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**The Subnational Method  
and Social Policy Provision**

Socioeconomic Context, Political Institutions  
and Spatial Inequality

Rodrigo Rodrigues-Silveira



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# The Subnational Method and Social Policy Provision

## Socioeconomic Context, Political Institutions and Spatial Inequality

Rodrigo Rodrigues-Silveira

### **Abstract**

The aim of this paper is to examine the possibilities and challenges posed to the analysis of public policy implementation from a subnational perspective. It focuses on three central aspects: (1) the methodological opportunities offered by the subnational comparative method to understand public policy within countries; (2) the intersection of the economy and demography as conditioner of the localization of needs and the formation of spatially heterogeneous demands; and (3) the spatial specialization of provision due to variations in institutional structures and policy design. These ideas are illustrated using Brazilian social policies as cases in order to demonstrate how economic, demographic and politico-institutional characteristics at the subnational level alter the implementation of public policies and, therefore, generate inequalities of access to welfare.

**Keywords:** subnational method | welfare regimes | political demography

### **Biographical Notes**

Rodrigo Rodrigues-Silveira is a political scientist with a Ph.D. in Latin American Studies from Salamanca University. He is the author of “Local Government and the Welfare State” (Manuel Giménez Abad Foundation, 2012) and has published in international journals such as *Latin American Research Review*, *Mesoamérica*, and *América Latina Hoy*. He also was awarded with the Brazilian National Treasure Prize in 2011 and his doctoral dissertation received the Guillermo O’Donnell Prize for the best thesis on Political Science by the Latin American Political Science Association (ALACIP), and was granted two honorary mentions, one from the Brazilian Section of LASA and other from the Manuel Giménez Abad Foundation in Spain. Previously, he was a postdoctoral research fellow at Brown University and, currently, he is a postdoctoral fellow, funded by the Ibero-American Institute of the Prussian Cultural Heritage Foundation, at [desiguALdades.net](http://desiguALdades.net) in Research Dimension II: Socio-political inequalities and Research Dimension III: Socio-ecological inequalities. His main areas of study are subnational politics and institutions, welfare regimes, and the interaction of politics and territory.

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## 1. Introduction

This paper addresses the following fundamental questions in order to investigate the role that factors beyond institutional design play in social policy, particularly below the national level: what are the drivers of subnational variations in social policy provision? How can processes of geographically uneven development and spatial concentration of demographic and economic factors generate inequality in access to public services? What is the role of political institutions and policy design in this matter?

The literature on public policies recognizes the existence of some institutional factors that can affect the social provision at different levels of government. Elements such as the state structure (federal/unitary), fiscal federalism, or state tradition (Napoleonic, Liberal, Bureaucratic, Scandinavian) have been argued to having shaped policies and as explaining the degree of variation in social policies between and within countries (Obinger, Leibfried, and Castles 2005; Sellers and Lidstrom 2007; Loughlin, Hendriks, and Lidström 2010; McEwen and Moreno 2005). However, these explanations focus mainly on institutional structures and the administrative divisions of the state to identify and analyze differences in subnational social policy provision. These analytical traditions tend to underexplore many processes not entirely identified with institutional drivers, such as the role of demography, uneven economic development, and political phenomena not circumscribed to state institutions, administrative boundaries, or electoral participation (Cox 1998).

Another restriction of this literature comes from the fact that it stays at the national level, and thus at the subnational level could benefit from more input from findings in other research fields. Geographers, economists, and demographers have developed many concepts and empirical tools to understand and theorize subnational variation in economic activity, population structure, and different flows connecting people and places. These instruments, as will be argued in this essay, are more useful than national-level institutional approaches for understanding politics at the subnational level.

The underdevelopment of the analysis of social policies variations at the subnational level reflects the overall state of analysis of subnational phenomena in the existing social research literature (Snyder 2001). The broad adoption of methodological nationalism and the systematic employment of the national level alone to analyze political phenomena have directed empirical studies away from the subnational scale (Chernilo 2007; Snyder 2001; Lobao and Hooks 2007).

Using social policies as a reference area, this paper will examine the possibilities and challenges posed to the analysis of politics from a subnational perspective. In particular, it will focus in three central aspects: (1) the methodological/epistemological opportunities offered by the subnational comparative method to understand social policy within countries; (2) the intersection of economy and demography as conditioners of the localization of needs and the formation of spatially heterogeneous demands; and, finally, (3) the spatial specialization of provision due to variations in institutional structures and policy design.

Although the focus of this paper on subnational politics and social policy is more conceptual, the themes under scrutiny here will be illustrated using Brazil as a case study. Its three-tiered federalism allows the analysis of very detailed information on fiscal federalism, social policy expenditure, and coverage from the municipalities to the national government. On the other hand, recent changes in legislation in favor of both social assistance and universal coverage policies (education and health) raise new and useful questions about how public policies are implemented differently across territories.

This work is divided into three sections. The first analyzes the methodological aspects involved in the employment of the subnational scale in the analysis of political processes. The second one discusses how the spatial distribution of population and economic activity can influence the formation of heterogeneous demand patterns. The third assesses how politico-institutional structures, fiscal resources, and policy design can affect the territorial patterns of social policy provision. Finally, some concluding remarks are drawn from the evidence presented during the development of the work.

## **2. Scaling Up and Down: The Subnational Scale**

Methodological nationalism, or the systematic employment of national aggregates and averages in social research, suffers from the congenital problem of erasing diversity by creating an illusory homogeneity (Chernilo 2004; Snyder 2001). Per capita GDP and the urbanization rate, for example, are aggregate measures that suppose that all citizens of a specific country contribute equally to the production of value in the economy or have the same “average” or “common” style of living (urban or rural). These indicators, as national averages, obscure a great deal of diversity and above all inequality related to processes of social production and organization. Even when some measure of dispersion or variance is reported, important qualitative information about how these aggregate results were produced is lost nevertheless.

From a subnational comparative perspective, the main problem with this “mean-spirited analysis”, as defined by Richard Snyder in his seminal work on the subject (Snyder 2001), is that it helps to conceal and to exclude from political analysis some key social, political or economic processes related to the production of inequalities. False homogeneity obliterates the fact that social phenomena are the result of political conflict and negotiation between different actors with unequal power resources. By providing the result as a consolidated value, all existing subnational variation (which can include resistances, diversity, and political conflict) is simply removed from the analysis.

It should be emphasized here that this does not mean that the nation-state performs no role in the political world nor it is an attempt to replace one level of analysis with another imperfect substitute such as the local or regional government. The point is that attention to the subnational level improves on the current literature which focuses on analysis of national aggregates or measurements alone and thus can help to illuminate empirical shortcomings and anomalies in the current literature by analyzing political dynamics from different perspectives. Furthermore, placing inequality at the center of analysis, rather than cross-national comparison alone, requires going below the national level to discover the contours of conflict. In this way, the subnational level of analysis contributes more to the theorizing about inequality than cross-national comparison.

This section will describe how a focus on political processes can challenge traditional perspectives in terms of the territorial correspondence between institutions and policies, and how changing the scale of analysis can alter significantly both the research results and the meaning of concepts (concept semantics). In order to do that, four elements will be underlined: (1) political phenomena as institutionally unbounded processes; (2) how changes in the scale of analysis alter both research results and the perception of actors involved in the policy making process; (3) how different scales imply semantic changes in concepts, since the same definition for a political phenomenon at a determined level can represent or measure something quite different at another scale; and (4) how the strength and the direction of causal relations can vary significantly depending on the territorial context in which the political relations take place or a public policy is implemented.

## 2.1. Institutionally Unbounded Processes

In many cases, the territoriality of social and political processes does not correspond or fit perfectly to the territorial administrative divisions of the state. Borders (not just international, but also regional and local, political or administrative) are often very permeable and susceptible to be overrun by different flows of ideas, capital, objects, and people. Therefore, the existence of formal regulation does not always guarantee a perfect “boundary control” (Gibson 2005) or the exact match between the formal rule over a certain area and the extent of spatial distribution of any social or political process.

The challenges imposed by global economic processes to domestic politics and state’s political authority is widely documented and analyzed by economists, political scientists, and geographers (among others, Krugman 1991; Harvey 2005; Castles 2007; Swank 2002). The literature on methodological nationalism builds on this to articulate a fundamental criticism of the incapacity of traditional analytical frameworks to capture and understand the mismatches between the formal territorial control of states and the international processes that permeate and challenge state capacity to control flows of trade, information, and capital (Beck 2007; Wimmer and Schiller 2002; Chernilo 2007; Reyes and Centeno 2011). Nonetheless, as will be demonstrated here, this permeability of borders and resulting institutional conflicts are not phenomena exclusively linked to globalization or international flows. They can also be perceived in many other dimensions of subnational politics and society.

The territorial mismatch between state administrative boundaries and social, political and economic processes is called here institutional unboundedness. It is characterized by the absence of perfect spatial correspondence between legal or administrative boundaries of the state and the territory occupied by a particular social, economic and political process or event. When the legal geographical division of labor within the state does not fit perfectly the phenomena that they should supervise or act upon, problems of coordination, planning, supervision, and evaluation emerge. Therefore, it can be considerably difficult for any institutional boundary to adequately contain social processes. This is especially the case for those policies that must be delivered locally, such as education and health care.

