**Pork-Barrel funding and nonprofit sector growth: Evidence from Brazil’s health sector**

**Abstract**

Stable government funding for public-nonprofit partnerships (PNPs) strengthens the nonprofit sector. However, unstable funding in PNPs, such as pork-barrel funding, challenges developing countries. Pork-barrel funding refers to legislative budget allocation, and it enables local and constituency-driven projects. This study examines whether pork-barrel funding has a positive influence on the Brazilian healthcare nonprofit sector growth and whether this effect is conditioned by municipal wealth. Using six years of panel data from 5,570 municipalities and addressing endogeneity bias, we measure nonprofit growth through entries, employees, and facilities. Results show a modest but significant positive effect: pork-barrel funding increases the number of nonprofits primarily in less wealthy municipalities, reflecting short-term electoral demands, while in wealthier municipalities, its effect emerges through long-term employment increase. These findings qualify interdependence theory by demonstrating that government funding effects are contingent on political and contextual factors, and they highlight the limits of PNPs in advancing universal healthcare.

Keywords: public-nonprofit partnerships; nonprofit sector growth; pork-barrel funding; healthcare; panel data

**Introduction**

On the outskirts of a small Brazilian municipality, a local nonprofit organization offers equine therapy, a horse-assisted treatment, for individuals with autism spectrum disorder (ASD). Though not yet included in the Ministry of Health’s stable funding programs, the nonprofit sustains its operations with pork-barrel funding, or public investments allocated with a legislative budget amendment. As the organization's manager walked through the modest facilities, he gestured toward a wall bearing the name of the legislator who had provided support. Despite this visible acknowledgment, he expressed concern about the nonprofit’s future, citing the precarious nature of its current funding model.

This anecdote illustrates the dynamics underlying the growth of the nonprofit sector in a developing country. While academic research has explored nonprofit sector expansion from various theoretical perspectives, a gap remains in studies addressing the implications of political funding instability within interdependence theory. This theory predicts that nonprofit sector growth relates to a complementary role between government and nonprofits (Salamon and Toepler 2015; Salamon and Anheier 1998; Salamon 1987). Public-nonprofit partnerships (PNPs) enable stable regulatory environments and predictable funding streams that support nonprofit sector growth (Lecy and Van Slyke 2013; Salamon and Elliott 2002; Milward and Provan 2000; Luksetich 2008; Lipsky and Smith 1989). In contrast, developing countries often contend with unstable funding conditions, driven by shifting priorities among foreign donors (AbouAssi 2013; AbouAssi, Wang and Huang 2021) and drastic changes in political leadership and policy preferences (Peci and Oquendo 2016).

This study addresses an important and underexplored question about how unstable government funding affects nonprofit growth and service delivery. We focus on the case of Brazil, where politically driven pork-barrel funding has played an increasingly prominent role in financing public health policy. Pork-barrel funding refers to budgetary allocations made by legislators aiming to secure electoral or political advantages by financing local-level public goods and services (Bertholini *et al.* 2018; Golden and Min 2013), hence it is an inherently unstable source of funding. Often associated with patronage, this form of funding is globally expanding, cutting across different government regime types (Sanches *et al.* 2024; Transparency International 2021; Baskin *et al.* 2014).

The Brazilian government actively engages nonprofits through public-nonprofit partnerships (PNPs) to implement public policies (Peci, Figale, and Sobral 2011). This is particularly true in the health sector, where nonprofits are responsible for delivering approximately 45% of health procedures (Canabrava 2015). Brazil’s health nonprofit sector is uniquely characterized by its reliance on government funding, unlike many other developing countries, where nonprofits often depend on international aid (Brass 2012; Fruttero and Gauri 2005) or maintain a wary relationship with the state (Lu 2018; Brass 2012).

In the context of health public-nonprofit partnerships, we investigate whether unstable pork-barrel funding emerges as a mechanism of nonprofit sector growth. We argue that legislators allocate resources to nonprofits to fulfill political and electoral objectives, while nonprofits rely on these funds to maintain operations and expand services. Yet, unlike stable programmatic funding, pork-barrel allocations are contingent on shifting political alliances, electoral cycles, and individual legislators’ priorities, creating instability that can shape sectoral growth patterns.

