

Minha Casa Minha Vida Program (2012-2016): analysis of the relative efficiency of Brazilian municipalities in the implementation of federal programs

Ludmila Ferreira Bandeira ¹

Edgar Reyes Junior ²

¹ Ministério do Desenvolvimento Regional / Secretaria Nacional de Habitação, Brasília / DF – Brazil

² Universidade de Brasília / Programa de Pós-Graduação em Administração, Brasília / DF – Brazil

This research aims to evaluate the relative efficiency of Brazilian municipalities in the implementation of the Brazilian federal program for affordable housing *Minha Casa Minha Vida* (MCMV) program. The study discusses characteristics or factors that seem to affect municipal efficiency in policy implementation providing theoretical and empirical support to research in the area. The MCMV program is part of the Social and Urban Infrastructure axis of the Growth Acceleration Program (Programa de Aceleração do Crescimento – PAC). The work was divided into two stages. The first step is the classification of municipalities into homogeneous groups. The second refers to the municipalities' relative efficiency in the MCMV, through the application of data envelopment analysis (DEA). As a result, we identified that Brazilian municipalities have different structuring patterns. The majority of them were classified as poorly structured or minimally structured. In the analyzed data, we observed a clear regional pattern, where South and Southeast have more well-structured municipalities compared to the Central-west, North, and Northeast. By analyzing the relative efficiency in MCMV, considering as universe only municipalities that completed MCMV projects between 2012 and 2016, better-structured municipalities also presented better results, indicating that structural conditions may be determinants of program performance. In contrast, the regional analysis presented that Centralwest, North, and Northeast demonstrated efficient municipalities more often, on average, in implementing the program.

Keywords: public policy; relative efficiency; public policy evaluation; Minha Casa Minha Vida Program.

Programa Minha Casa Minha Vida (2012-2016): análise da eficiência relativa dos municípios brasileiros na execução de programas federais


A presente pesquisa busca avaliar a eficiência relativa dos municípios brasileiros na execução do programa Minha Casa Minha Vida. Pretende-se que os resultados deste trabalho permitam a discussão de quais características ou fatores parecem afetar a eficiência municipal na implementação de políticas públicas, de forma a fornecer subsídios teórico-empíricos às pesquisas na área. O programa Minha Casa Minha Vida (MCMV), caso escolhido, compõe o eixo Infraestrutura Social e Urbana do Programa de Aceleração do Crescimento (PAC). O trabalho foi estruturado em duas etapas: a primeira é a classificação de municípios em grupos homogêneos; a segunda refere-se ao levantamento da eficiência relativa dos municípios na implementação do MCMV, por meio da aplicação de Análise Envoltória de Dados (DEA). Como resultado, foi identificado que os municípios brasileiros possuem padrões diversos de estruturação, sendo a maioria classificada como pouco estruturados ou com estrutura mínima, com claro padrão regional, em que Sul e Sudeste apresentam, com maior frequência, municípios bem estruturados em comparação com o Centro-Oeste, o Norte e o Nordeste. Ao analisar a eficiência relativa no MCMV, tendo como universo apenas os municípios que concluíram empreendimentos do PMCMV entre 2012 e 2016, os municípios com melhor estrutura também apresentaram melhores resultados, indicando que a estrutura deve ser determinante para o desempenho no programa. Em contrapartida, a análise regional apresentou o Centro-Oeste, o Norte e o Nordeste com mais municípios eficientes na execução do programa.

Palavras-chave: políticas públicas; eficiência relativa; avaliação de políticas públicas; Programa Minha Casa Minha Vida.

DOI: <http://dx.doi.org/10.1590/0034-761220190341>

Article received on September 27, 2019 and accepted October 22, 2020.

[Translated version] Note: All quotes in English translated by this article's translator.