The relevance of this concept is twofold. Firstly, social policies are implemented by governments empowered and circumscribed into legally enforced territorial jurisdictions defining where they can and where they cannot act. Secondly, the territorial mismatch between legal boundaries and actual political phenomena also allows the perception

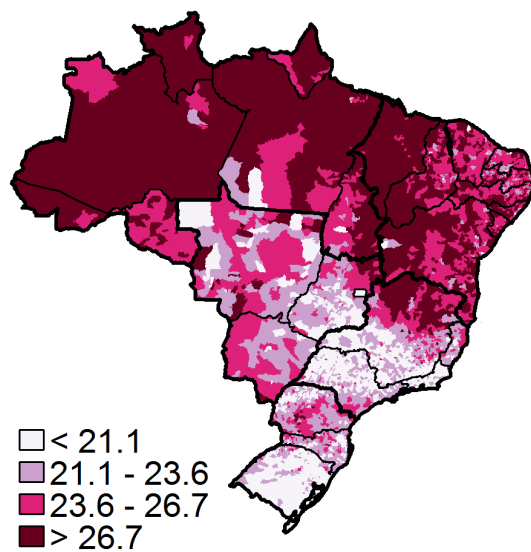
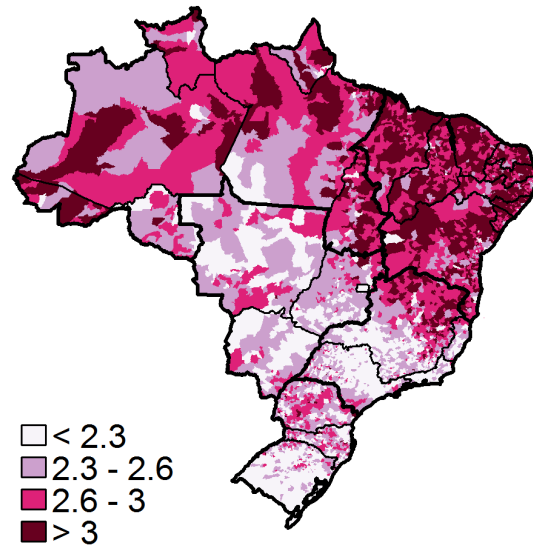


of the public sphere as broader than a pure governmental epiphenomenon, capable of being permeated and shaped by other societal and political actors in multiple scales (Habermas 1996: 360; Pensky 2008: 92; Foucault 2008; Cox 1998).

Another restriction derived from the existence of institutionally unbounded processes comes from the fact that regional and local governments plan and analyze demands and needs using data concerning only their territorial jurisdiction. On the other hand, data availability is also linked to the territorial organization of the state. Censuses and administrative records are generated and maintained by governmental units and, thus, are molded according to their territorial jurisdictions and perceived needs. The main consequence of these elements is the necessity of specific political incentives and the construction of basic agreements concerning what the shared problems are and how to coordinate actions and foster intergovernmental cooperation in order to overcome those territorial traps and restrictions imposed on the implementation of public policy.

One clear example of how needs or demands can be challenging to social policy implementation is observed in the spatial distribution of school-age children (7 to 17 years old) and fertility rates in Brazilian municipalities. Since the 1988 Constitution, basic education and health care were transferred to the competence of both states and local governments. In the case of education, state governments became held responsible for secondary schooling while the municipalities were given charge of preschools and primary education. In health, states became accountable for hospital and complex treatment while municipalities were charged with providing basic assistance.

A quick examination of the maps below shows some interesting evidence with implications for the demand for social policy provision (Maps 1a and 1b). The most salient feature, for the current objectives, is that the proportion of both school-age children and fertility rates are not uniformly distributed within either the national or states territories and, thus, they constitute institutionally unbounded processes. Entire regions require more resources to be allocated to education in order to enroll every child in school, while some others have less relative pressure. The same phenomena can be seen in nurseries and child care.

**Map 1: Spatial Distribution of Demographic Indicators, 2010****(a) Children in School Age (%)****(b) Fertility Rate (Children/Mother)**

Source: Brazilian Institute for Statistics and Geography (IBGE), Demographic Census (2010).

These processes require more attention to how subnational politics work. They also raise some important questions concerning: (1) the kind of intergovernmental cooperation that is being developed (if any) in order to satisfy those needs and to overcome territorial traps derived from the same state administrative organization; (2) the conflicts and trade-offs among local, state, and federal governments concerning who pays for a service and who is responsible for providing it; and (3) the effect of these territorial mismatches on the generation of aggregate patterns of inequality.

The analysis of the institutionally unbounded processes can also help to identify inequalities within state administrative units. In the two maps above, one can identify that policies should be focused and selected to some degree on territories in order to promote equality of access to social services. These maps also illustrate the complementary responsibilities between levels of government in the provision of these policies, something that will be discussed in more detail in the next section.

## 2.2. Scaling Up and Down: Changing Perspectives and Transforming Results

Another important contribution that could be extremely useful to the comprehension of political events on the subnational scale is the analysis of the effects on research outcomes caused by the selection of a particular scale of observation. The decision to choose one scale of analysis over others affects profoundly the results obtained and, consequently, the interpretations derived from the data. This aggregation problem

is called Modifiable Areal Unit Problem (MAUP) (Openshaw 1984; Fotheringham, Brunson, and Charlton 2007: 237–40).

The basic idea behind the MAUP is that, having the same data and performing the same statistical tests, very different results can be obtained just by employing alternative areal units to aggregate data or to divide the space into different zones (Calvo and Escolar 2004). In order to illustrate how MAUP works, we can analyze the urbanization in Brazil creating the rates for all its administrative levels.

The results in Table 1 demonstrate that the more aggregated, the lesser the variation among cases. Municipalities range from 4.2% in less urbanized to 100% in the big metropolitan areas. The average urbanization of localities is 63.8% with a standard deviation of 22%. When states are considered, the interval between the minimum and maximum value reduces dramatically to 63.1% and 96.1%. This happens because more populated cities are generally highly urbanized and tend to raise the means. The same is valid for the regions. Thus, the general trend is: the more aggregated the area, the lesser the variation among cases (Rose 1973). These results constitute just one example of what was mentioned in the first section as the homogenizing effect of national means or aggregates.

The same can be said about correlations between variables. Testing the degree of association between urbanization rate and GDP per capita on each level the results clearly demonstrates a significant increase in the correlation coefficient from 0.245 when all 5,565 municipalities are included to 0.742 in the level of states and 0.977 when the same indicators are generated to regions (Table 1).<sup>1</sup> The main consequence of this ecological correlation problem (Robinson 1950) is to intensify causal relationships when there is in fact no or little association between two variables or social events at a more disaggregated scale or individual level.

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1 The data employed to calculate the urbanization levels and the GDP for each level were extracted from the demographic census microdata and the Gross Domestic Product surveys for municipalities, states and Brazil. All these databases are created by the Brazilian Institute for Statistics and Geography (IBGE in its Portuguese acronym) and constitute the most reliable source of geographically detailed data in Brazil. The first is performed decennially and is composed by a 10% sample of individual respondents statistically significant at the census tract level. The GDP surveys are held annually and are based on estimations computed from different economic surveys, all performed by IBGE at different levels. These characteristics provide data sufficiently robust to be reliable in different levels of aggregation, from municipalities to the nation state.

**Table 1: Urbanization Rates for Different Levels of Aggregation and the Degree of Correlation with Per Capita GDP**

|                | Mean | S.D. | Min. | Max.  | r (GDP) | Cases |
|----------------|------|------|------|-------|---------|-------|
| Brazil         | 84.4 | n.a. | n.a. | n.a.  | n.a.    | 1     |
| Regions        | 82.7 | 9.0  | 73.1 | 93.0  | 0.977   | 5     |
| States         | 80.2 | 9.0  | 63.1 | 96.1  | 0.742   | 27    |
| Municipalities | 63.8 | 22.0 | 4.2  | 100.0 | 0.245   | 5,565 |

Note: n.a. means not applicable.

Source: IBGE, Demographic Census (2010); IBGE, Municipal GDP (2009).

William Robinson's (1950) classical argument that group-level correlations cannot be substitutes for individual-level analyses is widely accepted by the methodological literature on political science. Notwithstanding, although it is briefly explored in his seminal text, there is much less knowledge on the effect that the same problem can exert among different scales or levels of analysis. For behavior at a more aggregated level, the scales cannot be considered as equivalent or perfect substitutes of less aggregated ones since problems such as zoning rules, density and other elements affect the results (Calvo and Escobar 2004).

All this suggests that researchers must be aware of the consequences of data aggregation at different levels of analysis. It is not a problem of better or worse, since in many cases there is no data available at lower levels, but it remains important to be aware of potential problems that can arise and to attempt to control it empirically or theoretically.