Additionally, we account for the fact that nonprofits may respond to the uncertainty of pork-barrel funding by adopting organizational survival strategies (Fruttero and Gauri 2005). We build on the literature on revenue diversification, which emphasizes that nonprofits often manage diverse funding sources to ensure operational sustainability (Carroll and Stater 2009; Grønbjerg 1993; Jegers 1997). Consequently, nonprofits may prioritize expansion into wealthier municipalities where complementary revenue sources, such as private donations and access to private healthcare markets, are more readily available. If true, such concentration limits the public-nonprofit partnerships' (PNPs) ability to support health access in less wealthy municipalities, which is essential for advancing universal health coverage. Building on this theoretical framing, we pose two research questions: Does pork-barrel funding influence the growth of the health nonprofit sector within Brazil’s SUS (Brazil’s Unified Health System)? Does a municipality´s wealth moderate the effect of pork-barrel funding on health nonprofit sector growth?

Our study relies on municipal-level panel data analysis covering the period from 2015 to 2021, accounting for the institutional design of SUS and addressing potential endogeneity bias using the Arellano–Bover/Blundell–Bond system General Method of Moments (GMM) estimators (Roodman 2009). We adopted distinct measures of nonprofit sector growth as a robustness test, namely the number of health nonprofits, employees, and facilities.

Although unstable, pork-barrel funding has a modest yet positive association with nonprofit sector growth. Pork-barrel funding increases the number of nonprofits predominantly in less wealthy municipalities, while in wealthier municipalities, its effect materializes through health nonprofit employment growth rather than new entries.

**Nonprofit sector growth under unstable government funding**

The nonprofit sector's growth[[1]](#footnote-1) has been interpreted through multiple theoretical lenses. As Lecy and Van Slyke (2013) note, nonprofit sector density has been explained through at least five major perspectives: government failure theory, social capital theories of associational life, theories linking religious organizations to civil society size, philanthropy theory, and interdependence theory. We briefly examine each perspective and its relevance for our research questions.

Weisbrod (1988) is the fundamental author of the government failure theory. This theory contends that the government can only provide homogeneous services that meet the median voter's demand. Therefore, nonprofits are established to meet the diverse needs of heterogeneous communities (Bae and Sohn 2018; Corbin 1999; Ben-Ner and Van Hoomissen 1991), and more government means fewer nonprofits.

Social capital theories of associational life emphasize the role of community networks, trust, and civic engagement in driving nonprofit formation. The social capital perspective suggests that social ties are related to the nonprofit sector growth (Corbin 1999; Saxton and Benson 2005), which is driven by interpersonal trust and organizational membership (Rothstein 2001; Putnam, Leonardi, and Nanetti 1993). Similarly, theories linking religious organizations and civil society size highlight the contributions of religious institutions, which foster nonprofit growth through values, social networks, and resource mobilization (Corbin 1999). Yet, social capital and religious institution perspectives underplay the central role of government–nonprofit funding relationships. Likewise, philanthropy theory focuses on the availability of private donations and philanthropic resources as a primary driver of nonprofit creation and sustainability but lacks empirical support (Lecy and van Slyke 2013).

More recent studies focus on organizational and historical factors to explain nonprofit sector dynamics. The concept of “density creating density” refers to how the nonprofit sector's previous density influences the location of new organizations by generating “agglomeration externalities,” such as information diffusion and specialized employee concentration (Costa 2017; Saxton and Benson 2005). On a distinct track, Casey (2016) employs the concepts of path dependence and social origins, emphasizing how the history of each polity influences the development of the nonprofit sector. Lastly, a burgeoning literature argues that nonprofits' leadership fosters collaborations and supports organizational expansion (see Ihm and Shumate 2019; King 2004). Although valuable, these theories do not account for government funding, which has been shown to have a positive influence on nonprofit growth (Lu and Xu 2018), with recent findings corroborating the validity of interdependence theory (Subedi and Liu 2024).

Interdependence theory posits that nonprofits and governments develop mutually dependent relationships in service delivery, which in turn shapes the size, composition, and distribution of the sector. The nonprofit sector's growth stems from a mutual reliance between public agencies, which require service delivery capacity, and nonprofits, which depend on public funding to sustain their operations. The nonprofit sector serves as a tool for public governance (Salamon and Elliot 2002; Jessen 2017), and government agencies rely on it to deliver public services jointly (Milward and Provan 2000). The nonprofit sector is typically perceived as sharing similar objectives with public agents, such as promoting greater equity and trust in service delivery (Salamon and Elliot 2002; Salamon, Hems, and Chinnock 2000), and it also enables public policy implementation by complementing managerial skills such as specialization and less bureaucracy (Salamon, Hems, and Chinnock 2000). Therefore, the public sector collaborates with the nonprofit sector as a natural consequence of mutual interdependence, expressed with skills and resource sharing, to effectively organize publicly financed services (De Menezes and Peci 2023; Salamon and Toepler 2015; Lecy and Van Slyke 2013).

