Decentralization Reforms under Review: the roles of central and local governments in the provision of collective welfare*

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Abstract:
The field of decentralization studies has undergone many reviews since the most simplistic proposition of transferring "local matters to local hands". For some scholars (and governments), it seems now clear that decentralization does not mean to "eliminate" central governments from local matters, quite on the contrary: their role in the institutional design of reforms is crucial, for example, by guaranteeing minimal national standards on service delivery or compensating territorial inequalities. This movement towards "centralization", however, may present a potential drawback to decentralization theories as it diminishes the level of decision-making autonomy of local governments, a key reason to decentralize. If central governments are in fact centralizing the bulk of decision-making power, then what can local governments actually decide and do? Do their creative or innovative local policies make any difference in a scenario of high levels of central government regulation? The recent development of education policy in Brazil illustrates this point. It emerged in the context of a widely supported decentralization agenda during transition to democracy but has been subjected to a series of national regulations by different governments since the mid-1990s. As improvements in this policy area start to emerge, the main question becomes: are these results explained by what local governments did or by federal regulation?

Introduction

Many are the arguments highlighting the positive effects of decentralization reforms: a political channel in ethnically divided societies, an instrument of democratization and participation, increased government responsiveness, improved provision of public services, bringing local communities closer to governments to quote only a few.

Some studies show that decentralization reforms were associated with improved public services, including universal ones, especially in developing countries (for a summary of existing studies, see SHAH, THOMPSON, & ZOU, 2004). FAGUET & SÁNCHEZ (2008), for example, find considerable improvement in some social and urban infrastructure policies in Colombia and Bolivia after decentralization reforms. In Bolivia's case, political and fiscal decentralization would have allowed localities previously completely deprived of revenues to expand education services (FAGUET & SÁNCHEZ, 2008, pp. 1300-1). Essentially, if one departs from the main propositions in the field of decentralization studies, these results would be explained by the capacity of subnational governments to readapt and to innovate in terms of local policies.

Access to public education has expanded considerably in Brazil for the last 20 years and it was largely carried out by subnational governments. From approximately 32 million students enrolled in 1991 it reached almost 44 million by 2010, considering only enrolments in public schools run by states or municipal governments. Similarly, education performance of students in public schools has shown signs of improvements in recent years, although still far from the minimal adequate levels of learning. At first sight, these results might suggest that the option of "leaving local matters to local hands" – proposing a causal relation between decentralization and improved government performance – seem to explain the transformations in the Brazilian educational system. However, a closer analytical look shows that the period under consideration is also characterized by an intense role of the federal government, since at least the mid-1990s, and, moreover, independently of the party holding the presidential office. In this sense, although local matters are still important to understand micro-variations, the Brazilian case is an example of decentralization with a strong hand of the central government.

The main question guiding this paper is whether this advances could be attributed sonly to decentralization or national policies carried out by the federal government have also to be considered. Although I do not fully answer this question, my preliminary results confirm similar findings presented by (ARRETCHE, 2002; ARRETCHE, et al., 2011) and my previous work (GOMES, 2009) that the format of decentralization in education policies in Brazil is characterized by national regulations combined with subnational implementation of public services. This essentially questions the notion that once decision-making authority is fully transferred to local governments, improved public services will be

observed – even if upon certain minimal conditions – as the sonly result of uncoordinated initiatives taken by individual governments. This is not to say that local decisions do not matter. Quite on the contrary, we still want to understand local factors that influence policy outcome but not within a framework that assumes decentralized provision as equivalent to decision-making autonomy (ARRETCHE, et al., 2011) but rather as local challenges to the implementation of policies.

For analytical purposes, I divide the objectives of education policies into two strategies for the last 20 years in Brazil: 1) to expand the educational system in order to guarantee an ample access to public schools and 2) the most recent, which involves improving student's learning abilities or, put simply, the quality of public education. Both strategies involve the role of subnational governments in the provision of education and whilst the participation of states and especially municipal governments suggests at first sight that the expansion of the system was made by autonomous decisions, it is impossible to ignore the centralizing role of the federal government since the mid-1990s to date.

The first objective has shown to be much easier to achieve in the Brazilian case: basically by the creation of fiscal incentives (and constraints) on a per pupil basis, as I will discuss in more detail further on. Studies on the decentralization reforms in Brazil point towards two important institutional features: the 1988 Constitution and the approval of a series of regulations by the federal government, which tried to induce subnational governments to provide public services, especially from the mid-90s onwards (ARRETCHE, 2009; SOUZA, 2006; ALMEIDA, 2005; ABRUCIO, 2006; GOMES, 2009). These studies explored in particular the political determinants of decentralization, on the one hand and, on the other, the effects of policy decentralization on access to services. The analytical advance in the area is notable. The understanding of how the federal government approves nationally coordinated policies introduced the role of political institutions as an explanatory element regarding the limits and scope of action available for actors in subnational levels of government.

On the other hand, the identification of the relevant explanatory conditions that lead to the improvement of education quality does not present an absolute consensus. This is because to improve student's performance is a much more complex issue, involving many actions in many fronts in an environment of competing solutions as well as competing theories. In this sense, a good start to advance knowledge in this field would be to test some of the hypothesis from the literature on decentralization. Besides that – and although there has been important advances made by large N quantitative analysis -, it seems to me that many of the expected causal links - as proposed by the literature on decentralization - would also benefit from a more in-depth knowledge of cases. Based on this assumption, this paper presents a preliminary investigation testing some of the existing propositions in the debate using Qualitative Comparative Analysis (QCA), a method that allows analysis of small number of cases with generalizations. The expectation is that fruitful results from an analysis like this will contribute to the accumulation of knowledge in this field as well as informing new strategies for national coordinated policies.

The paper is divided into three sections. First, I present some evidence that, in the case of Brazil, decentralization of education coincides with improvements in the expansion of state and municipal governments' provision of public education and also a recent improvement in student's performance. The analysis will also point out that this expansion is the product of a series of national rules regulating different aspects of education policies: minimal obligations to spending, what can be accounted as spending on education, definition of responsibilities among the three levels of government and, more recently, a national evaluation of student's performance that is monitored by the federal government and includes targets to be achieved by all Brazilian public schools. The results of student's performance in the case of municipal Brazilian schools show that, despite progress, there is still variation among municipalities. This finding, thus, raises the question of which local factors could explain these varying outcomes. In a preliminary attempt to test the influence of local factors, an empirical test based on theoretical propositions is presented. In order to do so, the second part of the paper briefly overviews some of the propositions in the decentralization debate and extract hypothesis for testing. The third

section shows the results of the exploratory exercise based on the assumption that maybe a combination of causes could explain why some Brazilian municipalities were able to improve student's performance and others have not. Final remarks are an attempt to readdress the main question guiding this paper.

1) Decentralization of Education in Brazil and the Performance of the Educational System

With the exception of higher education, Brazil has had traditionally a decentralized responsibility for education. Since at least the end of the XIX century primary education has been provided by state governments. Therefore, the decentralization process that followed the enactment of the 1988 constitution (at the end of the authoritarian military regime – 1964-1985) was mainly introducing municipalities as also responsible for the provision of education in cooperation with state governments. For some, this was the result of a "municipal campaign" during the constitution-making process that defended the idea that services should be provided by a level of government closer to citizens. The constituent assembly was also marked by the motto "it is time to pay back the social debt" left at the end of the military regime by guaranteeing in the constitution a series of universal social rights. The economic downturn of the 1980s was combined with increasing levels of poverty and inequality as the result of a model of development – carried out by the military regime - that concentrated income at the top levels.