ISSN: 1982-3134 

Programa Minha Casa Minha Vida (2012-2016): análisis de la eficiencia relativa de los municipios brasileños en la implementación de programas federales

Esta investigación tiene como objetivo evaluar la eficiencia relativa de los municipios brasileños en la implementación del programa Minha Casa Minha Vida (MCMV). Se pretende que los resultados de este trabajo permitan discutir qué características o factores parecen afectar la eficiencia municipal en la implementación de las políticas públicas, a fin de proporcionar apoyo teórico y empírico a la investigación en el área. El programa Minha Casa Minha Vida, si se elige, forma el eje de Infraestructura Social y Urbana del Programa de Aceleración del Crecimiento (PAC). El trabajo fue estructurado en dos etapas: la primera es la clasificación de los municipios en grupos homogéneos; la segunda se refiere al relevamiento de la eficiencia relativa de los municipios en la implementación del MCMV, mediante la aplicación del análisis de envoltura de datos (DEA). Como resultado, identificamos que los municipios brasileños tienen diferentes patrones de estructuración. La mayoría de ellos fueron clasificados como mal estructurados o mínimamente estructurados. Podríamos observar en los datos analizados un patrón regional claro, donde el Sur y el Sudeste tienen municipios mejor estructurados en comparación con el Centro Oeste, el Norte y el Noreste. Al analizar la eficiencia relativa en el MCMV, considerando como universo solo los municipios que completaron proyectos del PMCMV entre 2012 y 2016, los municipios mejor estructurados también presentaron mejores resultados, lo que indica que las condiciones estructurales pueden ser determinantes del desempeño del programa. En contrapartida, el análisis regional presentó el Centro Oeste, Norte y Nordeste con más municipios eficientes en la implementación del programa.

Palabras clave: políticas públicas; eficiencia relativa; evaluación de políticas públicas; Programa Minha Casa Minha Vida.

1. INTRODUCTION

Since the promulgation of the 1988 Federal Constitution and throughout the 1990s, the Brazilian institutional context has been marked by significant transitions, particularly regarding social policies. The changes in social policies are associated with the transfer of attributions and competencies from the federal to subnational government levels (Lotta, Gonçalves & Bitelman, 2014).

The expectation was that this decentralization would lead to a more efficient provision of public goods and services, improving the population's well-being. The rationale was that subnational governments are closer to the population and would have more and better social participation mechanisms, offering goods and services to meet citizens' needs.

However, studies analyzing local governments' performance (E. Diel, F. Diel, Schuls, Chiarello & Rosa, 2014; M. Silva, J. Silva, Borges & Souza, 2015; Varela, Martins & Fávero, 2012) have shown that, in addition to significant variation in service level, the vast majority of the analyzed municipalities demonstrated low efficiency in public policy implementation.

This article contributes to the field of public policy evaluation by assessing the relative efficiency of municipal administration when implementing federal policies and programs. The study points out the bottlenecks local governments face in public policy implementation.

Public policy evaluation has been a recurrent theme of research in the field. Bandeira, R. Silva, Gonçalves and Calmon (2015) conducted a bibliometric analysis in Brazilian administration journals, examining articles published from 2008 to 2013. They found that almost 60% of studies are related to the stages of public policy, often focusing on public policy evaluation, which endorses the importance of this article's theme.

This article also offers practical contributions, evidencing how local government structure may affect relative efficiency levels in implementing the Brazilian federal affordable housing program *Minha Casa Minha Vida* (MCMV).

MCMV is part of the social and urban infrastructure branch of the umbrella program called Programa de Aceleração do Crescimento (PAC) (growth acceleration program). MCMV is managed by the National Secretary of Housing of the Ministry of Regional Development (MDR), with the participation of other institutions.

Several studies address the innovative model adopted to coordinate the interests in the elaboration and implementation of the MCMV. However, little research has focused on the local actors' role in this process, especially local governments.

Case studies analyzing the performance of Brazilian municipalities are frequent in the literature. However, these studies are usually limited to municipalities within a specific state, such as the analysis of housing financing dynamics in the municipalities of Rio Grande Sul (C. Silva & Alves, 2014) and the impact of MCMV in the development of the housing policy in local governments of the state of São Paulo (Rolnik, Iacovini & Klintowitz, 2014). In both examples, the program significantly increased the availability of resources for social housing.

However, the analysis of municipalities of Rio Grande do Sul concluded that the program's implementation did not contribute to the emergence of new drivers in housing financing. C. Silva and Alves (2014) highlighted that the main variable used in the selection of municipalities to participate in MCMV (housing deficit) did not play a redistributive role in the allocation of resources among local governments.