Public-nonprofit partnerships emerge from the need to collaborate effectively in implementing public policies, as both sectors are complementary (Salamon and Toepler 2015; Salamon and Anheier 1998; Salamon 1987). Public-sector funding is necessary due to the limited capacity of private donations to support the nonprofit sector alone, with public funds inducing five times more nonprofit sector density than private-sector donations (Lecy and Van Slyke 2013). Continuity in policy priorities and funding programs allows public funding stability, stimulating nonprofit density in the face of unstable private donations (Lecy and Van Slyke 2013, Corbin 1999). Several studies have demonstrated that public sector funding has a positive impact on nonprofit sector growth (Lecy and Van Slyke 2013; Luksetich 2008; Salamon 1995). Therefore, nonprofits depend on government funding to fulfill their mission (Gazley 2007, 2010).

In developing countries, unstable forms of government funding are a significant source of support for public-nonprofit partnerships (AbouAssi, Wang, and Huang 2021). This reality challenges the mechanism of funding stability predicted in the interdependence theory and demands further research. We account for a particular type of unstable government funding, known as pork-barrel funding (Shepsle and Weingast 1981). This kind of funding is referred to differently depending on the context and academic approach. In the United States, it is often termed earmarks (Andres 1995), in some Commonwealth countries, it is called constituency funds (Baskin *et al.* 2014), and in more recent policy discussions, it appears under the label community project funding (Ditch 2023).

Pork-barrel funding is usually related to legislative control over budget allocations. Funding is often tied to political and electoral interests, enabling public policies and goods through distributive policies (Bertholini *et al.* 2018; Golden and Min, 2013). It is inherently unstable because legislators’ control over the budget leads to a funding process that is marked by negotiations among party alliances and coalitions (Samuels and Zucco 2015) and the direct connection with the electorate's needs (Mayhew and Arnold 2004). Unlike stable programmatic funding, which reinforces predictable and sustained partnerships, pork-barrel allocations, which are highly contingent on shifting political alliances, electoral cycles, and individual legislators’ priorities, introduce significant instability.

While interdependence theory suggests a positive relationship between the government's pork-barrel funding allocations and the nonprofit sector's growth, the instability of this type of public sector funding warrants further investigation. We also analyze whether a municipality's wealth mitigates the risk of funding instability since it supports revenue diversification, but with the potential cost of reinforcing structural inequalities in service provision. Our study’s findings are of broader interest because we concentrate on a topic of interest for developing countries (Brass *et al*. 2018) and expand the scope of previous studies, which usually are U.S.-centric and focused on human services nonprofits (Minkowitz *et al.* 2020).

**Pork-Barrel Funding and the Growth of the Health Nonprofit Sector**

The rationale for our hypotheses is based on interdependence theory. Public-nonprofit partnerships result from the need to collaborate effectively in implementing public policies (Salamon and Toepler 2015). The interdependence theory focuses on how institutional stability, such as a reliable source of funding through public-nonprofit partnerships, relates to nonprofit sector growth. Does this relationship continue to exist in the context of unstable public funding? Does unstable public funding influence on nonprofit sector growth depend on contextual factors such as the availability of complementary revenue sources that can mitigate the risk of unstable funding? To advance scholarship in this area, we move forward with two hypotheses to question the influence of pork-barrel funding on the growth of the health nonprofit sector.

*The effect of unstable pork-barrel funding*

Government grants and federal programs are expected to fuel nonprofit sector growth within interdependence theory (Bae and Sohn 2018; Lecy and Van Slyke 2013; Corbin 1999). However, in developing countries such as Brazil, unstable funding constitutes a significant share of resources for public–nonprofit partnerships (AbouAssi, Wang, and Huang 2021). This is evident in Brazil’s surging pork-barrel allocations, often directed toward constituencies as a means of rewarding electoral support (Carvalho 2007; Wessel Tromborg and Schwindt‐Bayer 2019).