The challenges of education policies in Brazil were still very basic at the beginning of the 1990s: although universal access to primary education was formally guaranteed, in practice a significant amount of the population did not complete the 8 year compulsory schooling (7 to 14 years-old). Besides that, illiteracy levels were still very high relatively to the level of development of the country. For instance, in 1991, 12% of 15 to 19 years-old were still illiterate in Brazil, i.e., they had never attended any schooling at all, a figure that would soar up to an amazing 27% of illiteracy among this age group living in rural areas (IBGE, 1991 Census). In sum, universal access to schooling was the first main challenge of education policies in the aftermath of the transition to democracy. Moreover, as lack of opportunity to study was concentrated on the most socially vulnerable groups of the population, expansion also meant schools receiving a new type of student: from poor families with a significant amount of parents being illiterate themselves.

Although illiteracy levels still considered high in Brazil, it is becoming more associated with older generations that lack of access to education. The preliminary results of the 2010 Census show, for example, that 2.2% of 15 to 19 years-old are still illiterate in Brazil – a considerable reduction from the 1991 figures - while illiteracy rate among the 60 year-old or older is still high: around 26% of this population group. In other words, the last 20 years saw a significant expansion of access to primary education. As we will see in more detail further on, universal access to other levels – nursing/pre-schooling and secondary – are still part of the policy agenda nowadays but concerning specifically primary education the main (and most difficult) challenge is to improve the quality of public education.

Therefore, the 1990s saw a significant expansion of primary schooling (i.e., education for 7 to 14 years-old). As one can see from Table 1, it is only in 2000 that 95% of students in this age group were attending school. Although a significant advance, especially given the fact that in 1980, 20% of this age group was not attending school at all, it is clear that universal access to primary education is a very recent event.

Table 1. Selected Indicators of Access to Education in Brazil (2000-2010)

Age Groups	% attending School in 2000	% attending School in 2010	% of Students Lag Behind* (2000)	Obs: expected level of education in 2000 (considering no lagging)	Level of Government Responsible
0 to 3 years-old	9,4%	23,6%	---	nursing school	Municipal
4 to 6 years-old	61,4%	85,0%	---	pre-schooling and/or first year of primary school	Municipal
7 to 14 years-old	94,5%	96,9%	19,7**	primary school (8 levels/grades)	municipal and states
15 to 17 years-old	77,7%	83,3%	37,9	secondary school (3 levels/grades)	states
18 to 19 years-old	49,3%	45,0%	52,9	last year of some secondary schools or initial years of tertiary education	federal and states
20 to 24 years-old	25,2%	25,1%	64,3	tertiary education	federal and states

Source: Brazilian Demographic Census (2000 and preliminary results for 2010) – IBGE.

* This is an estimate of the proportion of students who – although attending school – are not in the expected level/grade for his/her age. It is a very conservative one as it considers a two-year time lag as within the expected level/grade. So, for example, the expected age for the first year of secondary school is 15 years-old but the estimates considers within the expected level/grade up to the age of 17.

** Estimates calculated only for 10 year-old and above. Before this age, school lagging is relatively small. However, there are sharp differences within this large age group but comparable data with the 2010 results is not available yet.

ARRETCHE (2002) argues that a set of national policies adopted in the 1990s induced states and municipal governments to provide for primary education, but especially the latter. The series of national rules established by the federal government included: a national 10-year plan for education (approved in 1993), legislation on all levels of Education – known as LDB (Guidelines for Education), approved in 1996 – a piece of legislation that details the level of government in the Brazilian federation responsible for the provision of educational services, specifies in detail what can be considered spending on education among other regulating aspects. However, the most important national legislation in the 1990s is known as FUNDEF, enacted during Fernando Henrique Cardoso's first presidential mandate (1995-1998)[1].

FUNDEF was an amendment to the constitution that rose earmarked spending on primary education for states and municipal governments, introduced a redistributive rule that transferred own-tax revenue collected by subnational governments on a per pupil basis as well as introduction of a minimal percentage spending on teachers' wages.

This national legislation is considered by analysts as the most important factor explaining the expansion of educational services by state and municipal governments (ARRETCHE, 2002; ABRUCIO, 2006). And the reason for this is quite simple: the redistribution of revenue was on a per pupil basis, essentially punishing municipal or state governments with few or none public schools with a loss of revenue and, at the same time, creating incentives for the expansion of the public school system. Another effect attributed to FUNDEF is a further decentralization process of primary education: a significant increase of municipal schools and a decrease of state governments' schools – both levels of government are responsible for guaranteeing universal access to primary education (GOMES, 2009). This distribution of responsibilities was also in line with the national Educational Guidelines approved in 1996. In other

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1 The Fund for Primary Education and Teacher's Wage Spending (FUNDEF, in Portuguese) was in force between 1998 and 2006 and stipulated automatic 15% retention of some subnational revenue – including own-tax revenue - that would form a fund in every state. The retained amount was then returned to states and their respective municipalities based on the number of student enrolled in municipal or state-level schools (both co-exist in Brazil). For the purposes of this paper, it is important to say that some state or municipal governments will "contribute" more to the fund (15% retention) than "receive back" – say, for example, because the number of students is small -, producing a loss of revenue. The same can occur in reverse: some governments will "contribute" less to the fund and will "receive" back more, generating a surplus of revenue.

words, both the expansion of primary schools in general and the decentralization process from state to municipal schools were all decisions made by politically autonomous units of governments but this rapid change all over the country cannot be explained without the role of the central government.

In fact, these centralizing policies went as far as moving revenue from one subnational government to another in a very similar unitary State fashion. As the 1988 constitution establishes that at least 25% of subnational governments' revenue has to be spent on education, the bulk of funding for primary schooling is largely dependent on the fiscal capacity of governments. This fact also means that, in terms of direct funding, the federal government has little room to induce a national strategy. In other words, although FUNDEF regulated levels of compulsory spending for states and municipal governments, the bulk of the revenue financing these changes came from own-tax revenue collected by subnational governments – i.e., the amount of revenue from the federal government was minimal. This is a clear example of centralization within decentralization: although politically autonomous, the federal government finds strategies to create strong incentives (and also constrains) for subnational governments to comply with national goals (ARRETCHE, 2002; GOMES, 2009; ARRETCHE, et al., 2011).

However, universal access to all levels of basic education is not complete yet in Brazil. The main national policies since the 2000s have been focused on expanding access before and after primary schooling: nursing, pre-schooling and secondary, respectively. Table 1 shows that between 2000 and 2010 access to these levels of schooling school have advance significantly. In 2000, for example, only 9.4% of 0 to 3 years-old were attending school and this included private schooling. Within 10 years, this figure jumped to 23.6%. According to the national plan of education, the target is to achieve 30%.

Once again, that decade saw a series of national rules, so subnational governments had strong incentives (i.e., norms and revenue incentives) to expand access to these levels of schooling. Among many of the national acts that could exemplify the increasing level of "re-centralization" on education policies in the 2000s are: the expansion of the FUNDEF mechanisms not only to primary school but to all basic education (approved in 2006 and known as FUNDEB, in Portuguese), which also included the definition of a minimal national wage for teachers of public schools (i.e., employees of state and municipal governments), the creation of different national exams evaluating different levels of education, the creation of an Index of Education Performance (IDEB, in Portuguese) that takes places every two years and measures the education performance of virtually all primary schools in the country among many other funding schemes. As one can see, a further strategy of centralization was also adopted in both terms of President Lula (2003-2010). Worth of mention too is the Brazilian National Congress approval of compulsory education from 4 to 17 years-old (previously 6 to 14), in line with the strategy of universal access to other levels of schooling and the widely recognized importance of early-age schooling for future student performance.