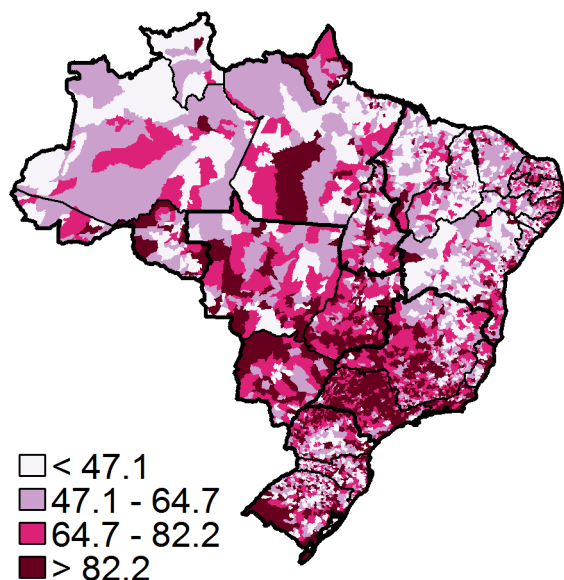
When the urbanization rate is mapped, the spatial distortions become even clearer (Map 2). A first glance at the three maps is sufficient to unveil the differences created by the use of alternative scales to measure the same phenomenon. Although the Northeast region concentrates higher absolute numbers in terms of urban population than the Northern region, the latter appears in the map as being more urbanized than the former.

The high population density in cities and villages explains this result. The demographic concentration in urban areas is even more emphasized by the fact that the capital cities of states (such as Manaus, Boa Vista or Rio Branco) collect the majority of the population. The use of aggregate measures simply erases the enormous heterogeneity

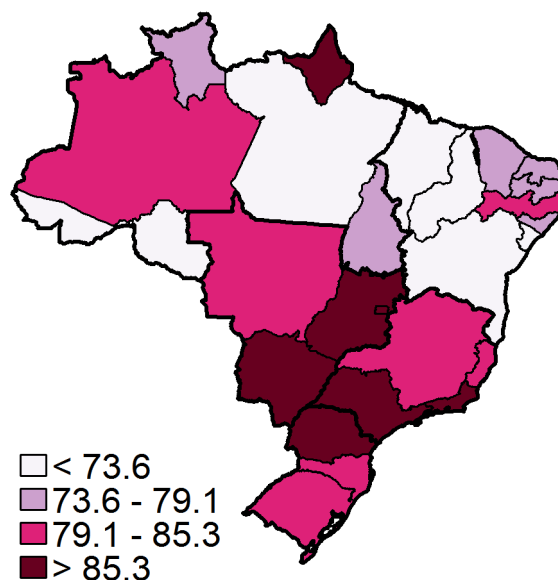
that can be perceived when the municipalities are used as the units of observation of the urbanization rate.

**Map 2: Urbanization Rates by Level of Government, 2010 (%)**

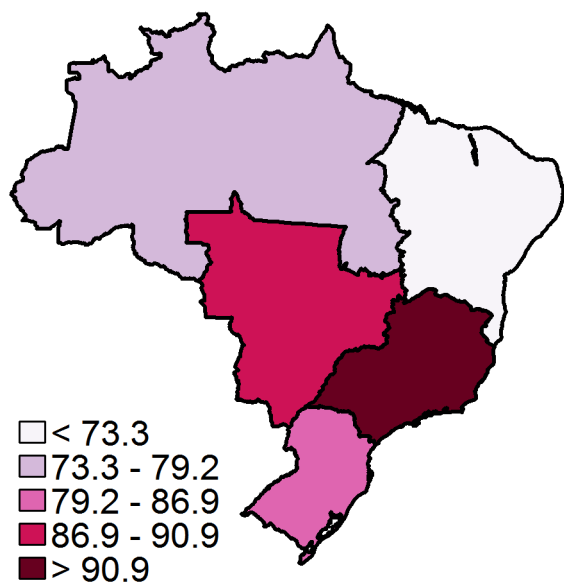
**(a) Municipalities**



**(b) States**



**(c) Regions**



Source: IBGE, Demographic Census (2010).

These results stress the problem of how aggregation erases heterogeneity. Comparing the map from municipalities with the one of regions makes easier to notice that

considerable heterogeneity and variation is lost in the aggregation process. The importance of contextualizing the notion of “urban” also becomes obvious since it is not possible to consider the urbanization process characterized by one big city surrounded by large areas characterized by small rural settlements (in the North region) as being conceptually equivalent to a network of highly urbanized and densely integrated cities (in the Southeast region).

The selection of a specific scale of analysis also helps to localize the analytical perspective on specific social or political actors. Using indicators calculated on the basis of a particular scale can help reveal the role of certain actors and hide the responsibility of others. For example, national indicators tend to put the national government at the center in most political analyses, while local indicators tend to be used to assess urban governance and quality of local institutions. Changes in scale can reveal new processes and shed light on the role of other actors not usually associated to a particular phenomenon. By comparing cases through the use of averages computed for regional or local scales, it is possible to provide new political perspectives on which responsibilities should be conferred to each actor in particular.

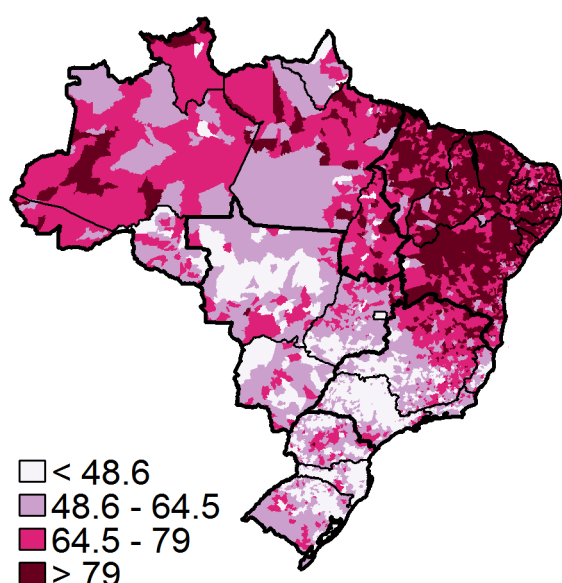
It also uncovers the inequalities hidden behind a false homogeneity when comparing widely different cases. In terms of agency, focusing in a new perspective can help to understand better the different capacities of subnational political authors to take advantage of the different set of opportunities given by the institutional structure to innovate in terms of political practices or to resist democratizing pressures from above, instead constituting subnational authoritarian enclaves (Gibson 2005; Giraudy 2010). In assessing poverty and inequality, for instance, most studies focuses on the role of the central government and other national political and social actors such as parties, civil society movements and major corporations. Nonetheless, there are many actors situated in other scales that can (or should) play a role in fighting poverty and reducing inequality that do not receive the same analytical attention and, consequently, are protected from political pressure and demands or are thus placed outside the frontier of policy implementation.

In order to illustrate the way how scale can help to perceive and analyze the role of specific actors in providing welfare, a subnational analysis reveals interesting dynamics in relative poverty measures for Brazilian municipalities when contrasting average household incomes with that of the entire country and with that of each state in particular. In this example, those households with less than 50% of the mean income (national and state-level) are considered poor. The results are shown in Maps 3a and 3b.

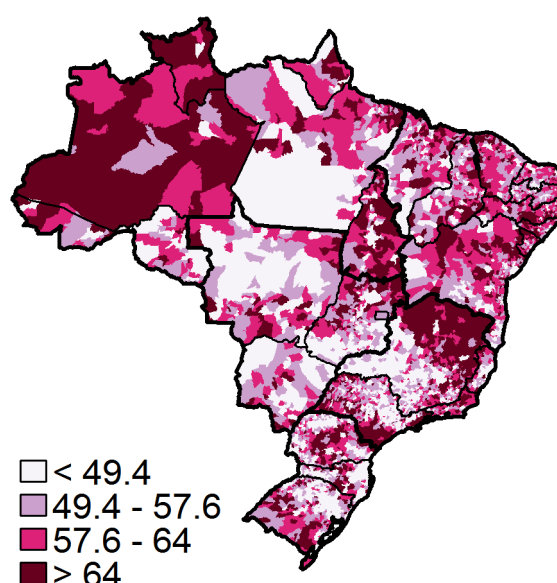
Both indicators are calculated by the same procedure, but the level of aggregation used for the basis for the comparison of municipalities changes from the national to the state average. The two maps are not completely different from each other, but the accent of the second is put on the variations observed inside each state. This change is responsible for a dramatic displacement on the perspective towards the light and dark zones that compose all parts separately of the poverty map.

**Map 3: Relative Poverty, 2010 (%)**

**(a) Relative to Average National Income**



**(b) Relative to Average Income in Each State**



Source: IBGE, Demographic Census (2010).

While in the first map (3a) the national average captures the deep territorial division between north and south, the second one (3b) emphasizes the existing inequality inside states. This procedure helps to displace the focus from the federal government, usually held responsible for anti-poverty and development measures, to states. When the latter are considered, one can verify that even the richest states (such as São Paulo and Minas Gerais) are marked by extreme spatial clustering of poverty.

This brings into question the role of governmental agencies at the state level on fighting poverty. What are the measures adopted by them to reduce poverty in their own states? Are they aware of these differences? How they could act in order to reduce such territorial disparities? And, above all, why are some states more spatially segregated than others?