We expect that pork-barrel funding has a positive influence on the health nonprofit sector because it targets unmet demand through a direct connection between politicians and constituencies. Pork-barrel supports funding public goods delivery, such as health services, into underserved communities (Wessel Tromborg and Schwindt‐Bayer 2019; Baskin *et al.* 2014; Golden and Min 2013). Politicians target health nonprofits to overcome political opposition (Montini and Alisson 2025), to implement policies overlooked by public health facilities (such as horse-assisted therapy), and to leverage their political connections within the health nonprofit sector, enabling, for example, credit claiming of nonprofit activities (Boulding and Gibson 2009). Moreover, nonprofits have political ties that can channel funding to implement their strategies (Fyall 2016; Zhan and Tang 2016). Therefore, pork-barrel funding can support health nonprofit sector growth by funding new organizations or the expansion of existing operations to meet voters' demands. Hence, we present our first hypothesis:

*H1: Pork-barrel funding increases healthcare nonprofit sector growth at the municipal level (+).*

*The moderating effect of municipal wealth*

Nonprofit dependency on public-sector funding makes them vulnerable to public-sector contingencies. Such limitations can be due to budget constraints (Baião, Peci, and Costa 2015; Brinkerhoff 1999; Abramson and Salamon 1986) or, in the case of pork-barrel funding, revenue instability due to changes in the political and electoral incentives of politicians.

In an uncertain and unstable funding environment, nonprofits seek alternative sources of revenue. Nonprofit sector's funding alternatives encompass public-sector grants, subsidies, program funding, service fees, and private donations (Corbin 1999). In this context, nonprofit activities in wealthier municipalities enable alternative revenue sources, resulting in more stable revenues and promoting greater organizational longevity (Carroll and Stater 2009; Corbin 1999). Therefore, we expect the health nonprofit sector to grow more in municipalities where they can rely on complementary revenues to unstable pork-barrel funding, such as charging fees for out-of-pocket health service payments, receiving donations, and providing services to healthcare plans. Specifically, unstable funding may encourage nonprofits to cluster in wealthier municipalities where revenue diversification is feasible, mitigating the risks of unstable pork-barrel funding.

Given this context, we test whether the possibility of alternative revenue sources available in wealthier municipalities moderates the influence of pork-barrel funding on health nonprofit sector growth as follows:

*H2: Municipality's wealth positively moderates the influence of pork-barrel funding on healthcare nonprofit sector growth (+).*

If this expectation holds, however, it raises a policy concern: it indicates that, although unstable pork-barrel funding can influence health nonprofit sector growth, it is limited to supporting the health nonprofit's complementary role in less wealthy municipalities, even when political and electoral constituency-driven incentives shape funding to reach unmet demands.

**Methods**

*Study context*

The context for our research is the healthcare sector in Brazil. The interdependence between the public Unified Health System (SUS) and the health nonprofit sector is a Constitutional provision. Unlike other public services, the health nonprofit sector has a legal role of providing health services to complement public services (Leis *et al.* 2003). Nonprofits essentially perform this role within public-nonprofit partnerships (Santos 2021). Consequently, health nonprofits account for 49% of health appointments and 42% of hospitalizations within the public Unified Health System (SUS) (Ministry of Health 2018). More than 6,000 health nonprofits are registered in Brazil (Ipea/CSOMap 2024), operating 6,869 health facilities as of 2020 (Ministry of Health 2024). The health nonprofit sector is heterogeneous and includes philanthropic, beneficent, or charity-related organizations founded mainly by religious orders (Canabrava *et al*. 2007; Landim 1997). There are also health nonprofits that originated from social movements, which are active in health promotion and assistance (Mendonça, Medeiros, and Araújo 2019); and “for-profit in disguise” (Weisbrod 1988) health nonprofits that serve private health plans and out-of-pocket assistance, exclusively or not.

Public funding attached to public policy programs has been a primary source of funding for these health nonprofit organizations, and government incentives are associated with the control of the sector's expansion (Peci, Figale, and Sobral 2011). Historically, the health nonprofit sector has been mainly dependent on stable public funding, which refers to budget allocations discretionarily managed by the Ministry of Health and municipal health agencies (Leis *et al*. 2003). Yet, in developing countries, local governments frequently depend on central government transfers due to limited economic diversification and weak local tax bases, which constrain their fiscal autonomy (AbouAssi and Bowman 2018). This pattern of fiscal dependence is particularly evident in Brazilian municipalities operating within the Unified Health System (SUS), where central government transfers are essential for sustaining local health service delivery. The SUS is formally a decentralized public health system; however, its budget has become increasingly controlled by national-level legislators, who allocate pork-barrel funds to fulfill political and electoral commitments. During the study period, pork-barrel allocations accounted for 46% of the central government’s health transfers to municipalities (authors’ dataset), signaling a growing reliance on politically negotiated and inherently unstable funding streams.