The study by Rolnik et al. (2014) in the state of São Paulo concluded that MCMV might have contributed to disarranging the housing planning initiatives undertaken by local governments within the scope of the São Paulo State Housing and Urban Development Company (CDHU). This process led to a reduction in municipal activities in the sector to a pragmatic approach focused on attracting federal funds, which is reproduced by other players in housing policy, including social housing movements.

Evaluation studies with a more systemic approach address the local management of the MCMV resources in municipalities with fewer than 50 thousand inhabitants. França (2015) highlights the importance of the program to guarantee access to housing finance in small municipalities. However, the authors stress that meeting the federal government's requirements to access these resources is still a challenge, mainly due to the local governments' low technical and institutional capacity.

Krause (2012) analyzed the small municipalities' urban and housing institutional framework. The study concluded that housing planning instruments foreseen in the *Sistema Nacional de Habitação de Interesse Social* (SNHIS) (national affordable housing system) – such as plan, fund, and a committee to support affordable housing management – were less present in municipalities that hosted MCMV developments. In some way, the simplified operation of MCMV contributed to disarranging the local governments' structured housing policies. The research mentioned above by Rolnik et al. (2014) in the state of São Paulo complements these findings, although it also considered larger municipalities.

This article proposes advances for this research agenda, examining the differences of Brazilian local governments regarding efficiency when implementing the MCMV program. The theoretical and practical relevance of this study lies in its contribution to understanding these differences.

The study's contribution in evaluating the local government's performance in implementing federal programs such as MCMV is based on the following research question: **What is the relative efficiency of Brazilian municipalities in the implementation of the MCMV program?** Answering this question entails discussing characteristics or factors that potentially affect such efficiency, offering theoretical-empirical subsidies to the field of studies.

2. THEORETICAL FRAMEWORK

2.1 Public Policy Evaluation

Souza (2003) summarizes the concept of public policy as the field of knowledge that seeks both to “put the government into action” and analyze this action (independent variable) and, when necessary, propose changes in actions or understand why and how they took a specific direction (dependent variable). The author's definition of public policies supports this study that examines the local governments' public policy implementation and investigates the factors affecting their performance.

This research aims to evaluate the relative efficiency of municipalities in implementing the Brazilian federal affordable housing program *Minha Casa Minha Vida* (MCMV). The first step to accomplish this task is to examine recent definitions of public policy evaluation.

Vedung (2010) defines public policy evaluation as a careful retrospective analysis of governmental interventions, observing their organization, content, implementation, and outcomes. Such assessment aims to contribute to future practical situations.

For Costa and Castanhar (2003), evaluation is the systematic and objective assessment of a project or program (completed or in progress) that contemplates its performance, implementation, and outcomes. For the authors, “the purpose of the evaluation is to guide decision-makers about specific policies or programs regarding continuity, corrections, or suspension” (Costa & Castanhar, 2003, p. 972 our translation).

Public policy evaluation as an area of interest of researchers began to evolve in the 1970s. For Vedung (2010), this area has gained popularity since the 1990s, where all state action was subject to evaluation. The assumption is that, by carefully examining the results of the actions undertaken and the paths toward them, the decision-maker would be better prepared to guide subsequent actions. In summary, “evaluation is an important instrument for improving the efficiency of public spending, the quality of management, social control over the effectiveness of the state's actions” (Ramos & Schabbach, 2012, p. 1272, our translation). It aims to offer guidance to decision-making processes, providing information to support actions and resource allocation choices.

Government and public administration have a long history of seeking indicators and indexes to measure and evaluate performance. However, it is only since the 1960s and 1970s that these techniques started to gain relevance internationally. According to Howlett, McConnell and Perl (2016), in the 1970s, researchers in many countries started to connect how policy problems could lead to solutions, reinforcing the importance of evaluation to identify such problems and improve public policies.

Oliveira (2016) points out that, even though the study of public policies as an analysis of the state's action started in the 1930s, it was in the 1970s that studies abandoned their strictly normative character and began to evaluate the policies' efficiency and effectiveness, toward achieving goals.