### 2.3. Scaling Down and Changes in the Semantics of Concepts

The adoption of a different scale of analysis does not impact only on the results of the indicators used. It also transforms the meaning of concepts used and their applicability. We tend to consider that one term can be applied universally to any level of analysis without the requirement of a rigorous revision or the reinterpretation of its meaning. Although classic methodological texts, such as the article by Giovanni Sartori (1970) on conceptual stretching, mention the use (and abuse) of concepts emphasizing the progressive reduction in precision caused by the adjective or abstract use of those terms, there has been little said in relation to how changes in scale affect the meaning and applicability of concepts. In a certain way, the application of concepts generated using observations tailored for one scale of analysis to another also constitutes a particular form of conceptual stretching. Its specific mode of manifestation is the supposition that characteristics and behaviors of a social phenomenon (or the discursive universe) do not vary according to the scale or the level of analysis employed. Therefore, it assumes that all concepts are universally applicable independently the scale used (Wedemeijer 1999). In some cases, such as urbanization, for instance, this could be the case, but this is absolutely not the case for all concepts.

Tina Hilgers (2011), in an article examining the changes in the concept of clientelism across levels of analysis, emphasizes that conceptual stretching is not only related to the extension of meaning by reducing its difference to neighboring terms. One central aspect that affects concept formation (or deformation, in her words) is the metaphorical use of terms suited for one level of analysis (micro, meso or macro) in another.

This change in meaning can also be perceived in some terms such as the concept of elite. Is it possible to consider that national elites present the same characteristics as those from a small town? Few social scientists hardly would confound these two social groups. It almost a consensus among researchers (and members of this elite) that the national elite in Latin America is composed of higher public officials, large shareholders and management bodies of big corporations (national and international), union leaders, artists and intellectuals, and church leaders. In the second case, the power group can be formed by large landowners, local politicians, small shopkeepers, leaders from neighborhood associations, religious leaders, teachers, judges, paramilitaries, rebel groups, organized crime bosses, etc. Although in both cases the elite can be defined by those members of the community that possess some capacity for decision and influence, their actual composition and the level (or scale) of their power is extremely different.



In other occasions, the change in the meaning of concepts is not so easily perceived, at least at a first glance. In these situations, the subnational method can help to enhance concepts and refine measures in a more salient way. One example is the term size of government. The economic literature measures this concept by the division of total public revenues (or expenditures) by the gross domestic product (GDP). Basically, it reflects the degree and strength of the state vis-à-vis the market in providing services to the citizens. Countries with strong welfare states and more egalitarian societies usually have higher levels of state participation in the economy; in affluent democracies, this can exceed 30% of GDP.

The main suppositions behind the concept of size of government are: (1) GDP is divided between just two actors: state and market, and there are no further actors; (2) this is a zero sum game (the only way of obtaining resources by the state is taxation); and (3) the state depends on production (public or private) to generate resources in order to provide public goods and services.

Nevertheless, using the same indicator at the local level, it can be observed that those municipalities with larger government sizes correspond to poor, economically depressed communities and are themselves highly dependent on intergovernmental transfers. This phenomenon is explained mostly by the inapplicability of two assumptions of the central concept. Firstly, in the subnational level there is no zero-sum game between the state and the market, given that the localities can receive resources from other levels of government, which can act much like international donors in neopatrimonial states (Cammack et al. 2007).

This leads to the second conceptual problem with the concept of the size of government when moving to a different level of observation. The assumption that the private economy produces and the state extracts taxes and redistributes becomes more difficult to apply at the subnational level because subnational depressed economies can be highly dependent themselves on public resources transferred to the local government by their regional or national counterparts. In this scenario, local economic actors become themselves clients of the local branch of the state. Public employment will likely be the main source of formal labor, small shopkeepers will provide services and goods to the local government and its civil servants, and small companies will be dependent on public contracts.

Therefore, the concept of size of government, in the subnational context, could not be usefully employed to measure the relative size of the state in relation to the market, once the relationship between these two actors became more complex and even

the state itself has become diversified into two or more parts that interact (in many occasions in a very conflictive way).

#### **2.4. Spatial Heterogeneity: Changes in Causality Across Space**

Another established debate in geography but still in its inception in political science is the spatial heterogeneity (Anselin and Cho 2002). This concept can be formulated as the change in the intensity or direction of association between phenomena depending on where they are located, i.e., on the territorial context in which they occur (Fotheringham, Brunson, and Charlton 2007: 240–2).

Most analyses assume that an association between two events or processes will present the same intensity and direction for all cases, despite where they are located or the contextual elements that could be affecting them. In many cases, these assumptions are valid and useful, but sometimes they can confound and obscure significant relationships. In some occasions, the variation of the intensity of association can be treated statistically, such as the issue of heteroskedasticity. Nonetheless, the major problem comes when the actual direction of causality itself changes according to the context.

We can illustrate this problem with the relation between percentage of labor force employed in agriculture and public expenditure in health care in Brazil. Both the South and the Northeast regions of the country show relatively high levels of their labor force and economy dedicated to agriculture. Nonetheless, their shared characteristics end here. The former is deeply integrated into national and international commodity markets and its agrarian production depends on technology, and skilled labor. The latter, on the other hand, is marked by traditional subsistence farming by peasants with low levels of productivity and almost no integration into markets.

When a simple correlation measure is computed for the association between employment in agriculture and healthcare expenditure in Brazilian municipalities the result is negative and significant ( $r = -0.110$ ). Nevertheless, when the same statistic is computed considering the localities belonging to each region separately, it can be observed that about the same association and intensity holds for the Northeast ( $r = -0.118$ ), but it changes in both direction and intensity for the South ( $r = 0.250$ ).

This ordinary example is sufficient to illustrate how aggregate or summary measures can induce mistaken interpretations on how causal processes occur and which factors play a role in producing different outcomes in terms of public policy provision (Rose

1973: 1167). Once the data is disaggregated and analyzed for each region separately, it becomes clear that it is not agriculture itself that affects the levels of expenditure in healthcare, but a specific type of agriculture (traditional subsistence farming in opposition to agribusiness) performed in depressed regional economies that serves to explain the variations in social policy expenditure.

### **3. The Localization of Needs: Socioeconomic Drivers of Demand Formation**

This section will examine the connection between economy, demography and political institutions in producing spatial inequalities in social policies demand at the subnational scale. How can the spatial concentration of population and economic production affect the provision for social services in the subnational context? On the other hand, how do the subnational economic and demographic profiles interact with political institutions in order to alter social demands for social policy implementation?

It is widely recognized that factors such as population density, gender and ethnic composition, immigration, and other demographic indicators are not territorially evenly distributed (Voss 2007). On the other hand, economic geography has emphasized the role of both territorial specialization of production – industrial districts and location, or the selective investments in infrastructure – and flows – international trade, investment flows, the diffusion of ideas and technology, or commodity chains – in order to generate spatially uneven economic development (Smith 1990; Porter 1991; Harvey 2005; Krugman 1991; Marshall 1919).

Nonetheless, little has been said about how these two interconnected elements – demography and economy – shape subnational contexts and help to engender different patterns of demands for social policies. Specific kinds of urbanization, exposure to environmental and social risks, high labor market informality, migration, poverty, all contribute to define specific socioeconomic circumstances or contexts that inevitably are transformed into different kinds of demands towards public institutions and for policies (Entwisle 2007).

Besides, it not hard to accept that cities or regions characterized by industries and services, highly dense populations and a formal labor markets with significant levels of female participation will demand higher levels of coverage in social security schemes and institutions for child care and care for the elderly. On the other hand, rural areas, marked by lower levels of labor formalization (or not yet even commodified labor), high

poverty and fertility rates will demand non-contributory pensions, social assistance measures, basic education, and a lesser degree of child and elder care.

In this section, we will examine the uneven spatial distribution of socioeconomic variables in Brazil and their interaction in order to demonstrate how these elements can impact on the formation of territorially differentiated patterns of demand. The aim is to draw a clear picture of how social demands for social policies are constructed contextually and, therefore, need to be perceived in their spatial dimensions.

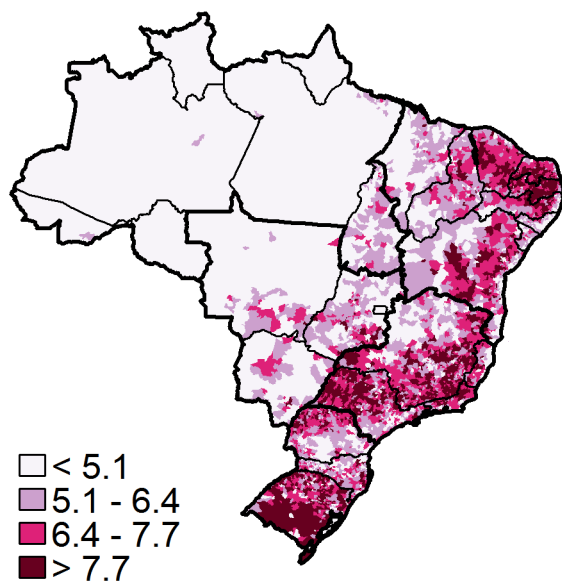
For this purpose, the case of social security in Brazil will be analyzed. Its centralized norms, financing, and administrative structure makes this policy an excellent example of how a nationally controlled policy can vary significantly in its implementation according to different socioeconomic contexts across space. In particular, the population aged 65 years or more and labor market informality, measured as the percentage of people working outside the formal labor market, will be examined in relation to their impact on the spatial pattern of benefits in terms of: (1) total coverage; (2) urban sector pensions; and (3) average value of benefits.