Between 2015 and 2020, an average of 14% of federal pork-barrel resources was directed to nonprofit-managed health services, corresponding to roughly R$1.5 billion (USD 500 million) in average annual expenditures (study database, Ministry of Health, 2024). Concomitantly, between 2017 and 2019, the health nonprofit sector achieved its highest growth rates. The health nonprofit sector is also expanding, but it is unclear whether this expansion is related to public funding. From 2015 to 2020, the number of health nonprofits increased by 18% (IPEA/OSCMap 2024), and the number of nonprofit health facilities increased by 23% (Ministry of Health 2024). Although a large share of health nonprofit funding comes from public-nonprofit partnerships (Leis *et al.* 2003), in recent years, the expansion of private health plans and the health market has rapidly changed the funding profile of health nonprofits (Santos 2021). *Figure 1* illustrates the growth of the nonprofit sector's unstable funding and its evolution.

Gráfico, Gráfico de barras

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Source: Elaborated by the author with data from Ministry of Health (2024) and Ipea/CSOMap (2024) - Conversion rate: 1USD=5R$

*Figure1. Unstable pork-barrel funding and health nonprofit sector growth (measured as the number of nonprofits and the number of nonprofit health facilities).*

*Sample*

We collected panel data covering the 5,570 Brazilian municipalities from 2015 to 2020 to test the hypotheses, pooling 33,420 observations. The number of pooled observations dropped because we lagged the explanatory and budgetary control variables, observing the budget cycle (Cheng 2019). The unit of analysis is the municipality.

*Measures*

To operationalize the construct of *health nonprofit sector growth*, we use three indicators: (1) the number of registered health nonprofits, (2) the number of employees in these organizations, and (3) the number of health nonprofit facilities. Each measure is standardized per 10,000 inhabitants to account for population size. Using multiple indicators of growth strengthens the robustness of our analysis and allows us to capture distinct dimensions of nonprofit expansion.

Previous studies have often applied the concept of *nonprofit sector density*, typically dividing the number of nonprofits by population at different geographic scales, such as counties (Grønbjerg & Paarlberg, 2001) or metropolitan statistical areas (Lecy & Van Slyke, 2013). Others have used absolute counts of nonprofits (Pennerstorfer & Rutherford, 2019) or employees (Ben-Ner & Van Hoomissen, 1992; Salamon, Hems, & Chinnock, 2000; Matsunaga & Yamauchi, 2004; Bae & Sohn, 2017). While Lu and Xu (2018) note that variation in measurement does not substantially alter the observed relationship between government size and nonprofit size, the concept of density remains ambiguous in operationalization across studies.

For this reason, we focus on *sector growth* rather than density. Growth indicators allow us to assess the dynamic effects of unstable funding over time and to distinguish whether pork-barrel resources foster the creation of new organizations, employment expansion, or facilities development. We do not differentiate between types of entities (e.g., hospitals, ambulatory centers, primary care clinics), since the available data do not allow for such disaggregation, and this was not the primary goal of the study. Nonetheless, compiling distinct measures of nonprofit sector growth represents a novel contribution relative to much of the existing literature, which tends to rely on a single indicator.

The independent variable, pork-barrel funding, is measured by payments to fund health policies implemented by nonprofits at the municipal level per 10,000 inhabitants.

The moderator is a continuous variable that measures a municipality's wealth based on its Gross Domestic Product (GDP) per capita. This measurement follows Corbin (1999), who found a relationship between income (measured as GDP per capita) and nonprofit growth, which indicates that nonprofits seek sources of funding other than government.

All variables are measured yearly and cover the period of 2015-2020. Descriptive statistics for independent, dependent, and control variables are presented in Table 1, which also informs the reasoning for the inclusion of each variable and data sources.

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*Source: Own Elaboration*

*Data structure and analysis*

Table 2 informs the correlation among variables, indicating no issues of multicollinearity.

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*Source: Own Elaboration*

Nonprofit sector studies are marked by sign-changing and conflicting results (Kim 2015). These distinct results are potentially caused by endogeneity bias due to reverse causality since nonprofit sector growth can also influence public sector funding. Also, previous studies corroborate that prior density strongly predicts nonprofit density (Costa 2016; Saxton and Benson 2005), creating temporal dependence. This study employs panel data analysis, which is relatively uncommon in nonprofit studies (Ba, Berrett, and Coupet 2021), and accounts for “endogeneity bias” and “temporal dependence” to investigate unstable funding for public-nonprofit partnerships, a reality in developing countries.