There are three dimensions of public policy evaluation that are worth conceptualizing in this study. For Januzzi (2005), these evaluative dimensions seek to monitor state actions regarding **the use of resources** – for efficiency, **the achievement of goals** – concerning the efficacy, and **the most comprehensive and persistent social developments** – when evaluating effectiveness.

Sano and Montenegro (2013) corroborate these definitions, understanding that **effectiveness** is perceived through the evaluation of transformations based on action, the **efficacy** results from the relationship between intended and achieved goals, and **efficiency** means doing more with fewer resources.

This article evaluates the municipalities' relative efficiency by analyzing resources used to implement the MCMV program. The municipalities were analyzed based on the management of time and financial resources allocated, as detailed in the research methodology.

2.2 The Minha Casa Minha Vida (MCMV) Program

Similar to other affordable housing policies observed throughout Brazilian history, the Minha Casa Minha Vida (MCMV) program “has as its flagship the promotion of a good: homeownership” (Dutra, 2013, p. 131 our translation). The state participates with a leading role in issues such as fundraising and housing financing, production, and sale.

According to Dutra (2013), the Brazilian housing policy is a policy to promote the welfare state based on the North American model. This model is anchored in liberal values, which means that the state's activities are restricted to regulatory actions of the housing system, with no direct intervention in purchase, sale, or financing. In this model, the financing process is carried out by private savings and loan associations. In addition, the housing units for low-income families are partially subsidized to stimulate the performance of the private sector in the segment.

Klintonowitz (2016) explains that, with President Lula da Silva's election in Brazil, popular housing movements were recognized as players in the sector. A bold interest coordination strategy was arranged, with the ability to convene housing movements and the productive sector – coalitions with historically opposed interests – on the negotiating table. This coordination originated MCMV, a program located “between the right to housing and restructuring the productive sector” (Klintonowitz, 2016, p. 167, our translation).

The creation of the Ministry of Cities in 2003 was an important milestone in the resumption of affordable housing on the federal agenda. The ministry was responsible for the Urban Development Policy at the national level and had a specific secretariat dedicated to plan and implement the National Housing Policy (PNH).

However, it was only in 2007 that affordable housing delivery started to gain space in the federal budget. The federal government has financed the policy via four different forms. The first form of financing, observed between 2007 and 2009, was the National Affordable Housing Fund (FNHIS), included in the Growth Acceleration Program 1 (PAC1). The other three forms emerged from 2009 to

2016: the Social Development Fund (FDS), the Residential Lease Fund (FAR), and the General Federal Budget (OGU). These financing forms were used in the three modalities of the MCMV program: the MCMV – entities, the MCMV – corporations (income level 1), and the MCMV – resource public offering (Menezes, 2017).

The National Housing Policy has a vast normative institutional framework that includes the right to housing, guaranteed as a social right in the Federal Constitution (Constitutional Amendment 26/2000); the National Housing Policy (PNH – Law 11124/2005); and the National Housing Plan (PlanHab), which aims to outline a strategy for addressing the demands of the housing sector within 15 years from its publication (2009).

The PNH foresees a system for providing adequate housing to the low-income population through the SNHIS and the Local Affordable Housing Plans (PLHIS). The policy also seeks to expand the real estate offer and credit for the population capable of financing real estate through the national market system. The PNH model proposes several instances of social participation, including the Council of the Cities at the national level and similar councils at the state, district, and municipal levels. The council has specific attributions regarding urban and housing issues.

Klintowitz (2016) highlights that the economic situation was decisive for expanding mechanisms and the volume of resources destined to housing through the MCMV program. Among other objectives, the program aimed to help the civil construction productive sector and the real estate market and avoid deepening the market crisis.

According to data from the Ministry of Economy (Ministério do Planejamento, 2014), between 2009 and 2014, BRL 251.8 billion was invested in the MCMV program, considering direct subsidies and available credit lines, contracting 3.75 million housing units across Brazil. Aguiar (2015) suggests that MCMV operates in the same way as private companies in the real estate sector, leaving little space for governmental influence, especially regarding the decisions to implement the projects.

The MCMV program was launched in 2009 to create mechanisms that encourage the production and acquisition of new housing units or the requalification of urban properties and the production or renovation of rural housing for families with a monthly income of up to BRL 5,000. This program comprises the National Urban Housing Program (PNHU) and the National Rural Housing Program (PNHR).

