazil claim that Brazilians are converting to Pentecostal and Evangelical churches in order to cope and adjust to modernization processes (Casanova 2011; Johansen 2014). It is reasonable to expect that modernization processes happen more intensely in urban and densely populated areas. Thus, religious organizations seem to be the first layer of nonprofits to reach these areas of urban expansion. The growth of religious nonprofits in areas with lower nonprofit density raises questions about the dynamics between different nonprofit fields. For example, would politically active nonprofits continue to grow, eventually limiting the expansion of religious nonprofits, if the funding from international foundation had not been reduced for Brazilian advocacy organizations?

Cultural, advocacy, and professional associations present more similarities among themselves, especially because the location of new organizations from these fields of activity seem to be influenced by a higher nonprofit density and rural population, which, taken together, reinforce the argument that social capital influences the location of these kinds of nonprofits (Grønbjerg and Paarlberg 2001; Putnam et al. 1994). The main differences among these fields of activity seem to be related to community needs. The only measure that affects cultural organizations is poverty, which repels these nonprofits. The tendency that cultural nonprofits would concentrate in wealthier areas was previously noted by research on nonprofit location (e.g., Wolpert 1993). New advocacy and professional associations, on the other hand, are attracted to areas with higher poverty levels, although the GWR model reveals that in certain areas of the country there is the opposite effect for advocacy nonprofits. The fact that inequality repels advocacy groups and that unemployment repels professional associations in some municipalities is counter-intuitive. Considering that these organizations are attracted by high nonprofit density as well, one possible explanation for these surprising findings is that nonprofits previously working in these areas are successfully reducing inequality

and unemployment, which leads to a negative association between these indicators and the location of new nonprofits. Further studies are required to confirm this endogeneity issue. It should be noted that advocacy groups grew less intensely in the 2000s than in the 1990s, and the factors that attracted nonprofit location in the 1990s are not covered by this research. Finally, nonprofits that defend rights (Mendonça et al. 2014), such as advocacy organizations and to a certain degree professional associations, develop activities that may have thematic or regional focus, instead of local motivations.

The results of this study suggest that the nonprofit sector in Brazil has still room for growth. In no area of the country, the previous nonprofit density seems to be repelling the creation of new nonprofits. This reality might be different in countries with a more established and saturated nonprofit sector.

Conclusion

The three main hypotheses tested in this paper—that needs, resources, or nonprofit density attract new nonprofit organizations—present distinct results when considered for nonprofits in the country overall or when disaggregated by fields of activity and using spatial methods to reveal geographical variation. The analysis of nonprofits overall and using OLS, for instance, shows no evidence that municipalities with worse socioeconomic indicators are attracting more nonprofits in Brazil. However, the analysis of nonprofits from different fields partially supports this hypothesis. Religious nonprofits are attracted by municipalities with higher homicide rates and advocacy and professional associations are created in areas with higher poverty rates. Also, for nonprofits in general, the hypothesis that resources attract nonprofits is only partially supported by the positive association with the percentage of rural population. Religious nonprofits, however, present a negative association with this proxy for social capital but are positively associated with population density.

This paper shows that, in order to make sense of these results, the effects of the previous nonprofit density should also be considered. The OLS models show that nonprofits in general, advocacy groups, cultural, and professional associations are attracted by higher rates of previously existing nonprofits, and the GWR indicates the same process happening for religious organizations in part of the country. Regarding religious organizations, this limited influence of previous nonprofit density, the negative effect of rural population, and the positive association with population density and with homicide rates suggest that these nonprofits are expanding in new urban centers, where there are opportunities and risks involved, without a nonprofit network already established to support the community. Advocacy, cultural and professional associations follow a different path. These organizations are more likely to be created in areas with more rural population and previous nonprofit density, suggesting that, for these nonprofits, social capital may be more important than availability of financial resources.

This analysis brings substantive and methodologic contributions to the study of nonprofit location. Substantively, the analysis of nonprofits from different fields

reveals more than the analysis of nonprofits overall. As an illustration, in the OLS models presented here, poverty rate was not significant for nonprofits in general, but it was significant and with opposite signs for main areas of nonprofit activity in Brazil. The findings regarding the effect of previously existing nonprofits are another substantive contribution of this paper. Fruttero and Gauri (2005) are among the few authors that previously considered the importance of existing nonprofits, but their study is restricted to a limited sample of the four major nonprofit organizations in Bangladesh. The results presented here suggest the need for further analysis differentiating the actions of each nonprofit field of activity. It is necessary as well to understand more about what motivates the establishment of the first nonprofit in a locality. In terms of methodological contributions, the GWR models and the use of maps to present the results of these models have been adopted in other areas, but this study innovates by bringing these techniques to nonprofit studies. Analyses of nonprofit location, nonprofits' social impact, service provision, and other studies involving geographical elements of nonprofits might benefit from these techniques.