Both the proportion of people aged 65 years or more and labor market informality impact on the level of resources required to sustain pensions and other programs locally. Nonetheless, informality also has a decisive role on the type of benefits that citizens will be entitled in the future. The higher the informal sector in the overall economy, the less workers will be able to contribute to social security and, therefore, the fewer their possibilities to receive a good pension in the future. The basic idea underlined here is that even the most centralized public policy can demonstrate high levels of spatial heterogeneity in its implementation.

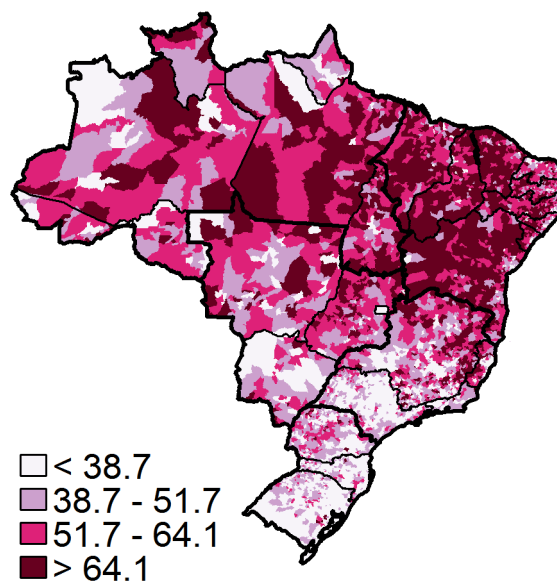
The analysis of the spatial distribution of both aged people and informality reveals the presence of strong territorial clustering (Map 4). In the case of the former (Map 4a), the highest concentration is located in the eastern part of the country, in the zone that covers from the Northeast region to the South. Informality (Map 4b), on the other hand, is mostly concentrated in the North and Northeast (with some small clusters in the South).

**Map 4: Old-Age Population and Labor Informality, 2010**

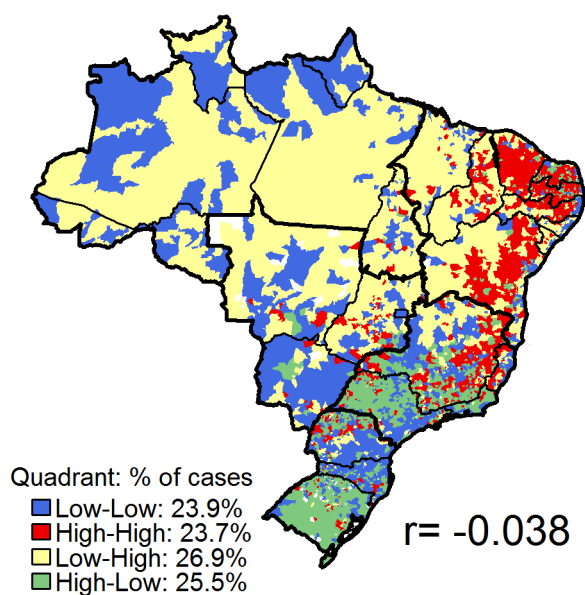
**(a) Pop. 65+ Years (%)**



**(b) Informality (%)**



**(c) Interaction (low/high for a and b)**



Source: IBGE, Demographic Census (2010).

These indicators suggest that social security benefits will not be evenly distributed in Brazilian territory either in their total coverage or the type of benefits granted. More than that, the potential variation in the distribution of contributory and non-contributory

benefits becomes visible when these two indicators are combined in the quadrant map of their interaction (Map 4c).

A quadrant map is an exploratory analysis method that enables to visualize the association of two variables in space. Basically, it divides the cases into four quadrants, whose limits or frontiers are established by the mean of each variable (exactly like in a scatterplot) and map the cases according to each quadrant they belong. Areas in which high values coincide are plotted as red, low values in blue, and the other as beige (low-high) and green (high-low).

Map 4c presents some interesting results concerning the relationship between percentage of the population aged 65 years or more and labor market informality. Although there is no significant correlation between these two variables ( $r=-0.004$ ) when the aggregate association is considered territorially at the locality level, significant spatial clustering can be observed and particularly two have a pronounced potential impact on demands.

The first cluster is formed by the zone mapped in red (high percentage of aged people and high levels of informality) and could indicate higher pressures for non-contributory pensions. The second one, colored with green (high percentage of aged population and low levels of informality) would suggest higher levels of contribution and, therefore, greater demand for contributory retirements. In the rest of the country, there is a significantly lower proportion of aged people and this means that at the present this is not an immediate problem (although this does not mean that it will not become a problem in the future).

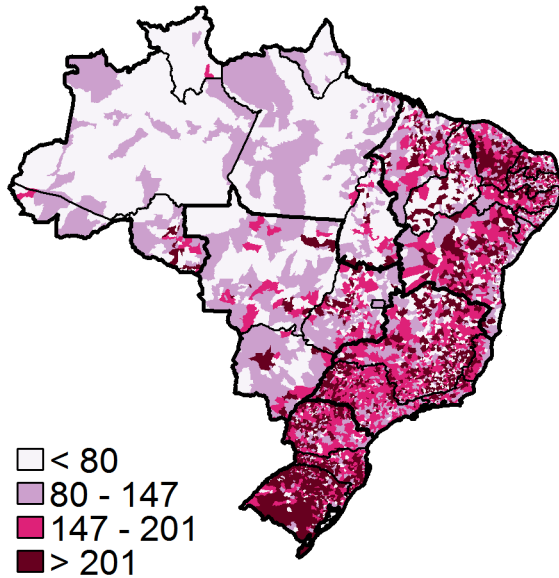
When these indicators are compared to social policy coverage – number, type (urban or rural), and mean value of benefits – the relationship between socioeconomic characteristics and policy outcome is easily perceived (Map 5). The spatial coincidence between aged population and the total amount of benefits (Maps 4a and 5a) is significantly pronounced.

These similarities in the spatial patterns confirm a significant association between space, demographic structure and social policy coverage. Nevertheless, the most interesting point to stress here is the fact that even national policies with uniform rules applicable to all national territory uniformly are subject to changes depending on contextual factors and, in combination with other policies and socioeconomic characteristics can help to reproduce territorial patterns of inequality. The question, thus, is not that the implementation of centralized policies can be contextual, but how this contextualization

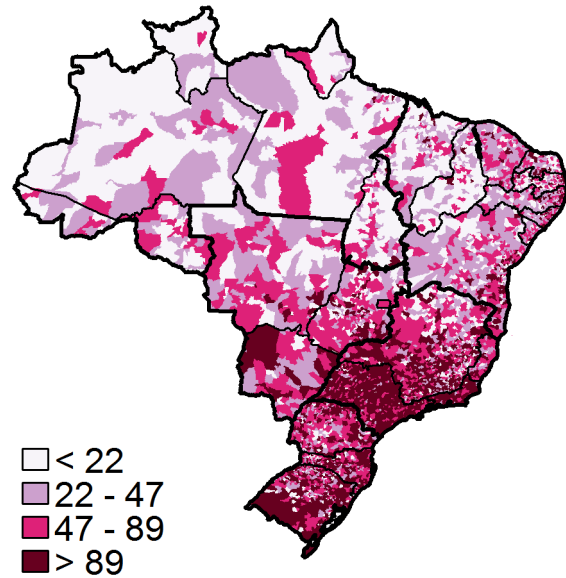
of policies can reinforce inequality by creating territorially selective patterns of public policy provision.

**Map 5: Social Security Benefits, 2011**

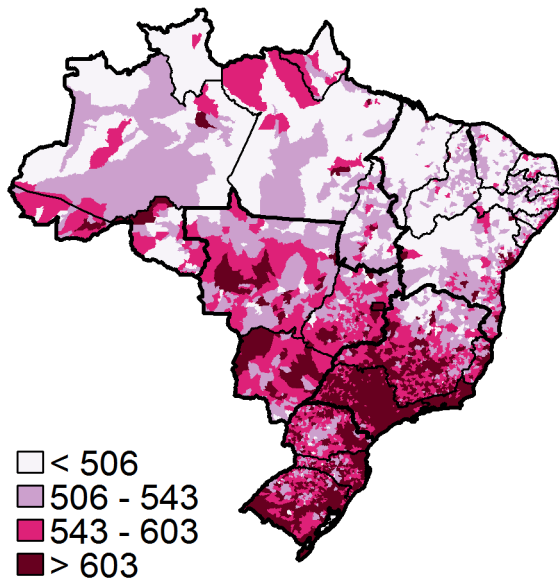
**(a) Total Benefits (per 1,000 inhabitants)**



**(b) Urban Benefits (per 1,000 inhabitants)**



**(c) Mean Value (R\$ per month)**



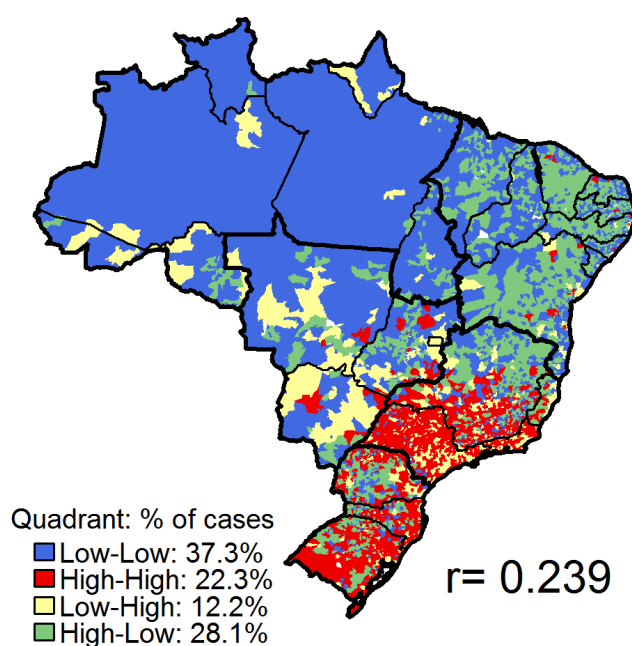
Source: Brazilian Ministry for Social Security (MPREV, 2011).