The MCMV program is part of the PNHU. It has three modalities: financing with funds from the severance indemnity (FGTS), the acquisition and disposal of real estate modality, through the transfer of resources to the Residential Lease Fund (FAR), and the program *Minha Casa Minha Vida* – Entities (MCMV-E), with operations carried out with resources from the Social Development Fund (FDS) (Reis, 2013).

The complexity of funding sources, the types of support under the program, and the number of players involved demonstrate the innovative model for coordinating interests in the construction and implementation of the MCMV program.

The literature demonstrates that many studies were dedicated to understanding the institutional configuration of the MCMV program. However, few works focused on the role of local actors in this process, especially of municipal entities.

3. METHOD

This is a descriptive and quantitative study with the central objective of assessing Brazilian municipalities' relative efficiency in implementing the Minha Casa Minha Vida (MCMV) program. As descriptive research, this study presents the characteristics of a particular phenomenon or population and establishes relationships between variables and facts.

The research was carried out in two stages. The first stage consisted of classifying the 5,570 Brazilian municipalities into homogeneous and comparable groups, using cluster analysis. A traditional clustering algorithm was used (Carvalho, Mata & Resende, 2007), adopting municipality as the geographical unit. They were clustered based on common characteristics, regardless of their location.

Data from the 2015 survey *Informações Básicas Municipais* (Munic) (basic municipal information) survey was used to classify Brazilian municipalities into clusters. The Munic survey's unit of analysis is the municipality, and the local government's secretariats and departments are the information source. The survey forms the main database on Brazilian municipalities and is separated into blocs of information covering different topics.

Information related to urban planning (Munic, bloc 2) and resources for management (Munic, bloc 3) were used as variables to classify municipalities. From Bloc 2, the variables analyzed were those associated with the municipality's master plan (existence, year of the law establishing the plan, and year of the last update). For this research, these variables were combined into the variable *master plan profile*, which was subdivided into three categories:

- **Updated master plan** – when the municipality has a master plan created or updated in 2010 or after that year.
- **Outdated master plan** – when the municipality has a master plan created or updated before 2010.
- **No master plan** – when the municipality declared it does not have a plan.

As for Bloc 3, we analyzed characteristics related to the fees charged by local governments (public lighting fee, garbage collection fee, fire-fighting fee, urban cleaning fee, police fee, among others). These variables were combined into the variable *profile of stipulated fees*, subdivided into two categories:

- **More than 3 fees** – when the municipality charges at least 3 fees.
- **Less than 3 fees** – when the municipality charges less than 3 fees.

The use of categorical data provided by the Munic Survey required adopting a variant of the k-means clustering algorithm, the k-modes method. The k-modes extend the k-means paradigm for categorical clustering data by changing the mean of clusters with the mode. The study uses new dissimilarity measures to address categorical objects and adapts the method to the frequency analysis to update the clusters' modes (Carlantonio, 2001).

This step enabled the adequacy of the data for the second stage of the research, the application of data envelopment analysis (DEA). DEA requires identifying municipalities with similar profiles

because, in the proposed model, they will be the decision-making units (DMUs), which need to be homogeneous, according to the model's premise. This step aims to identify the municipalities with the best relative efficiency in implementing the MCMV program.

According to Lins, Lobo, Silva, Fiszman and Ribeiro (2007), Peña (2008), and Pedroso, Calmon, Bandeira and Lucena (2012), DEA is a non-parametric methodology for the comparative measurement of the efficiency of DMUs, based on best practices.

This method can be used to assess the production units' technical efficiency when they use multiple inputs to produce multiple goods and services measured in different units. [...] The method compares each unit's inputs and products and defines each analyzed unit's relative efficiency rate (Peña, 2008, p. 84, our translation).

Thus, DEA is a non-parametric method to define boundaries for efficiency. Peña (2008) and Lins et al. (2007) point out that DEA has been successfully applied in the study of efficiency in public administration and non-profit organizations, which corroborates the adequacy of the method to analyze the relative efficiency of municipalities implementing the MCMV program.