As an indication of the transformations that the Brazilian education went through for the last 10 to 20 years, is the fact that universal access to primary education has become much less of an issue than guaranteeing an adequate level of learning. In other words, kids are attending primary school but they do not perform well: the levels of retention are still very high, many of them abandon school and evaluations show a poor performance in the two subjects tested by a national test (Portuguese and Mathematics). As one can see from Table 1 above, the preliminary results of the 2010 Census shows that although 97% of 7-14 years-old are in fact going to school, at least 20% of them are not enrolled in the expected grade for their age, essentially showing learning problems and also problems relating to abandoning school.

The effect of this irregular school trajectory will become clearer later in the student's life: as Table 1 shows, at least 40% of 15 to 17 year-old students in Brazil have a school lag. In the same way, although 45% of 18 to 19 years-old and also 25% of 20 to 24 years-old are going to school, the vast majority of them (52,9% and 64,3%, respectively) are still finishing either primary or secondary school.

The implications of this situation are many: when a student is retained to do another year all over again, the chances of abandoning school is higher and the opportunities to finish secondary education at 17 year-old becomes more and more unlikely. Besides the psychological impact on self-confidence about

learning and stereotypes, for the vast majority of the youngsters, finishing school might conflict with the need of finding a job or maintaining a family (or both). Not surprisingly, this situation has created, as an alternative, night schools (typically from 7pm till 11pm) or short recovery programmes (six months instead of one year) with obvious implications for the capacity of learning. Moreover, this situation tends to prevail among kids from a socially vulnerable background. As a result, universal access to primary schooling has created a new challenge not sufficiently recognized as an issue yet: to improve learning abilities especially for the ones historically excluded from it.

But recent results of the national examination of primary schools show that student's performance has had significant improvement. Although the exam tests both Portuguese and Mathematics and also students from the 4th and 8th grades, I will use here the data only for Mathematics and the 4th grade[2]. The exam is organized by a federal institute (INEP, in Portuguese) - subordinated to the Ministry of Education - and applied to public schools every two years. The results are available by school but here I adopt the average result for each municipality (only for schools run by municipal governments). The first exam took place in 2005 and the most recent data available is for 2009 which allows us to apprehend the variation between 2005 and 2009.

It is important to say that although there has been significant improvement between 2005 and 2009, the 2005 results were, in fact, extremely below the minimal expected level of learning. However, for the purposes of the discussion I am developing here, this is not going to be the object of analysis since my aim at this point is to explore whether municipal governments improved their results (or not).

For reasons of simplicity, I present a typology of the results for Mathematics in 4,292 municipalities[3]. As one can see from Table 2, the vast majority of municipalities presented improvements in Maths' scores between 2005 and 2009. However, the data also reveals that municipal governments have achieved different levels of improvements. Let us briefly analyze the four types of results produced.

Table 2. Variation of Results for Mathematics (4th grade) between 2005 and 2009 in municipal schools in Brazil.

	Frequency	Valid Percent	Cumulative Percent	Average variation
No improvement	1181	27,6	27,6	4 points
Small Improvement	1922	44,9	72,5	22 points
Improvement	1002	23,4	95,9	39 points
Largest Improvement	177	4,1	100	69 points
Total	4282	100		23 points

Source: INEP/MEC and my own elaboration (typology).

Around 28% of municipalities have been classified in the "no improvement" category, which includes cases of small variation between the 2005 and 2009 results, no change and also negative variation. The second type of result – and the most common one - refers to municipalities that, in relative terms, presented a "small improvement" – averaging a variation of 22 points between 2005 and 2009. Around 23% of municipal governments presented a "significant improvement" – on average 39 points – and finally a small group of 177 municipalities presented considerable improvement in the five-year period: 69 points.

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2 The 4th grade is also known as 5th grade in Brazil since compulsory schooling was lowered from age 7 to 6 in 2005. It corresponds to children aged 10 years-old.

3 The typology was created by classifying the variation between the results in 2005 and 2009 (using the k-means algorithm). Only municipalities with results for both years were included in the cluster analysis. In 2010, there were a total of 5,565 municipalities in Brazil.

Although it might seem obvious that local factors explain the variation, the current state of affairs in the decentralization literature has little consensuses about which ones are relevant to explain the observed variation. What could explain this? A more committed administration? An increase in education expenditure? More qualified teachers? Training students to be able to do well at the exams? The adoption of new pedagogical tools? Or still, all of these factors working together? My purpose here is very simple: from the point of view of knowledge, we need more studies in order to understand what has been done (and also not done) to produce such results.

In this sense, I believe that a productive way to start building knowledge in this area is to test existing theories combined with a more qualitative analysis that could allow us to make the connections between case-oriented studies and variable-oriented studies (RAGIN, 1989). As I have tried to argue here, the investigation on the effects of decentralization cannot ignore the role of central governments. At least in the Brazilian case, decentralization means something very specific: the major educational guidelines are produced by the federal government but subnational governments are still autonomous concerning how to implement these policy guidelines. My proposal is, therefore, the following one: present some of the causal propositions in the field of decentralization studies, to extract some hypothesis and to attempt to test them.

So, next, I present four types of explanations proposing a causal link between decentralization and government performance. It is not a comprehensive overview but it selects commonly used arguments. After that, in a complete preliminary attempt - aimed more at stimulating the debate in this area - I present an empirical application of some of the hypothesis.

2) Causal propositions explaining local government performance after decentralization reforms

This section aims to present some of the propositions in the decentralization studies that explicitly propose a causal connection between decentralization and government performance. This is not a comprehensive overview (for a more comprehensive review, see (GOMES, 2010). In fact, I deliberately selected only the propositions that could go through an empirical test given the availability of data at this point of my research. (GRINDLE, 2007), for example, finds that among many factors explaining decentralization in Mexican municipalities, the emergence of a "political entrepreneur" or a leader that can mobilize support for the implementation of local reforms explain successful local reforms. Given the fact that this type of analyzes demands a series of in-depth case studies, this hypothesis will not be tested at this point.

1) Fiscal capacity

One of the conclusions one might arrive when revising the field of decentralization studies is the existence of different explanatory propositions concerning the relationship between decentralization reforms and government performance. The debate begins from a rather simple assumption, which is still present in the current context: local governments would have better conditions to adapt the policies under their responsibility to the preferences of their citizens in comparison to centralized States. From this reasoning, it follows that the mechanism guaranteeing efficient results is to award local governments sufficient decision-making autonomy in relation to local taxation and freedom to decide on the "package" of services to be offered.

This first type of interpretation, economic in nature, presents theoretical models on the effects of decentralization inspired by the analytical arsenal of microeconomics and the notion of market equilibrium (OATES, 1999; TIEBOUT, 1956; BRENNAN & BUCHANAN, 1980; MUSGRAVE, 1983). It is the most criticized group of analysis and, therefore, has exerted much influence on the research agenda. The whole theoretical reasoning of these authors centers on fiscal decentralization, understood as a sufficient and necessary dimension for producing government efficiency and effectiveness.

A central concept in this discussion is allocative efficiency in the distribution of State functions. In other words, it is about finding the activities and services that each level of government, in taking on the

responsibility of providing them, would produce maximum efficiency in terms of allocation of State resources. Similarly to the model of market equilibrium, which is reached in a decentralized way through the exchange of private goods between individuals, "free competition" among subnational governments would encourage efficient results in terms of the provision of public goods for the community. Allocative efficiency, therefore, would be the result of freedom to adapt local policies and services to citizens' preferences, including the decision on the rate of local taxation.