First, we adopted fixed-effects models to control unobserved heterogeneity across municipalities, providing a more robust within-unit analysis (Cheng 2019; Zhu 2013). The number of pooled observations decreased due to the inclusion of lagged explanatory and budgetary control variables to account for the budget cycle (Cheng 2019).

However, fixed-effects estimates should be interpreted with caution due to the short time dimension (T) (Zhu 2013) and the potential for endogeneity (Cheng 2019; Zhu 2013). To address both endogeneity bias and temporal dependence, we employed the Arellano-Bover/Blundell-Bond System GMM estimator (Cheng 2019; Zhu 2013). This dynamic panel method uses lagged levels of the dependent variable as instruments in the first-differenced equation and adds instruments for the levels equation, improving efficiency. The Levin-Lin-Chu test confirmed non-stationarity of the dependent variables. We report standard diagnostic tests (AR(1), AR(2), Sargan, and Hansen tests) to assess the validity and robustness of the GMM estimates.

Regarding the moderation analysis, we considered the interaction between two continuous variables. To mitigate potential issues in data analysis, we standardized all explanatory variables to facilitate the interpretation of interaction effects (Dawson 2014).

**Results**

*Does pork-barrel funding influence the growth of the health nonprofit sector?*

Our log-log results, presented in Table 3, indicate that pork-barrel funding has a positive and statistically significant effect on nonprofit employment levels, as measured by the number of employees in both fixed-effects and GMM models. Precisely, a 1% increase in pork-barrel funding corresponds to a 0.036% rise in the number of employees per 10,000 inhabitants (p < .05), holding all other factors constant (see Arellano-Bond GMM Model). Pork-barrel funding has a positive and statistically significant effect on the registered number of nonprofits, yet only in the fixed-effects model, not the GMM. The results for the number of facilities were not consistent across models. Consequently, the results provide support for Hypothesis 1 (H1) when considering growth as measured by the number of employees of nonprofits in the municipalities.

Our findings endorse Lu and Xu's (2018) conclusion that government funding has a positive yet modest effect on nonprofit sector growth. The control variable for federal funding is not significant, and municipal funding is only significant for the number of employees in the fixed-effect model, not in the GMM model, emphasizing the relevance of pork-barrel funding for health nonprofit growth. Results also indicate the importance of path dependence or cumulative growth effects, meaning that there is inertia in the growth of the health nonprofit sector (see values of lagged dependent variables in the Arellano-Bond Model). As for other control variables, we only find weak evidence that health plan coverage positively influences the increase in the number of nonprofits.

*Tabela

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*How does the effect of pork-barrel funding vary across municipalities with different revenue diversification capacities?*

The models presented in Table 4 incorporate the moderating effect of municipal wealth on the relationship between pork-barrel funding and nonprofit growth outcomes. The moderation result is positive and significant in the fixed-effect models for the registered number of nonprofits (0.001%), number of employees (0.16%), and number of facilities (0.02%) per capita, p < .05.

The GMM models reveal a different pattern of results regarding the effect on the number of nonprofits when including the moderation effect of municipal wealth. Pork-barrel funding has a positive and statistically significant effect on the number of registered nonprofits (0.27 %, p < 0.05). Yet, a municipality's wealth negatively moderates the relationship between pork-barrel funding and the number of nonprofits (-0.30%, p <0.05). However, we also found that a municipality's wealth has a modest positive moderation of the number of employees (1.27%, p < 0.10).

**Tabela

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*Source: Own elaboration.*

To further our analysis of the moderation effects, Figure 2 shows the graph plots for the interaction between pork-barrel funding and GDP per capita. The graphical analysis indicates that, when we control for endogeneity bias, the marginal effect on the number of health nonprofits is negative in wealthier municipalities. In contrast, regarding the number of employees, the hypothesized result holds, and the effect of pork barrel is higher in wealthier municipalities.

Gráfico, Gráfico de linhas

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Figure 2. Marginal effects analysis of the interaction between pork-barrel funding and GDP per capita on the nonprofit sector's growth, measured as the number of health nonprofits and the number of employees.

Source: Own elaboration.

Results qualify our initial hypothesis: while pork-barrel funding increases nonprofit numbers predominantly in less wealthy municipalities, in wealthier ones, the effect materializes through employee growth rather than new entries.