This research also presents the benchmark of Brazilian municipalities in the implementation of MCMV based on output indicators. Inputs are the financial resources invested and the time spent in constructing the housing units (HUs), and outputs are the number of HUs.

The DMUs selected were the 619 municipalities that completed MCMV projects financed with resources from the Residential Lease Fund (FAR), in the period from 2012 to 2016, understood as autonomous DMUs. They perform similar decentralized management functions that are measured using a homogeneous methodology and are therefore comparable.

The model with variable returns to scale (VRS) was chosen because, according to the proposed objective and the literature on the topic, the relationships established in the management of programs and public policies do not imply constant returns of scale. Given the objectives of the proposal and the characteristic of the process of selecting the initiatives to be supported by the program, the study adopts an input-oriented model to assess which municipality uses resources more rationally for the production of housing units in the MCMV program. The analysis of the results was classified into four levels of efficiency, based on the efficiency score presented by the municipality, as detailed in Box 1.

BOX 1 **RELATIVE EFFICIENCY LEVELS IN THE IMPLEMENTATION OF THE MCMV PROGRAM**

Classification	Score ()	Characterization
Efficient	= 1	Efficiency equal to 100%
Little inefficient	1.01 1.10	Inefficiency between 1% and 10%
Moderately inefficient	1.10 1.25	Inefficiency between 10% and 25%
Highly inefficient	1.25	Inefficiency equal to or above 25%

Source: Elaborated by the authors.

In this second stage, we used data from secondary sources. Data on the program’s monitoring activities produced by the National Secretary of Housing of the Ministry of Regional Development (SNH/MDR) allowed defining the financial resources the municipalities used or made available. These data also revealed the outcomes after the program’s implementation (housing units delivered, the deadline for execution, among others).

4. RESULTS

4.1 Cluster Analysis of Municipalities

The 5,570 Brazilian municipalities were organized into groups using the cluster analysis, based on the local governments’ capacity to plan (variable master plan profile) and charge fees (variable profile of stipulated fees). As a result, 6 clusters were defined based on combining these two variables and their categories. Table 1 summarizes the distribution of municipalities considering this classification.

TABLE 1 **DISTRIBUTION OF MUNICIPALITIES BY STIPULATED FEES AND MASTER PLAN**

Nº	Group	Stipulated fees	Master plan	Number of municipalities	%
1	Very well structured	More than 3 fees	Updated	354	6%
2	Well structured	Less than 3 fees	Updated	808	15%
3	More or less structured	More than 3 fees	Outdated	450	8%
4	Little structured	Less than 3 fees	Outdated	1.145	21%
5	Very little structured	More than 3 fees	No plan	420	8%
6	Minimal structure	Less than 3 fees	No plan	2.393	43%
Total				5.570	100%

Source: Elaborated by the authors.