This study has certain limitations. First, the study does not reveal if, within each municipality, Brazilian nonprofits are located in the poorest neighborhoods. That is, an even more local level of analysis may be in order. The macro-picture presented here might be useful as a guideline for government investments, but effective strategies to address social needs should analyze these local circumstances. A second limitation is the absence of consolidated data about private donations or government funding for nonprofits in Brazil, which would have been improved measures of resource availability. The Brazilian case may require a more in-depth analysis of the effects of federal government's policies for nonprofit location. As Alves and Koga (2006) pointed out, in Brazil, not only the availability of funding but also the nonprofits' regulation and other public policies may influence decision regarding the creation of new nonprofits. Such regional factors can be added in further developments of this study.

Future studies about determinants of nonprofit location should analyze the effects of such organizations in the policy environment. Time series, mixed-methods analyses, and comparative case studies could help identify and discuss the causal mechanisms that influence the decision of establishing a nonprofit in a certain area jointly with the effects of such decision.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Appendix

See Tables 4, 5, 6, and 7.

Table 4 GWR for religious nonprofits

	Min	1st quartile	Mean	3rd quartile	Max
Constant	−0.671	0.983	1.582	2.167	3.714
Needs					
Inequality	−2.302	−0.892	0.090	0.956	2.490
Poverty	−0.039	−0.018	−0.011	−0.004	0.007
Unemployment	−0.046	−0.011	0.003	0.018	0.051
Homicides	−0.006	−0.000	0.007	0.010	0.034
Resources					
Population density	−0.001	−0.000	0.000	0.000	0.001
Rural population	−1.405	−0.716	−0.475	−0.223	0.774
Government investment	−0.002	−0.000	−0.000	0.000	0.002
Capital	−5.106	−0.661	−0.384	0.404	1.269
NPO density					
Nonprofit density	−0.004	0.002	0.009	0.013	0.041
AIC					18,933

Table 5 GWR for advocacy nonprofits

	Min	1st quartile	Mean	3rd quartile	Max
Constant	−4.603	−0.463	0.181	1.014	3.716
Needs					
Inequality	−4.198	−0.741	−0.061	0.549	5.020
Poverty	−0.059	−0.027	−0.006	0.011	0.038
Unemployment	−0.047	−0.015	0.004	0.004	0.118
Homicides	−0.025	−0.004	−0.001	0.004	0.016
Resources					
Population density	−0.005	−0.000	−0.000	0.000	0.002
Rural population	−0.933	0.330	1.759	1.742	7.962
Government investment	−0.020	−0.001	−0.001	0.001	0.004
Capital	−2.360	−0.393	0.092	0.122	32.253
NPO density					
Nonprofit density	0.020	0.057	0.095	0.125	0.199
AIC					28,098

Table 6 GWR for professional associations

	Min	1st quartile	Mean	3rd quartile	Max
Constant	-5.284	-1.426	0.285	1.067	5.574
Needs					
Inequality	-6.468	-3.652	-0.980	1.477	5.666
Poverty	-0.031	0.003	0.019	0.033	0.074
Unemployment	-0.072	-0.035	-0.017	0.001	0.054
Homicides	-0.017	-0.005	-0.000	0.003	0.038
Resources					
Population density	-0.007	-0.000	-0.000	0.000	0.001
Rural population	-0.526	1.153	2.277	3.349	4.777
Government investment	-0.008	-0.000	0.001	0.003	0.013
Capital	-4.305	-0.089	0.607	0.557	40.529
NPO density					
Nonprofit density	0.031	0.062	0.106	0.150	0.257
AIC					27,968

Table 7 GWR for cultural nonprofits

	Min	1st quartile	Mean	3rd quartile	Max
Constant	-1.256	0.031	0.575	1.270	2.138
Needs					
Inequality	-3.133	-0.415	0.257	1.082	3.261
Poverty	-0.060	-0.021	-0.015	-0.005	0.014
Unemployment	-0.095	-0.008	-0.007	0.005	0.044
Homicides	-0.016	-0.004	-0.002	-0.000	0.010
Resources					
Population density	-0.001	-0.000	-0.000	0.000	0.003
Rural population	-0.697	-0.017	0.751	1.309	4.087
Government investment	-0.006	-0.000	-0.000	0.000	0.003
Capital	-10.821	-0.133	-0.033	0.273	2.070
NPO density					
Nonprofit density	0.010	0.020	0.041	0.061	0.118
AIC					21,315

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