Regarding the control variables, we find that, when we account for a municipality's wealth, the relationship between health plan coverage and the number of nonprofits is inverted (-0.03%, p < 0.05). Other control variables showed contrasting and nonsignificant results, endorsing the contradictory findings of previous studies (Pennerstorfer and Rutherford 2019; Costa 2016; Lecy and Van Slyke 2013). Government and market failure, as measured by the poverty level, yielded mostly positive coefficients in fixed-effects models. However, System GMM revealed a negative and statistically insignificant relationship, with a small coefficient that was significant only in System GMM. These insignificant and changing signs support the disparate findings in literature.

Notwithstanding, it caught our attention that the previous number of health nonprofits had a substantial influence on health nonprofit growth. This result corroborates previous studies' (Marchesini da Costa 2016; Saxton and Benson 2005) evidence that “density creates density,” which we discuss in the next section.

**Discussion**

Pork-barrel funding has a modest yet positive and significant effect on health nonprofit sector growth, despite the unstable nature of this funding source for Public Non-Profit Partnerships.

However, the impact is modest, aligning with Lu and Xu's (2018) systematic review, which concluded that public sector funding has a limited and often insignificant relationship with nonprofit sector growth. Their analysis of 30 quantitative studies suggested that other factors beyond government funding are the primary drivers of nonprofit growth.

Our main findings have a twofold theoretical impact. First, our findings suggest that government funding alone is insufficient to induce nonprofit sector growth, qualifying a core assumption of interdependence theory. Secondly, despite its instability, pork-barrel funding is political in its allocation process. It responds to constituency needs and nonprofits' expansion strategies and, explicitly, their political ties (Fyall 2016; Zhan and Tang 2016). Such political convergence supports nonprofit sector growth due to the existence of local and organizational demands.

Beyond structural limits in government funding, the small effect can also be attributed to funding fragmentation. Despite the total substantial funding, pork-barrel funding is fragmented into thousands of small political decisions made by individual legislators. Such funding inefficiencies may increase the relational burdens between nonprofits and governments. Consequently, the diminishing trust can jeopardize service quality, as Peng and Lu (2020) warn in their investigation of the impacts of government payment delays.

Regarding our second hypothesis, we found a positive moderating effect of wealthier municipalities on the relationship between pork-barrel funding and nonprofit sector growth, measured as the number of employees. Our findings suggest that revenue diversification slightly increases the positive effect of pork-barrel funding within municipalities. This finding aligns with prior studies (Carroll and Stater 2009; Corbin 1999) and indicates that the possibility of complementary revenue streams found in wealthier municipalities mitigates the risks of unstable funding. Increasing the number of employees demonstrates a long-term expansion of health services.

Nevertheless, the moderation effect of municipal wealth was inverted for the number of health nonprofits. We infer that pork-barrel funding enables a modest increase in the number of nonprofits in less wealthy municipalities. This finding converges with politicians addressing unmet needs in exchange for political and electoral gains. Revisiting the anecdote that opened this article, pork-barrel funding enables new, small health nonprofits, usually founded by one person and a team of volunteers. Further studies can better comprehend the profile of the new nonprofits. Still, our results already indicate that less wealthy and more needy municipalities are potentially receiving health services of limited quality.

Further, previous studies did not find a relationship between philanthropy and nonprofit growth, leading Lecy and Van Slyke (2013) to wonder how wealth reaches nonprofits. Brazil's case also offers two potential explanations for nonprofit growth in wealthier municipalities. An institutional explanation is that Brazil's SUS incentivizes public service delivery in smaller municipalities, while referring more complex health cases to larger and wealthier municipalities, where nonprofits are more likely to manage hospital facilities. A second explanation is corroborated by the positive relationship found between health plan dependence and nonprofit growth. Wealth reaches nonprofits when they provide private services, in addition to public health provision. In this manner, wealth seems to reach nonprofits when they are profit-in-disguise organizations.

Finally, our findings also corroborate nonprofits' structural tendency to follow an inertial pattern of “density creating density”. This pattern also reinforces existing inequalities and challenges the role of nonprofit organizations in supporting universal healthcare. Interestingly, we found no strong association between social capital and health nonprofit sector growth, suggesting that “density creates density” is primarily an intra-sectoral dynamic. A potential causal mechanism is that health nonprofits take advantage of resource sharing and mitigate the risks of an unknown environment (Marchesini da Costa 2016; Saxton and Benson 2005). This resembles the formation of clusters, a subject that seems unexplored in literature. Another explanation would be the importance of cumulative and path-dependent dynamics in the nonprofit sector, informed by Suárez (2010). Notwithstanding, further analysis must account for the nonprofit sector's heterogeneities. Health nonprofits likely face distinct challenges and contexts compared to parks and recreation organizations.