In this model, the role of central governments should be restricted to the policies that need national coordination: macroeconomic equilibrium and compensation mechanisms for the disparities between jurisdictions such as the adoption of intergovernmental transfers.[4] The remaining should be carried out locally. The reason that justifies this lies in the premise that only local governments can respond to the preferences of the citizens of their territories (or jurisdictions). The central government, in contrast, would be unable to define the "optimum" levels of taxation and allocation of resources in all local jurisdictions. The standard behavior of central governments is to apply uniform policies to the whole of the national territory. The abstract model of TIEBOUT (1956) is considered an important influence in this debate. The model attempts to explain the mechanism that leads citizen to reveal their preferences by moving to the jurisdiction that offers the "package" of services and taxation most preferred.

So, what is the optimal equilibrium distribution of State functions? Decentralized policies would make sense in the case of public services "whose consumption is limited to their own jurisdictions" (Oates 1999, 1121), or rather, in those cases in which there are no spillover effects. For Oates (1999, 1120), the theory of "leaving local matters in local hands" would still be valid.

Many criticisms to these propositions have emerged. First, there is an underlying assumption that any political decision is far from an optimal equilibrium or, put more directly, is far from achieving allocative efficiency.[5] In this type of interpretation, political elements are absent, such as the motivation of politicians, the role of local bureaucracies, local elite's hold over the decision-making process and, above all, the political consensus that is possible to be achieved given the circumstances. Even though this paper does not present a review of this type of criticism, it is worth mentioning the existence of a group of authors that have developed analytical models which incorporate the political motivations (or rationalities) that would influence decentralization reforms (Treisman 1999; Panizza 1999) as well as the influence of institutional designs on these choices, especially the electoral system and federalism (Garman, Haggard and Willis 2001; O'Neill 2003).

The second criticism refers to the fact that, despite the far-reaching theoretical intentions, such propositions are seen as specific to the American case. As Treisman (2007, 284-85) points out, a historical rhetoric of distrust of central authority and, therefore, a strong anti-centralization ideology, is characteristic of the school of thought of these authors. Moreover, more recent studies have also shown that, empirically, the central government is invariably a key actor both in relation to the degree of supervision or regulation of the subnational governments – even in the case of EUA (Sellers and Lindström 2007).

Furthermore, one of the most important criticisms refers to the consequences of this model: a variation on service provision becomes a mechanism for inequalities concerning the collective welfare among citizens of the same national territory. As well as reasons of substantive social justice, this State model would inevitably create inefficient and ineffective policies, given that localities would have different capacities (fiscal, administrative etc) to respond to the "preferences" of their citizens.

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4 Oates recognizes in his 1999 paper that intergovernmental transfers should contain criteria related to the "social values" of a society, not only for reasons of allocative efficiency but also political ones. For the author, however, it remains a fact that an increase in the amount of transfers does not automatically guarantee increase in collective welfare.

5 This perception is not exclusive to Oates and is present in many other studies, all of them of an economic nature. Political decisions are always suboptimal (for example, the famous and influential Arrow's Theorem of 1951 on the unpredictability of political decisions, or McKelvey on the Chaos Theorem of political decisions).

PRUD'HOMME (1995) calls the attention for this fact: decentralization reforms can generate increasing internal disparities. In this respect, the role of intergovernmental transfers becomes part of this debate: some defend a design that prevents dependency from this type of revenue and others see them as an important mechanism to compensate fiscal disparities. For the latter, a fiscal decentralization reform in which local governments depend almost exclusively on their own-tax revenue to form their budgets will punish localities with low economic dynamics.

The author criticizes the theories of fiscal federalism and allocative efficiency as they describe only the positive effects of decentralization reforms. For him, there are no theoretical reasons to sustain the idea that all functions are carried out in a more efficient way by local governments. There are "dangers of decentralization", as the title of his paper indicates, such as horizontal and vertical disparities, imbalances from the macroeconomic point of view (fiscal stabilization), inefficiency and ineffectiveness.

From this point of view, Prud'Homme presents the argument that intergovernmental transfers are essential mechanisms for minimizing one of the "dangers" of decentralization: increasing disparities. Intergovernmental transfers tend to be criticized for encouraging irresponsible fiscal behavior. That is, subnational governments would not have to engage in unpopular tax-rise policies or more efficient revenue collection to finance their actions. According to this logic, the dominant strategy becomes to knock on the central government's door to ask for more transfers. Prud'Homme (1995, 11) criticizes this negative view:

> Transfers should not be seen as an unavoidable evil, but as a welcome good. They can be utilized to control some of the dangers of decentralization, particularly for distribution and stabilization, and should be seen as an important component of any decentralization programme.

For this type of interpretation the fiscal dimension of decentralization is the solely factor explaining government performance. In fact, the prevailing assumption of these studies equates autonomy to collect taxes (own-tax revenue) as equivalent to the decision-making autonomy to spending. However, many studies have questioned the validity of this assumption, as national regulations might indeed transform "autonomous tax" into earmarked spending (GOMES, 2012).

In sum, for this group of studies there is a minimal amount of fiscal resources necessary for any local government to operate. Obviously, if there are no financial resources, governments will not be able to act. Yet, the most adequate measure is to incentive the collection of own-tax revenue instead of transfers, producing accountability to citizens and efforts to achieve more efficiency.

From this discussion, we can extract two propositions for empirical testing:

Proposition 1: "fiscal decentralization will produce policy variation among local governments as they will respond to the preferences of local citizens".

Observation: given the fact that vast majority of the Brazilian population can only attend a public school, spending in public education per pupil in elementary schools can be considered as proxy measure to the priority of education.

Limitations: a) the amount of spending ignores aspects of efficiency – i.e, more spending does not necessarily produces better service b) spending might have no relation to local decisions – as we saw previously, constitutional rules oblige municipalities to a minimal spending on education.

Proposition 2: "the higher the fiscal dependency on intergovernmental transfers, the smallest efforts to improve public services"

Observation: own-tax revenue per capita which has a direct (or rather opposite) relation to intergovernmental transfers, i.e, the higher the capacity of collecting own-tax revenue, the smallest the dependency on revenue from transfers.

2) Administrative Capacity

Another institutional factor that would interfere in the efficiency, effectiveness and responsiveness of governments is connected to administrative capacities, including the disparities of capacity among governments. This issue is dealt with by authors from different analytical perspectives (SELLERS & LINDSTRÖM, 2007; FALLETI, 2006; FAGUET & SÁNCHEZ, 2008; LITVACK, et al., 1998; FIZBEIN, 1997). Although propositions that put forward the idea of a relation between administrative capacity and government performance cannot be said to belong to a single group, this factor emerges as explanatory in many studies (GOMES, 2010). The common characteristic among all of them, though, is a rupture with the notion that fiscal decentralization is a sufficient condition for subnational governments' autonomy (SCHNEIDER, 2003; O'DWYER & ZIBLATT, 2006; TREISMAN, 2007; MARTINEZ-VAZQUEZ & MCNAB, 2003).

Analytically, decentralization would have to be distinguished into three dimensions: fiscal, political and administrative decentralization. For some authors, moreover, decentralization cannot be seen as a dual concept ("centralized" or "decentralized") since these forms would not exist in a pure state but, on the contrary, we would observe varying degrees of decentralization/centralization (SELLERS & LINDSTRÖM, 2007; STEGARESCU, 2005).

Based on the assumption of different dimensions of decentralization, some studies turn to test empirically their relation to policy results.

The strongest case is presented by Schneider (2003), who suggests that the administrative dimension is more significant in explaining social spending. Nevertheless, in another empirical study based on Schneider's premises (O'DWYER & ZIBLATT, 2006) such results are refuted.