The analysis of the type of benefits can help to understand which sectors of the workforce are covered by what kind of social security scheme. The Brazilian pension system presents basically two major patterns: (1) urban, based and mostly directed towards industrial and service workers (and mostly contributory); and (2) rural, in part contributory, but largely non-contributory, with the amount of benefits barely exceeding minimum monthly salary.

When the urban benefits are considered, a concentration in the Center-South region can be observed (Map 5b). This area is characterized by higher levels of urbanization and lower informality in labor relations. Concerning social security benefits, this means that this area allows higher levels of contributions from industrial and service workers and permits the benefits to be both higher and more stratified than those in rural areas.

The spatial variation in terms of the mean value of benefits can be observed in the regional divide between North and South (Map 5c). The rural-urban divide can be verified by the fact that, in the North, most municipalities have averages below one minimum monthly salary (R\$545 or US\$336 in December 2011) while in the South many localities have benefits higher than this value. This divide is due to the combination of two aspects: the high informality, which reduces the weight of contributory workers in the overall result; and an elevated participation of agriculture in the labor force, with the predominance of rural benefits over the urban. The results, expressed as the interaction between total coverage and mean value of benefits, can be found in Map 6.

**Map 6: Social Security Coverage vs. Average Benefit Value, 2011**



Source: MPREV (2011).



The spatial distribution of clusters shows that there are three major territorial profiles in terms of social security provision. The first is marked by the large area on the North with low coverage and benefit values below average (low-low). The second cluster has high values in both indicators and is concentrated in the South and part of the Southeast regions. Finally, the third cluster in the Northeast has high relative coverage but a low value of pensions.

This analysis of the Brazilian social security benefits is just one illustration of how both demographic and economic uneven geographical distribution can affect labor market structure and, consequently, the allocation of benefits and resources to social policies in the subnational scale. If the results on Map 6 are compared with those on Map 4, it becomes clear that there is an affinity between the spatial distribution of older population, informality, and the association between social security coverage and average value of benefits. Above all, these spatial patterns reveal different profiles in terms of the quality of protection provided to citizens.

The choice of using social security as an example was due to the fact that it is an extreme case of a centralized social policy whose implementation is affected by the socioeconomic context. This effect can also be expected in other social policies whose design or delivery is more decentralized, such as education and health care. Nonetheless, in these last policies the variations in subnational state capability and institutions play, perhaps, a more fundamental role in shaping provision. This is precisely the subject of the next section.

#### **4. The Spatial Specialization of Provision: Institutional Constraints to Equality**

Although the socioeconomic context has a significant effect on the shaping of spatial patterns of social policy provision, the state structure itself also can influence in a great extent the territorial variability of public services and goods. The degree of political or administrative decentralization, mechanisms of revenue sharing, the nature of intergovernmental relations (conflict, cooperation, competition), or the level of administrative professionalization of civil servants constitute elements likely to affect the variability in the kind, quality and intensity of state intervention within countries (Obinger, Leibfried, and Castles 2005; Paddison 1983; Beramendi 2007; McEwen and Moreno 2005; Rodden 2005).

Given that the previous section described how socioeconomic and demographic aspects can impact on how policies are delivered, this part of the work examines how

political institutions themselves are able to generate unequal outcomes in terms of institutional performance and public policy delivery. The binary divide between federal and unitary, although useful to understand the political relations between subnational actors and the national government and the logic behind political party systems, is not sufficient to explain how the state structure can present itself as an actor creating and reproducing multiple inequalities.

Both federal and unitary systems are subject to variations in social policy caused by institutional factors related to the administrative structure of the state and how subnational units organize and implement the delivery of services for citizens (Curtis 1989; Cole 2005: 200; Gallego, Gomà, and Subirats 2005; Loughlin, Hendriks, and Lidström 2010). These institutional elements can be represented by the degree of administrative decentralization, the revenue sharing system, or the professionalization of civil servants. All these factors impact on the capacity of the subnational state to respond to local demands for social services and, above all, are shared by both federal and unitary countries. Therefore, the analysis of social policies at the subnational level should be complemented by the analysis of the subnational variation in institutional capacity; something that combined with other elements generates different patterns of social policy provision.

The mechanisms of financing, organization, and service provision of social policies can be more or less decentralized and involve a different number of public and private actors in their implementation. This phenomenon gives room for the autonomous initiative of subnational governments and civil society and leads to new forms of heterogeneity in public policies outcomes. On the other hand, institutions can also help to reduce inequalities, promoting fiscal equalization, public investment destined to develop economic depressed regions, or the employment of socioeconomic criteria in order to allocate resources to subnational governments.

Resources and institutional arrangements can also create the setting for the actions of different political groups. For example, when a public policy is decentralized, it opens room for new conditions and incentive structures to agents that gain new space to innovate or exert brokerage over political resources.

In the case of decentralized social policies, for instance, intermediate level agencies (such as states in Brazil) with shared responsibilities in the provision of social policies can choose among three main alternatives, each one leading to different arrangements in terms of policy implementation and outcomes: (1) delegate all the responsibilities to local governments by transferring all resources to municipalities and assuming no role

in policy implementation; (2) concentrate all capacity by executing all expenditure and not sharing any resource with lower levels; and (3) regulate and supervise, transferring great part of the resources, but maintaining a supervisory role in order to guarantee the achievement of minimal standards (Boekle-Giuffrida 2012).

The same can be said about the design of public policies. A legal universality of entitlement does not necessarily guarantee equality either in expenditure or in coverage (Powell and Barrientos 2004; Huber et al. 2006; Martínez Franzoni 2008), especially when the territorial variation in policy provision is considered (Rodrigues-Silveira 2011; 2012). The interaction of subnational state capacity, economic and demographic structure and policy design can generate new forms of inequality (Obinger, Leibfried, and Castles 2005; McEwen and Moreno 2005; Armingeon, Bertozzi, and Bonoli 2004; Beramendi 2007; Powell and Boyne 2001).

The purpose of the present section is to demonstrate how aspects of policy design – such as the degree of decentralization and the mechanism of financing – and institutional capability – measured as the levels of fiscal resources – can generate new forms of inequality in terms of social policy provision at the subnational level. Basic education in Brazil (both primary and secondary) will serve as an example to examine these relationships.

Brazil is a three-tiered federal system with the national, state, and local governments being granted sovereign power over the citizens by the 1988 Constitution. This degree of power decentralization was accompanied with greater transference of competences and resources from above to subnational institutions in terms of social policy provision (Dickovick 2011). Although most policies are not exclusively under the control of one level of government, states and local governments became the main responsible for providing education, health care and other key policies.

In the case of basic education and health, the role of the Union was to regulate, supervise, and fund part of the costs, as well as to defining the general guidelines to policy implementation. Although states and local governments bear the main responsibility for provision, the role of the national government should not be understated. It defines the level of resources to be allocated to each policy and, in the case of education, it establishes detailed rules for expending the stamped resources. The federal government is also accountable for supervising and punishing those who do not comply with the legislation. In sum, the Union keeps enough power to force a significant number of municipalities and states to comply with its policy orientations.

Until 1988, the states had the primary responsibility for both health care and education. Municipalities had neither the legal competence nor sufficient resources to provide these services by themselves. The subnational variation in social policy provision was explained mostly by the different states capacities to collect taxes, design and finance their own initiatives. This situation helped to create different institutional legacies which today constitute another layer that interacts with municipal policies and reproduce old regional inequalities.

The basic education policy, on the other hand, serves as an excellent illustration on how a formally universal social policy can become territorially selective in its implementation. Since the 1988 Constitution, this policy became a “universal right and state’s duty” (Brasil 1988: 205). The law clearly establishes that all children in school age must be enrolled and attend school regularly. Traditionally, states were responsible for providing basic education to their citizens, but, since 1988, this competence was shared with municipalities for primary education, while states were made exclusively accountable for secondary schooling.