In synthesis, although unstable, pork-barrel funding meets local demands and supports a slight increase in nonprofit sector growth. However, results indicate that this kind of funding plays a minor role in supporting the health nonprofit sector's growth with long-term services to less wealthy and underserved areas. This limits pork-barrel funding's potential to address health assistance gaps and underscores the limits of the nonprofit sector in responding to complex social issues in diverse societies (Paarlberg and Zuhlke 2019). Stable government funding was found to be even more limited in influencing nonprofit sector growth. Future research should investigate how organizational dynamics, historical growth patterns, and nontraditional factors, such as sector-specific ones, impact nonprofit sector growth, especially in the context of unstable funding expansion. By showing how unstable, politically driven funding interacts with local economic capacity, our study extends interdependence theory and highlights the conditions under which government resources shape nonprofit development.

Concerning our findings extension, we also regard that the nonprofit sector is heterogeneous among developing countries. Some developing countries have fragile government contexts that are associated with a nonprofit sector that relies heavily on external aid (see Murtazashvilli 2016; Brass 2012; Fruttero and Gauri 2005). In such contexts, the rise of nonprofits is attributed to service provision by a robust civil society due to the government's lack of resources or political will (Brass *et al.* 2018). In another set of countries, the relationship between the government and the nonprofit sector is predominantly characterized by suspicion and co-optation (Salamon, 2020; Skokova, Pape, and Krasnopolskaya, 2018; Lu and Dong, 2018), and the nonprofit sector expands under dynamic changes in government control over society (Lu and Dong 2018).

We focused on contexts where there is significant interdependence between the government and the nonprofit sector. The lack of social capital renders nonprofits overly dependent on government funding (Lu and Dong 2018; Peci, Figale, and Sobral 2011; Hodgson 2004). In countries such as Brazil and India, nonprofits play a crucial role in delivering public services, particularly in healthcare, where activities are funded by donations, fee-for-service, and, more saliently, government grants or funding (Nimai and Kumar 2016; Canabrava *et al.* 2007).

**Conclusion**

Pork-barrel funding is expanding worldwide and potentially shaping the structure of public non-profit partnerships (PNP) funding. Our study of Brazil supports advances to the interdependence theory by demonstrating that the effects of public funding on nonprofit growth are contingent on both the type of funding and the local context. Unstable, politically driven allocations such as pork-barrel funding can generate new but fragile nonprofits in less wealthy municipalities, while in wealthier municipalities, they reinforce the capacity of established organizations. These findings highlight how political incentives and economic conditions jointly shape the nonprofit sector’s development.

While this study makes significant contributions, it also faces several limitations. First, we focused exclusively on unstable public funding and did not account for other public and private funding sources, as nonprofit revenue data are confidential in Brazil. Once this obstacle is overcome, further analysis is possible, focusing on the perspective of nonprofits navigating between public and private healthcare assistance and reporting to multiple constituencies, as cautioned by Herman and Renz (2004). Second, although explanatory variables were lagged by one year, nonprofit sector growth may have a longer response time to funding changes, potentially biasing the results. Third, the study lacked a multidimensional approach to understanding the drivers of nonprofit sector growth, such as organizational characteristics and contextual factors beyond public funding. Finally, unlike the IRS in the United States, Brazil lacks a comprehensive and reliable database on nonprofit revenues, making it impossible to test whether nonprofits with multiple funding sources exhibit larger responses to pork-barrel funding.

Despite these constraints, our findings highlight that policymakers should focus on creating funding strategies that adequately respond to local needs and necessities while stabilizing public-nonprofit partnerships. By addressing structural inequalities and ensuring funding mechanisms that align intra-sector dynamics and social needs, policymakers can transform public-nonprofit partnerships into more effective vehicles for universal healthcare. Lastly, policymakers must consider the diverse constituencies that nonprofits serve and their reliance on both public and private funding. This dynamic presents both challenges and opportunities for advancing universal health coverage and improving quality.

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1. We adopt the terminology of nonprofit sector growth to avoid the conceptual and measurement ambiguities often associated with density, what we further discuss in the Method section. However, in the literature review section we employ both terms interchangeably. [↑](#footnote-ref-1)