Analyzing a group of 68 countries in relation to their degree of fiscal, administrative and political decentralization, Schneider (2003) comes to the conclusion that administrative autonomy, more than the other dimensions, produces positive effects in relation to the adoption of policies that corresponds to citizens' demands. For Schneider, public spending on "pro-poor" policies – i.e. expenditure on health, education, welfare etc –, is a legitimate measure of these demands (Schneider 2003, 25). As control measures, variables of the economic level of a country Gross Domestic Product (GDP) and the proportion of the elderly population (assuming that these countries could have higher social spending due to their age structure) are added. In order to measure fiscal decentralization, Schneider adopts the proportion of subnational governments' expenditure on total expenditures and for the administrative decentralization, the proportion of subnational own-tax revenue as an indirect measure of autonomous decision-making capacity.

In his results, the following associations are found through regressions: the more politically decentralized, the lower the fiscal capacity and the lower the pro-poor expenditure, on one hand. On the other, the higher the administrative decentralization, the higher the pro-poor expenditure. In his analysis, the degree of fiscal decentralization does not appear to be associated to any pattern of expenditure (Schneider 2003, 27).

The author's final argument is that political decentralization – as in federal States – disperses forces interested in a pro-poor expenditure agenda. In systems with dispersed political power, constructing alliances that would support social spending would be more difficult to carry out as it would have to be done in all local jurisdictions in a coordinated way. In the end, he suggests that the relevant factors that explain higher social expenditure would be the combination between political (national) centralization and administrative decentralization. In other words, units politically subordinated to the central government.

Similar results are presented by Sellers and Lindström (2007), one of the comparative studies between countries that also attempts to capture the different degrees and types of decentralization, but with more emphasis on the degree of supervision (or regulation) of central government. The study is limited to developed countries. By adopting a different form of classifying degrees of decentralization, the authors come to conclusions that refute long-standing theses of studies analyzing the relationship

between degrees of centralization/decentralization of the State and the scope of their social protection. For example, despite the fact that the literature analyzing the emergence of the Welfare State in Nordic countries traditionally features the high degree of centralization of these States, the analysis of the qualitative indicators organized by the authors shows that local governments in these countries have a high administrative capacity, that is, own-tax revenue capacity and decision-making autonomy concerning local spending. This result essentially refutes the widely accepted proposition that subnational governments in "social-democratic" Welfare States have low administrative autonomy, or rather, that they would only act as units subordinated hierarchically to the central government. Moreover, for these authors, the existence of a local capacity previous to the implementation of the Welfare State in these countries, as well as a relatively homogenous national party system, would have produced not only support for the national agenda of expanding social services but also a greater commitment to local implementation of this agenda.

Studies from the World Bank also highlight administrative capacity as a key factor to explain local governments' performance. Prud'Homme (1995) sees local administrative capacity as a potential impediment to efficient and responsive policy-making. For this author, these problems may be related, for example, to the difficulties in attracting qualified personnel to local administrations, since central governments tend to offer best wages as well as best career development prospects, mobility etc.

For Litvack, Ahmad and Bird (1998), one of the considerations that central governments should take into account, before designing decentralization reforms, is if local governments have the fiscal and administrative capacity to provide services. For the authors, this problem would be more acute in the case of developing countries (Litvack, Ahmad and Bird 1998, 28). Otherwise, the chances of services being inefficient and ineffective increase considerably. FIZBEIN (1997) also concludes that administrative capacity was central to explain the performance of Colombian local governments.

The main criticism of this group of analyses is in relation to the operationalization of the measures that should reflect analytical concepts on the one hand, and the difficulties inherent in comparative studies on the other, especially when the distinction between degrees and forms of decentralization renders the analyses more complexity. The variation in the ways of classifying degrees and types of decentralization also ends up producing discrepant results (Sellers and Lindström 2007; Stegarescu 2005).

In sum, this factor refers to minimum administrative conditions for effective provision of public services by local governments. It includes the existence of an organizational structure, with qualified personnel and efficient administrative routines, which can respond quickly and appropriately in the process of implementing policies.

From this discussion, we can extract one proposition for empirical testing:

Proposition 3: "high levels of local administrative capacity will produce better results"

Observation: given the fact that administrative capacity would involve qualified bureaucrats, an indicator would be the proportion of civil personnel with higher education

Limitation: the ideal indicator would refer only to personnel working in the education area (in the classroom and in the administration) but this type of data is not available to all municipalities.

3) Participation as a Causal link to Local Government Performance

For this wide group of studies, the essential mechanisms that guarantee governance are: existence of local participation channels and accountability. In order to achieve this, the institutional design of the decentralization reform should contain positive incentives for government responsiveness as well as constraints for irresponsible behavior. This would be especially true in the case of developing countries, characterized by weak institutions and little capacity for mobilization and monitoring by the local population[6].

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6 The suggestion that political institutions are "weak" in developing countries is controversial. What electoral system could guarantee an increase in government responsiveness? There is no consensus, in the academic debate,

Given the fact that since the 1988 constitution, Brazil has adopted many participatory spaces (in all three levels of governments) with varying institutional designs, studies on participation are vast (DAGNINO, 2002; JACOBI, 1993; GURZA LAVALLE & BUENO, 2011; COELHO, 2011; AVRITZER, 2007; MOURA, et al., 2011) and it would be beyond the aims of this paper to review them. However, many of these studies highlight the effects of institutional design of the participatory spaces on the results of public policies.

Besides the choice of "appropriate" institutions guaranteeing the participation of citizens, for some studies there are also a qualitative aspect relevant to local governments that is the existence of a "political entrepreneur". This would be important in the case of creating effective channels of participation that can produce "real" participation and not a simple formalized institution dominated by, for example, the interests of the local government. In this case, factors such as political actors' capacity for leadership, including the civil society and social movements, as well as the role of bureaucracy in policy implementation would be crucial to explain the way participatory institutions are organized.

Grindle (2007), for example, puts forward a set of important factors that explains why some Mexican localities were successful in their local reforms and others were not. A combination of the following factors was identified: an increase in local elections competition – with the end of the predominance of a single party (PRI - Institutional Revolutionary Party) –, the pressure from central government so local administrations would implement the expected local administrative reforms, the existence of a local (elected) political leader committed to the reform and also the creation of effective communication channels with the local community

Fizbein (1997) finds similar results. In a case study that analyses the performance of Colombian local governments, Fizbein highlights the importance of administrative capacity in the production of allocative efficiency and effectiveness. Such capacity, however, does not emerge as a direct result of the institutional design but instead from the existence of a local leader who is committed to build channels of communication with the local population.

In sum, the existence of institutionalized and effective participation channels is recognized by a wide spectrum of studies as crucial for government responsiveness. It seems clear, though, that many of these propositions rely on qualitative information such as case studies that could observe both the functioning of participatory channels and the role (if any) of local leaders. However, given the stage of this research, the empirical testing of these factors will be quite limited.

From this discussion, we can extract one proposition for empirical testing:

Proposition 4: "the existence of institutionalized and effective channels for participation will produce better outcomes"

Observation: a) existence of a formally approved municipal educational council with popular participation in the municipality b) fostering community participation in school's decisions as one of the five main educational actions in the municipal administration

Limitations: a) as pointed out previously, formal existence cannot guarantee effective popular participation b) again, as the result of national rules, federal funding for municipal schools might require the creation of councils with civil society representation as one of the conditions for funding.

The following section presents the data, the method and the results.