Although the provision was decentralized and part of the services shared between states and municipalities, the funding of education is based on a fund-to-fund system in which all levels of governments must contribute with fixed shares of their budgets (10% for the national government, 25% for the states, and 25% for the municipalities according to the Constitution). Nevertheless, this collaborative funding system generated further inequalities due to the role of the decentralization to states of one of the most important taxes: the value added tax (VAT).

Those states with buoyant economies will be able to collect higher amounts of VAT and, therefore, to expend and transfer part of these resources to education. Consequently, municipalities situated in more affluent states will receive more per capita transfers than their counterparts in poorer regions. The same logic applies within states, between rich (usually larger) and poor communities. In the end, the funding mechanism itself becomes one of the fundamental elements contributing to the spatial variation in education provision in Brazil.

In order to demonstrate how these institutional configurations act upon education policies in reproducing previous inequalities and generating new ones, the first step will be to describe the variation the following aspects to understand how the following institutional factors can produce different provision in space: (1) fiscal capacity; (2) expenditure in education of states and local governments; and (3) the population covered by the policy.

The distribution of total revenues reveals a significant regional concentration in terms of fiscal capacity of local governments (Map 7a). There is a divide between municipalities located in the Center-South of the country, with higher fiscal capacity, and those from the North and Northeast, with relatively less resources. This difference in terms of revenues, as will be demonstrated below, constitutes the major explanation on why a legally universal social policy nevertheless is implemented unequally or “selectively” in terms of territorial coverage and expenditure.

Federal transfers (Map 7b) alone cannot be blamed for this difference in resource allocation. Excluding some states from the North region, which receive a particularly high amount of transfers to state governments due to their legislative overrepresentation (Gibson, Calvo, and Falletti 2004; Díaz-Cayeros 2006), federal transfers seem to have a significant equalizing effect on local fiscal capacity (Arretche 2010). This can be verified by the spatial distribution of resources, shown in Map 7b, which does not show a clear concentration in some states or regions.

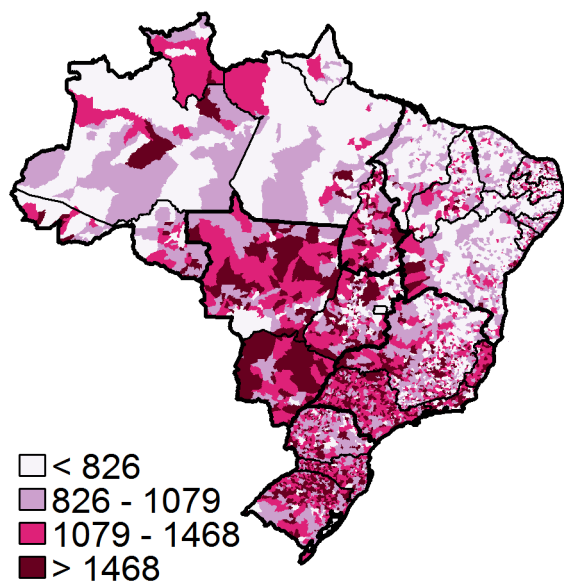
Notwithstanding, the subnational fiscal surplus seems to be decisive in order to explain the differences in terms of fiscal capacity of municipalities (Map 7c). The subnational surplus corresponds to the sum of per capita local tax revenues and state level transfers. This variable indicates how much more money each local government receives due to its own fiscal capacity and for its membership in a particular state. It can also be thought as a locational bonus, i.e., the premium received by being located in a more privileged area (in terms of resources and transfers).

When this last indicator is analyzed, it becomes clear that the fiscal autonomy of both local and states governments contribute to generate inequality in the distribution of resources among governmental units. Here, the regional concentration in terms of economic activity is mirrored in the amount of revenues for each municipality available to provide services and goods to its citizens.

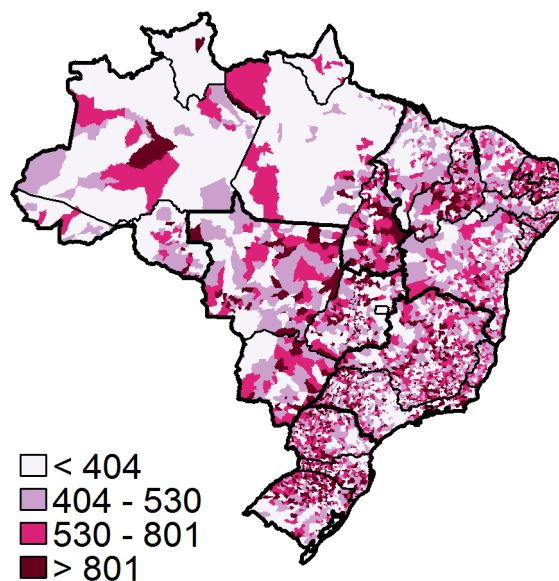
Decentralization of both fiscal resources and of provision alters the allocation of benefits and expenditure according to the combined fiscal capacity of subnational units (local and states). The main consequence of this phenomenon is that institutional and legal factors that regulate the allocation of resources between levels of government can exert an important role in shaping territorial inequalities in policy provision (Rodrigues-Silveira 2011).

**Map 7: Fiscal Capacity of Local Governments (R\$ per capita), 2008**

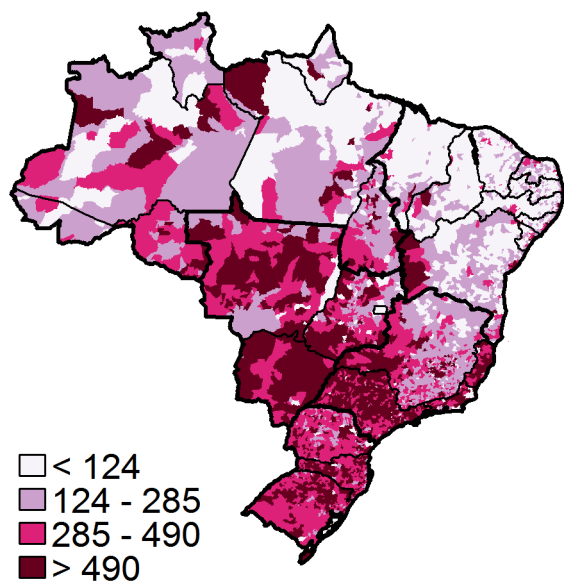
**(a) Total Revenues**



**(b) Federal Transfers**



**(c) Subnational Surplus**



Source: Secretaria do Tesouro Nacional STN, Public Finances of Municipalities FINBRA (2008).

What are the main consequences of this inequality in fiscal capacity to education? The first thing to do before answering this question is to explore the spatial concentration of the potential beneficiaries of this policy. In the previous section it was demonstrated how the demographic structure can alter the distribution of benefits when social policies are national and centrally organized.

When we return to Map 1a, it reveals a concentration of school-age children (from 7 to 17 years old) in the North and Northeast regions of the country. As was presented before, these regions are predominantly rural and characterized by high levels of poverty (Maps 2 and 3). In a hypothetical scenario of perfect equality, where all children had equal rights for education, there should be no spatial concentration of per enrolled child expenditure. In this situation, public institutions should be capable of expending the same amount of money in each child regardless his/her place of residence.

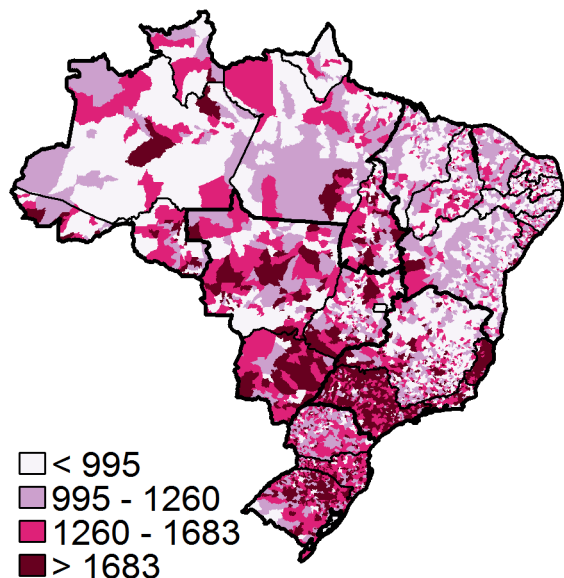
When the real data on expenditure is analyzed, though, a different picture emerges (Map 8). Both states and municipalities located in the Center-South of the country expend relatively more per enrolled child than those belonging to the North and Northeast of Brazil. The contrast between a hypothetical perfect equality situation and the actual outcomes are particularly useful to reveal how the action of institutional settings generates inequality in terms of the results obtained.

The municipalities from Southeast and South expend relatively more than those situated in other regions (Map 8a). The situation changes a little bit when the state-level expenditure is considered (Map 8b). Some states in the North are overrepresented in the national legislature and as a result receive more transfers from the federal government. The reason why they expend relatively more on education than other poor states (and their own municipalities) is explained by the constitutional mandate that force states to apply at least 20% of their budgets in education, once some of the block grants received are channeled to education by law.