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on which electoral systems are "weak" and which are "strong". This is still an open debate. Why the "personal and charismatic vote" – seen as problematic in the above arguments – could not produce a leader who responds to local interests? Obviously, the assumption that political institutions in developing countries are so weak that impede governments to be closer to their citizens is a hypothesis yet to be empirically tested.

3) A preliminary investigation on Local Factors influencing Policy results

This section presents a preliminary investigation looking at local factors that could explain the variation in the results of Mathematics in the case of Brazilian municipalities, discussed previously. As suggested before, I have opted to select some existing propositions in the decentralization debate and examine them. Given also the fact that there are different causal propositions in the review I presented in the previous section, I adopted a qualitative comparative analysis (QCA) in order to verify whether one or a combination of conditions (or factors) explains the outcome.

Following the discussion initiated by RAGIN (1989), the assumption here is that the phenomenon in question – the capacity of local administrations to improve public services – is complex in nature. This means to say that there may be different "paths" resulting in the same outcome or "multiple conjunctural causation" (RAGIN, 1989). Say, for example, that an analysis of the Brazilian municipalities shows that the combination of "fiscal capacity" and "effective participatory channels" produces the outcome "improved results in Maths" – i.e., only when these two conditions occur concomitantly the outcome is observed, if one of them are missing, the outcome does not occur. But a second path might also exists, say, "administrative capacity" combined with "fiscal capacity". This method, therefore, is adequate to capture the diversity of explanatory factors even if they are not frequent in statistical terms. This approach is quite different from the way variables are treated in multivariate analysis, for instance. In this case, if the two previously variables were found to explain the outcome (or, rather, the dependent variable) the essential logic behind it would be "fiscal capacity" contributes to, say, 20% of the variation and "effective participatory channels" another 5%. This is what RAGIN calls as the additive nature of variable-oriented analysis (RAGIN, 1989, pp. 53-68). The objective, in this case, is to capture common factors to all cases. For this reason, quantitative analysis of this type needs a large N. On the contrary, QCA is focused on a smaller number N but with more in-depth knowledge about cases. Both approaches can produce generalizations but of a different type.

As my interest here is concerned with the diversity of ways municipal governments improved (or not) Math's results, I am inclined to prefer QCA, expecting to be able to find different combinations (or different factors) that lead to the same outcome.

I also opted here for a simplified version of QCA, namely crisp-sets (dichotomized data) as it is very useful in preliminary investigations. However, crisp-sets present a few limitations concerning specifically the fact that data has to be dichotomized into 2 categories ("yes and no", "0 and 1" etc) when most of the social phenomenon is not that "crisp" and easy to categorize. The most recent alternative to this limitation is to adopt fuzzy-set analysis (RAGIN, 2000; RAGIN, 2008; RIHOUX & RAGIN, 2009) but I consider this a second methodological step after exploring the results from crisp-sets.

Essential to this method is, therefore, the classification of the conditions and the outcome, which also present a different logic from traditional quantitative analysis. When classifying a condition (or a potential explanatory factor) the researcher must bear in mind the substantive characteristics of the social phenomenon – it is not so important to observe and classify variables based on the relative distribution of values but rather to anchor this decision on theoretical grounds. For QCA is less important, for example, to know "how rich" a municipality is. It would be sufficient to classify this case as belonging to the group of "rich municipalities".

Therefore, based on these assumptions of the method, I have chosen to observe a small number of cases, combining qualitative knowledge about them with the most general observation of all cases. So, my criteria for the selection of Brazilian municipalities was the following: departing from the four types of results for Mathematics for the universe of Brazilian municipalities and some knowledge of cases, I chose 22 cases in the state of Rio Grande do Norte (northeast of Brazil) that could mirror the diversity of results observed. The selected municipalities are presented in Table 3: all four types of results are represented by cases. They also include all municipalities that belong to the so-called Metropolitan Region of Natal simply because the existence of case studies helps to understand these cases (CLEMENTINO, et al., 2009). Given the fact that municipal elections (for mayors and municipal

legislative) took place in 2004, the 2005-2009 variation on Math's results includes a complete municipal administration (2005 to 2008).

Table 3. Selected municipalities for Analysis. State of Rio Grande do Norte, Brazil.

No improvement	Small Improvement	Significant Improvement	Largest Improvement
Baía Formosa	Ceará-Mirim	Carnaúba dos Dantas	Lagoa Nova
Caicó	Macaíba	Goianinha	Santana do Seridó
Extremoz	Monte Alegre	Mossoró	São João do Sabugi
João Câmara	Natal	Parelhas	
Nísia Floresta	Parnamirim	São Miguel do Gostoso	
Pau dos Ferros	São Gonçalo do Amarante	Touros	
	São José de Mipibu		
N=6	N=7	N=6	N=3

QCA analysis is done by Boolean algebra (and minimization) - the idea is to find minimal explanatory factors (or in QCA terms, to extract the prime implicants in a truth table). Truth tables in this sense will produce a list of configurations associated with an outcome. In practical terms, once the dataset is ready and the key step of classifying conditions and the outcome is complete (i.e., data are dichotomized), the TOSMANA and the fs/QCAsoftwares will create the truth table and the QCA algorithms will attempt to identify (causal) regularities and will also verify if a parsimonious solution is possible.

Based on the knowledge of cases, I classified the five conditions and the outcome in the following manner:

Table 4. Classification of Data. Municipalities of Rio Grande do Norte/Brazil.

	Description	value 0	value 1	Source
Outcome	variation in Math's results (2005-2009)	Types 1 + 2	Types 3 + 4	INEP/MEC/Brazil
Condition 1	fiscal capacity 1 spending in public elementary education per student per year (in Reais) average of 2007/2008	< R\$1,500 (aprox. U\$800)	> R\$ 1,500 (aprox. U\$800)	own calculation based on Tesouro National and INEP
Condition 2	fiscal capacity 2 - own-tax revenue per capita (average of 2007/2008) – extremely low levels (cut) or highly dependent on transfers	<R\$50 (aprox. U\$27)	>R\$50 (aprox. U\$27)	Tesouro Nacional/Brazil
Condition 3	administrative capacity - proportion of civil personnel with higher education 2008	<30%	>30%	IBGE and qualitative data
Condition 4	participation 1 - existence of municipal educational councils with popular participation 2006	no	yes	IBGE and qualitative data
Condition 5	participation 2 - community participation in school's decisions 2006	no	yes	IBGE and qualitative data

The **outcome** was coded as 0 when the variation in Math's results were "none" or "small" improvement between 2005 and 2009 (according to the typology presented before) and coded 1 for municipalities that had "significant" or "largest improvement". **Condition 1** coded 1 municipalities that spent at least R\$ 1,500 (approximately U\$ 800 in 2007/08 values) per student per year, considered a minimal amount to operate the system[7]; values below this amount was coded 0. **Condition 2** was coded within the same logic, only opposite signs: if the municipality's own-tax revenue is high it is coded 1,

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7 There is no consensus on the minimal amount of spending per pupil that would be necessary to guarantee quality of education. Estimates vary from U\$ 700 to U\$ 1,200 for elementary schools (CNDE, 2007; GOMES, 2009).

which means, in this case, that dependency on intergovernmental transfers is smaller[8]. Municipalities with own-tax revenue per capita lower than R$50 per year can be considered as a case of total insufficiency to run any public services at all without counting on transfers. According to the reasoning of the literature, the low level of revenue-raising effort of these municipalities would be associated, likewise, with public service inefficiency. **Condition 3** was coded 1 when at least 30% of all personnel working in any place of the municipal administration had a higher education degree (this also includes teachers). **Conditions 4 and 5** are a combination of quantitative and qualitative analysis of some of the cases. They try to capture if participation channels are somehow incorporated in the administration of local education policies: if there was a municipal education council that guaranteed popular representation, it was coded 1. The same apply if the municipal administration had as one of its main educational programs to foster community involvement in the management of schools: it was coded 1. The last two conditions count on qualitative information from existing case studies about the municipalities in Rio Grande do Norte (FRANÇA, 2001; NUNES, 2005; MORAIS, 2005; ANDRADE, 2009; COSTA & COELHO, 2010; ALMEIDA, 2009), but it is important to notice that qualitative data is not available yet for all selected municipalities.

The Truth Table with all five conditions produced the following results[9]:

Table 5. Truth Table for the Selected Conditions and Outcome. Selected municipalities in the state of Rio Grande do Norte, Brazil.

1 Spending education	2 Own-tax	3 Qualified personnel	4 Education Council	5 Participation in Schools	Outcome	Municipality
0	1	0	1	1	0	Baia Formosa,Ceara Mirim,Nisia Floresta, Sao Goncalo do Amarante
1	1	0	1	1	0	Caico
0	0	0	1	1	1	Carnauba dos Dantas,Sao Joao do Sabugi
0	1	1	1	1	0	Extremoz,Macaiba
0	1	0	1	0	C	Goianinha,Pau dos Ferros
0	0	0	0	0	0	Joao Camara
0	0	1	1	0	C	Lagoa Nova,Monte alegre,Sao Jose de Mipibu
1	1	1	1	1	C	Mossoro,Natal
1	0	0	0	1	1	Parelhas,Santana do Serido
0	1	1	0	0	0	Parnamirim
0	1	0	0	0	1	Sao Miguel do Gostoso
0	0	1	1	1	1	Touros

The first observation from the truth table is the number of cases in which QCA analysis showed as contradictory outcome (letter "C"). This means that although these municipalities have similar characteristics in all five conditions, results are contradictory: some of them had an outcome 1 (significant or largest improvement in Mathematics) and others had outcome 0 (no or small improvement). Solutions to contradictory cases are available but the preliminary results discussed ahead strongly suggest that other factors or conditions, specific to each case, could eliminate these contradictions and therefore produce common explanations. In other words, new hypothesis would have to be established for further investigation. For example, the truth table shows there is only two municipalities that present all the causal factors pointed by the literature combined: the municipality of Natal and Mossoro have a high

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8 Two classifications were originally created to test this condition: the first one applied a cut of R$ 100 per capita and the second, a lower threshold: R$50. I opted here to present only the results for the second classification.

9 Many other tests were run before this final version of the truth table but as it would take too much space to present all of them and the discussion of the method is not the central point of this paper, I opted to go straight to relevant results. However, I can forward the database and the tests by request (see email at the cover page).

collection of own-tax revenue (condition 1), higher spending per student (condition 2), higher proportion of personnel with higher education (condition 3), existence of a municipal council for education with representation of the civil society (condition 4) and, finally, both have adopted programs to foster community participation in schools (condition 5). This is not a surprising result at all as both cities are the largest in the state – Natal is the capital of Rio Grande do Norte and Mossoro - with a significant amount of economic activities (CLEMENTINO, et al., 2009). However, the surprise is the contradictory outcome: whilst similar in terms of conditions, municipal schools run by Mossoro municipality were somehow able to foster a significant improvement in the performance of its students in Mathematics whereas Natal, on the contrary, presented a small variation. These preliminary findings points to the fact that there must exist other factors explaining the outcome which have not been considered by the studies on the effects of decentralization on local government performance.

The second observation refers to the large number of cases that have a "unique" combination of conditions and, for this reason, appear as a single case in the truth table. Cases such as Caico or Joao Camara present characteristics that are not similar to any other of the cases in analysis. In this case, it is possible to test whether dropping or excluding some of the conditions would improve explanation. That is the main function of Boolean minimization.

By using Boolean algebra it was possible to minimize (synthesize) the most relevant combination of conditions. The parsimonious solution ("the reduction of a long, complex expression into a shorter, more parsimonious expression", RIHOUX & RAGIN, 2009, p. 35) was the following:

Table 6. For outcome 1 (significant improvement in Math's):

	Parsimonious Solution* (fs/qca software)	Explain Municipalities:
Combination 1	owntax*~council*~qualif*~spend	Sao Miguel do Gostoso
Combination 2	~owntax*council*~qualif*~spend	Carnauba dos Dantas, Sao Joao do Sabugi
Combination 3	~owntax*~council*~qualif*spend	Parelhas, Santana do Serido
	solution coverage: 0.555556 solution consistency: 1000000	N = 5

* in this case, the parsimonious solution coincides with the "intermediate solution".

Which reads in the following way. The parsimonious solution points to three combinations of conditions that explain the significant improvement in Math's results: **combination 1)** a higher capacity of own-tax revenue collection (as expected by theory) combined with no education council with popular participation (contrary to expected), low levels of qualified civil personnel (contrary to expected) and low levels of spending per pupil (as expected by theory). Besides being a still complex solution, combination 1 explains only one case ("Sao Miguel do Gostoso"). **Combination 2** says that two municipalities presenting significant improvement present the following combination of conditions: low own-tax revenue (contrary to expected and also the opposite to combination 1) with the existence of an education council (as expect but opposite of combination 1), low levels of qualified civil personnel and low levels of spending per pupil (again, both contrary to expected). Finally, **combination 3** says that low levels of own-tax revenue combined with no educational council, low qualification but an adequate level of spending on education explains two municipalities' improved results in Math's. It is worth noting that the condition "community involvement in school's decisions" was not included as a factor that could explain the outcome, either as expected by theories or in the opposite direction.

As one can see, these results not only contradict theoretical propositions but also – and despite the attempt to minimal solutions - are still very complex explanations, therefore explaining very few cases, which cannot be considered relevant in terms of generalization of results. Only five cases are explained by these very complex combinations of conditions (or only 55% of cases with outcome 1 – see "solution coverage"). In other words, these are not convincing explanations. On the other hand, the remaining tests suggest that to explain improvement in educational performance is indeed rather more complex than

identifying factors that associated with no or small improvement. But before I elaborate on that, let us analyse the minimal explanations for outcome 0 and a final test of necessary conditions in this case.

Concerning outcome 0, there were also three combinations within a parsimonious solution:

Table 7. For outcome 0 (no or small improvements in Math's):

	parsimonious solution (fs/QCA)*	
Combination 4	~owntax*~council*~qualif*~spend	Joao Camara
Combination 5	owntax*qualif*~spend	Extremoz, Macaiba, Parnamirim
Combination 6	owntax*council*~qualif	Baia Formosa, Caico, Ceara Mirim, Goianinha, Nisia Floresta, Pau dos Ferros, Sao Goncalo do Amarante
	solution coverage: 0,769231 solution consistency: 0,909091	N = 11

* in this case, the parsimonious solution coincides with the "intermediate solution".

Combination 4 is not only a complex one but also explains only the case of Joao Camara. Although it is possible that this municipality might indeed be a unique case on its own, this result does not contribute to the main goal of trying to establish general propositions. Having said, though, it is worth noting that this single case contains all the expected signs of the theoretical propositions: the absence of all four conditions has indeed produced no improvement in Math's results. However, this is clearly an exception.

Combination 5 explains three cases and reads as follows: no or small improvement in Math's results is associated with: a higher level of own-tax revenue collection (contrary to expected) combined with a higher level of qualified personnel (contrary to expected) and low levels of spending on education (as expected). This solution is interesting in the sense that although these municipalities have enough economic activities to raise own-tax revenue, they do not transform this capacity into higher levels of education spending. This might be cases of municipalities that spend only the minimal percentage of taxes and transfers on education that the constitution requires (as discussed in the first part of this paper) but nothing more than that.