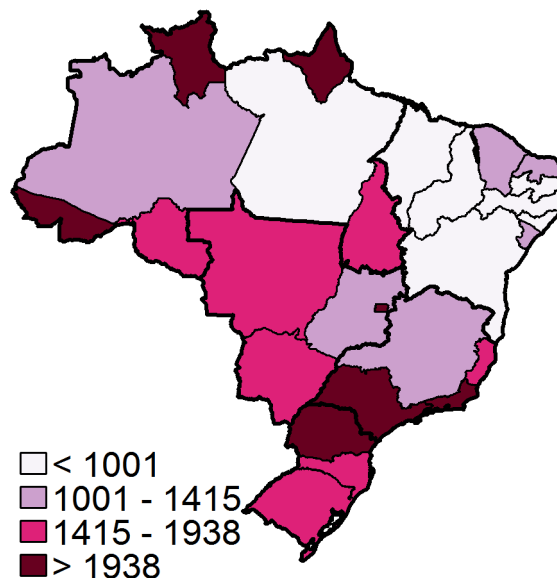
The sum of local and state-level expenditures (Map 8c) shows a similar pattern. In particular, it is important to stress that the regional concentration of expenditure is different from the spatial concentration of the school age population. This leads to the first evidence on how institutional settings can promote unequal outcomes in policy provision.

**Map 8: Expenditure in Education, 2008**  
 (R\$ per enrolled child and level of government)

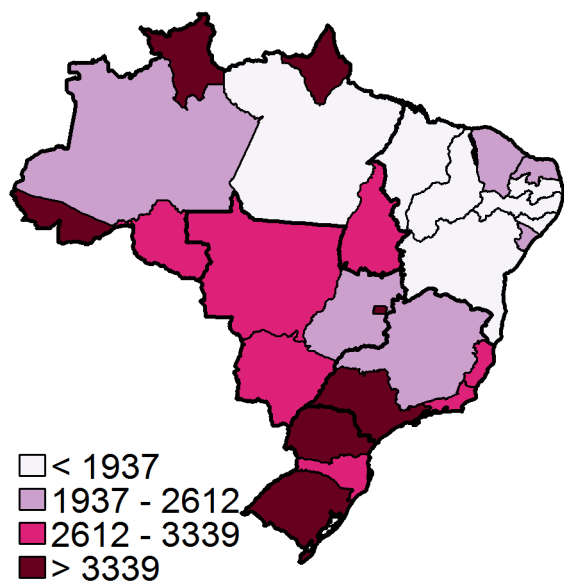
**(a) Municipalities**



**(b) States**



**(c) States and Municipalities**



Source: STN, Public Finances of States and Municipalities (2008).



The data on coverage, moreover, reinforces these findings, although with some important differences. Firstly, the Northeast and Center-West region are those with higher levels of coverage in primary education (Map 9a). This spatial distribution corresponds partly to the target population since it covers the Northeast, but the North still present lower levels of coverage.

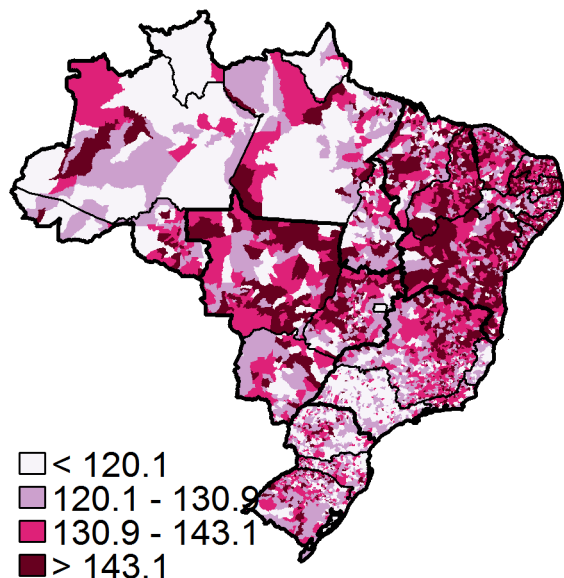
If enrollment in primary education under the responsibility of states is considered (Map 9b), the North-South divide reappears. While in the states of Northeast and Para in the North, enrollment in primary schools is a task exclusive performed by local governments, in the other states, and especially in the Southeast and South this burden is shared in a great extent with the states governments.

In part this regional concentration is due to the existence of institutional legacies of previous state level educational systems (primary and secondary schools and other educational support institutions). Besides, this spatial pattern is coherent with the one relative to fiscal capacity, which reinforces the argument of influence of fiscal and other institutional factors on the provision of social policies.

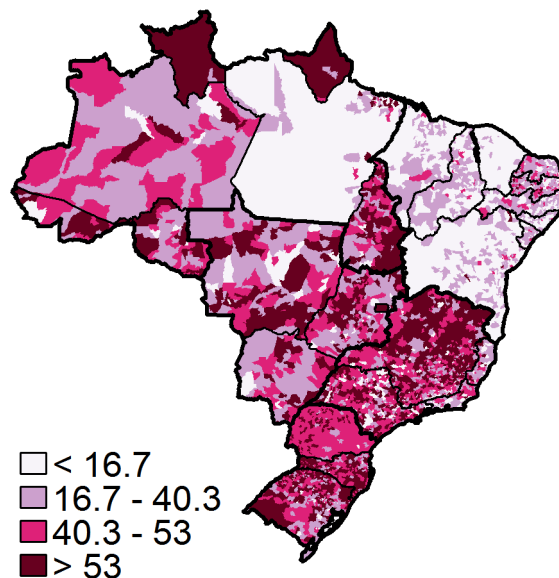
Finally, when the secondary education is analyzed, a more prominent role of Southern regions is observed (Map 9c). This is mostly due to the fact that states are the responsible for the provision of this level of schooling. Nonetheless, there is a difference between coverage and expenditure, especially in some states on the North. This reveals that, in these states, the main focus is deposited in the primary instead of secondary education. The analysis of the relation between fiscal capacity and basic education constitutes just one example on how decentralized social policies, even when they possess universal coverage by design, can present unequal levels of both expenditure and coverage. In this paper, other differences such as the quality of teachers' training, the average performance of children in quality assessment tests are not included. Nevertheless, they also seem to vary territorially in the same way expenditure and coverage.

**Map 9: Coverage by Level of Schooling, 2006**

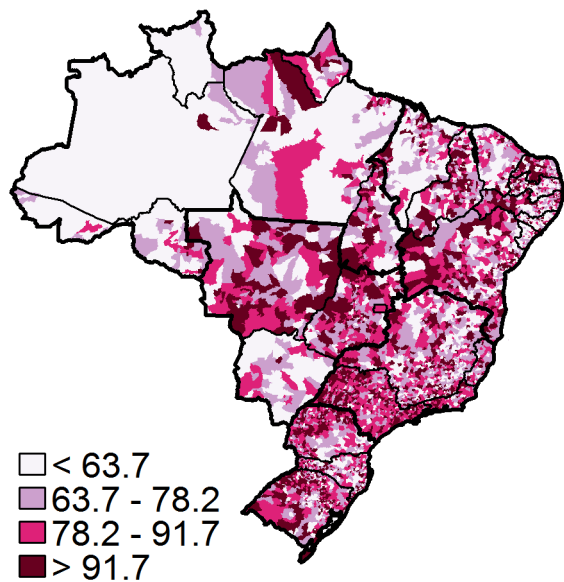
**(a) % Age 7-14 Covered**



**(b) % Age 7-14 in State Governed Schools**



**(c) % Age 15-17 Covered**



Source: Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP), Basic Education Census (2006).

## 5. Concluding Remarks

This essay is an attempt to systematize some central elements that constitute the basis for understanding the relationship between politics and inequality at the subnational level. In the first part, the main focus was put on explaining the methodological aspects that make possible the subnational variation in political institutions and, particularly, in social policy provision.

Some important insights from geography were mentioned as having great potential impact on political analysis due to their capacity to conceptualize and treat empirically social and political realities departing from different scales or levels of analysis. The first makes it necessary to understand how institutionally unbounded processes can help to enhance the knowledge on how social and economic processes, in many occasions, fail to be addressed solely by formal political or administrative divisions. The second stressed the ways in which changes in the scale or level of the analysis actually alter the empirical results and the levels of government in focus. The third idea is related to the former and illustrates how concepts themselves can have their meaning transformed by the change in scale. Finally, the fourth reasserted the limitations of aggregated measures to identify changes in causality across space.

These methodological contributions, when applied to the analysis of concrete cases, provide new lenses to understand processes of inequality production and reproduction. The second and third sections constituted the application of the subnational method to social policy provision, using Brazil as a case study. In the former, the method was used to demonstrate how economic and demographic characteristics alter the implementation of public policies and, therefore, generating inequalities of access to welfare. The third, on the other hand, highlighted how the combination of institutional fiscal capacity and the policy design of multiple levels can help to create different outcomes in terms of the territorial coverage of public services, even within regions or states.

In sum, the important message to be highlighted here is that social policy implementation is a complex phenomenon that requires a good understanding of how subnational politics and institutions will work, in order to avoid the generation or reproduction of inequalities across space. The subnational method can serve as a powerful tool – combined with traditional institutional approaches – to describe and understand complex processes of policy variation and inequality reproduction within countries.

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