Combination 6 reads that a higher level of own-tax revenue combined with the existence of an education council and a smaller proportion of qualified personnel explain no or small improvements in Math's results. In terms of theoretical reasoning, this result also does not confirm expectations: a higher capacity to raise own-tax revenue does not imply improving the quality of public services as well as the existence of a council with popular participation. However, a lower level of qualified personnel emerges as expected. This result includes seven municipalities.

Although explanations for outcome 0 cover more cases than outcome 1, it does not confirm theoretical expectations completely and also do not fully satisfy an explanation that could point to causal connections. The presence of an educational council with popular participation emerges in one combination as associated with improved results but in another one signs to the opposite direction. The same can be said to "qualified personnel". One reason could be that these two conditions are not crucial to influence educational results. On the other hand, it is also possible that these conditions do not mirror empirical reality. For example, the existence of an institutionalized educational council with popular participation might indeed be only formal. In this sense, only a further in-depth study of how these councils function would help to clarify this point. Having said that, there is one condition that seems to be important to explain outcome 0 for the vast majority of cases: per pupil spending as a necessary condition.

The distinction between necessary and sufficient conditions (for a result) is the guiding purpose of Qualitative Comparative Analysis (QCA) and although it is indeed a central discussion for this method (RAGIN, 1989; RAGIN, 2008) it is sufficient for this paper to point out the following logic behind it. A

necessary condition (or a potential causal factor) says that every time the outcome of interest is observed the condition is present. Within the QCA logic, however, necessary conditions for an outcome does not need to take a probabilistic sense, as it is acceptable (especially in the social sciences) to identify a condition that points to necessity of the type "most of the time it will be necessary for the result". More often than not, nonetheless, social phenomenon will take a "necessary but not sufficient for the result" format, i.e, a single factor has to be present but it still needs other conditions to produce the outcome. Because QCA tests sufficient conditions, tests for necessity have to be carried out previously in order to eliminate necessary conditions from the tests (although the "intermediate solution" maintains necessary conditions). I have deliberately left the necessity test after presenting the above results as a final remark for the role of spending on education.

Let us start by verifying if any of the conditions tested previously could be read as necessary for the outcome. Table 8 shows the results for outcome 1 and outcome 0 which present different interpretations. The measure "consistency" is an estimate of necessity (varying from zero to 1) and "coverage" the proportion of cases that is explained in each condition. As a benchmark, a consistency of 0.85 can be read as "most of the time it will be necessary" (1.00 would be "always necessary").

Table 8. Testing of Necessary Conditions for the Outcome.

Outcome 1 (significant improvement)			Outcome 0 (no or small improvement)		
	Consistency	Coverage		Consistency	Coverage
spend	0.333333	0.600000	~spend	**0.846154**	**0.647059**
~spend	0.666667	0.352941	spend	0.153846	0.400000
qualif	0.333333	0.333333	~qualif	0.538462	0.538462
~qualif	0.666667	0.461538	qualif	0.461538	0.666667
~council	0.333333	0.600000	~council	0.153846	0.400000
council	0.666667	0.352941	council	**0.846154**	**0.647059**
~owntax	0.666667	0.666667	~owntax	0.230769	0.333333
owntax	0.333333	0.230769	owntax	0.769231	0.769231

The test for outcome 1 shows that there are no conditions that could be understood as necessary for the result. In fact, neither the presence nor absence (shown by a ~ sign) of conditions have a consistency value above 0.85. On the other hand, two factors emerge as possible necessary conditions for outcome 0. Contrary to expected, the existence of an educational council with popular participation appears as "most of the time necessary" for no or small improvement in educational results. I have no explanation for this finding apart from the observation made earlier (they may only be formal but no active institutions). Nonetheless, low levels of spending per pupil ("~spend") appears as a "mostly necessary" condition. Table 8 shows a consistency level of 0.85 and coverage of 0.65 for spending.

Coverage says that not all cases are explained by this solution. In empirical terms, this means to say that of the total cases of low spending, 11 presented an outcome 0 but six other cases had the opposite result, i.e, a significant improvement in Math's despite the fact of low levels of spending. Although further investigation would have be done in order to understand these six cases, a preliminary examination reveals that some of them are small municipalities (sometimes with only 1 municipal school) and others presented a high variation in Math's because they had very low scores in 2005, all conditions that might facilitate improvement if effective policies are adopted. Still, these conjectures do not explain all cases. On the other hand, the consistency level reads that 85% of the cases with outcome 0 (no or small improvement in Math's) had, as a common characteristic, low levels of spending on education. In this case, the two main exceptions are the capital city (Natal) and Caicó, both with high levels of spending but small variation in Math's results. One might argue that a city with a population of 800 million (the capital) might indeed present more complex elements for analysis which might not be captured by the

average score of all schools within the municipality. For example, in this type of cities, maybe it is necessary to account for internal inequalities among schools within the same municipality (TORRES, et al., 2010).

These results combined with the sufficient conditions analysis presented before reinforce the notion that explaining the improvement of educational performance is indeed much more complex than expected by the theoretical propositions discussed here. At this point of this research, the only thing that can be said is that low levels of spending on education seems to somehow contribute to no or little educational improvement but raising – or crossing a threshold – of spending does not guarantee improved results. In terms of policy recommendations, these preliminary results suggest that policy-makers should be aware of the impact of a minimal spending per pupil but also that this factor alone will not be sufficient to a continuous improvement of results.

In sum, this preliminary exercise shows that the array of local factors that impact government performance in a context of decentralization is still open to investigation.

Final Remarks

This paper attempted to review some of the propositions discussed in the decentralization studies. The first part of this paper questions the assumption of these studies that local determinants are the only factor explaining local governments' performance. As I tried to discuss here, the role of central governments cannot be ignored in decentralization reforms as well as in the performance of subnational governments.

The expansion of the educational system in Brazil for the last 20 years might suggest, at first sight, that decentralization or, more specifically, the autonomous decisions of local governments explain the increased access to education. However, a closer analysis reveals that the role of central government was crucial to explain this result in a nationwide scale. By using a series of national rules and a strategy of linking revenue to pupil's attendance, these policies created positive incentives or turn more attractive for subnational governments to decide (autonomously) to expand their school systems. The result was a significant expansion of access to education in the country. In this sense, it is reasonable to say that decentralization of education in Brazil took a format where the educational guidelines are decided at the national level although the implementation of educational policies is very decentralized to state and municipal governments.

The paper also tried to show that, from this perspective, we still need to produce knowledge in this area concerning the local factors that determine or influence subnational government performance especially when the challenge of policies are not only expanding school system but also to improve the quality of education. A preliminary empirical application testing a set of selected propositions in the debate did not confirm theoretical expectations. The only factor that appears as relevant is the association between low levels of spending per pupil and no or small improvement in educational results. At the same time, however, spending more in education is not automatically transformed into better results. This result suggests the existence of a complex interaction of factors associated with the improvement of educational quality. In this sense, further investigation is needed and a combination of testing existing theories with in-depth case studies, in order to review those, seems to be a viable way to improve knowledge in this area.

The assumption that local governments are in a better position to adopt an agenda of policies that respond to collective welfare – in comparison to the more centralized forms of organization – remains a hypothesis to be tested. But the fact is that decentralization processes, even though in varying forms and degrees, have been and continue to be adopted in several countries. Hence, research that advances our understanding of how local governments operate and the results they produce would be a valuable contribution to academic studies and to society in general.

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