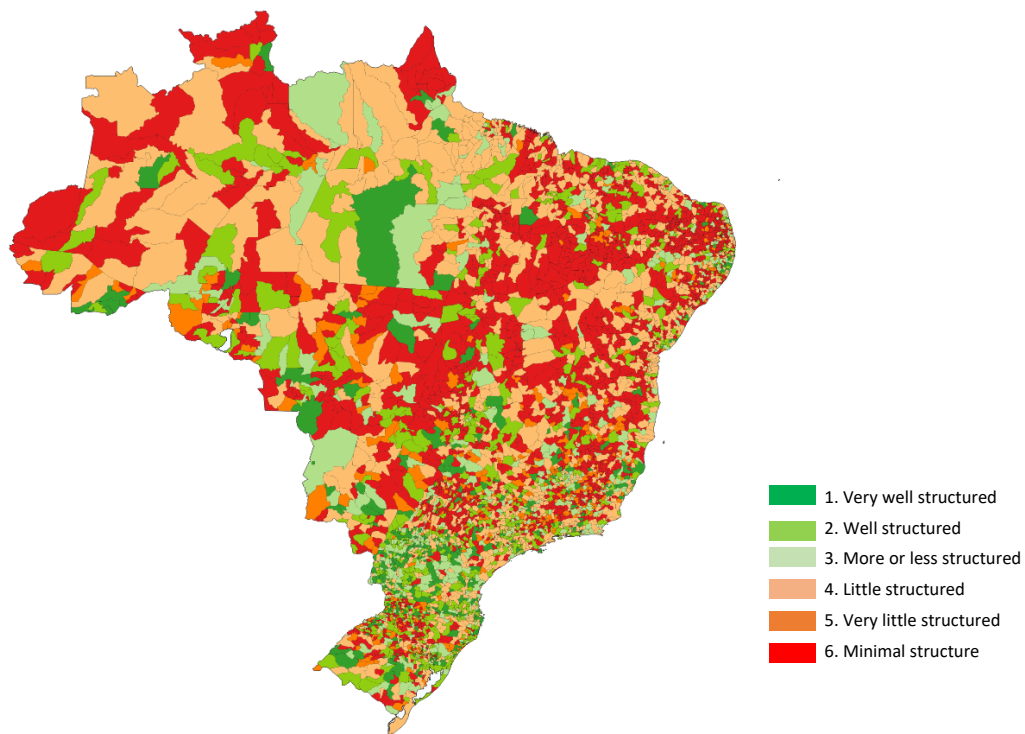
Group 6 has the most municipalities, showing that many local governments (43%) are in a critical condition and present only a minimal structure. They do not have a master plan and charge less than three fees for public services. Table 1 shows that more than half of Brazilian municipalities do not have a master plan, which many authors consider an essential instrument of the municipality’s development policy.

Group 4 is the second largest, formed of municipalities with an outdated master plan and charging less than three fees. This group is made up of 1,145 municipalities, 20% of the total. They are in a slightly better situation than the previous group since they count on a planning instrument, even if it is outdated. However, it is surprising that 18 of the largest Brazilian municipalities were included in this group, i.e., 40% of the 41 municipalities with a population greater than 500,000 inhabitants are little structured.

The group *very well structured* (Group 1) is composed of only 345 municipalities (6% of the total). They count on an updated master plan and charge more than three fees for public services. Only 4 municipalities with a population greater than 500,000 have this profile, representing less than 10% of the municipalities with this population size.

A georeferenced analysis of the information shows that the challenges of structuring municipalities follow the problems of regional inequality. Figure 1 represents the variables by cartogram, revealing the variables through the municipalities’ polygons.

FIGURE 1 DISTRIBUTION OF MUNICIPALITIES ACCORDING TO THE MASTER PLAN PROFILE AND PROFILE OF STIPULATED FEES



Source: Elaborated by the authors.

The georeferenced analysis reveals that, in general, the municipalities in the South and Southeast regions and the Brazilian coast are in the groups that demonstrate more structure. The inner-state municipalities, especially in inner regions of the country's Northeast, the North of Brazil, and the Northeast of the state of Minas Gerais, were mostly classified, as municipalities with little or minimal structure, evidencing the importance of public policies to encourage the structuring of municipalities that consider a regional cut.

This analysis reveals the need to implement public policies with a regional profile, encouraging municipal planning, since 51% of Brazilian municipalities do not have a master plan, and 29% have outdated plans. This result is particularly worrying because Brazilian legislation, through the City Statute (Law 10257/2001), provides for the mandatory elaboration of master plans for municipalities:

- I – with more than 20,000 inhabitants;
- II – that are part of a metropolitan region or urban agglomeration;
- III – whose local authorities intend to use the instruments provided in §4th of article 182 of the Federal Constitution (related to the social function of property);
- IV – that are in special touristic areas;
- V – that are in areas influenced by enterprises or activities with high environmental impact at a regional or national level;
- VI – that are included in the *Cadastro Nacional de Municípios* (national register of municipalities) as territories with areas susceptible to large-scale landslides, floods, or geological or hydrological correlated processes (article 41 of law 10257/2001).

In addition to the mandatory preparation of master plans for most municipalities, the law provides for the need to update this instrument at least every ten years (§3, article 40 of law 10257/2001), under penalty of managers for crimes of administrative improbity in the event of non-compliance with the standard. However, the data presented in Table 1 suggests that this legal framework is insufficient to encourage municipalities to develop their main instrument of urban planning. The number of municipalities that have to produce such a plan and neglect the legislation is significantly high.

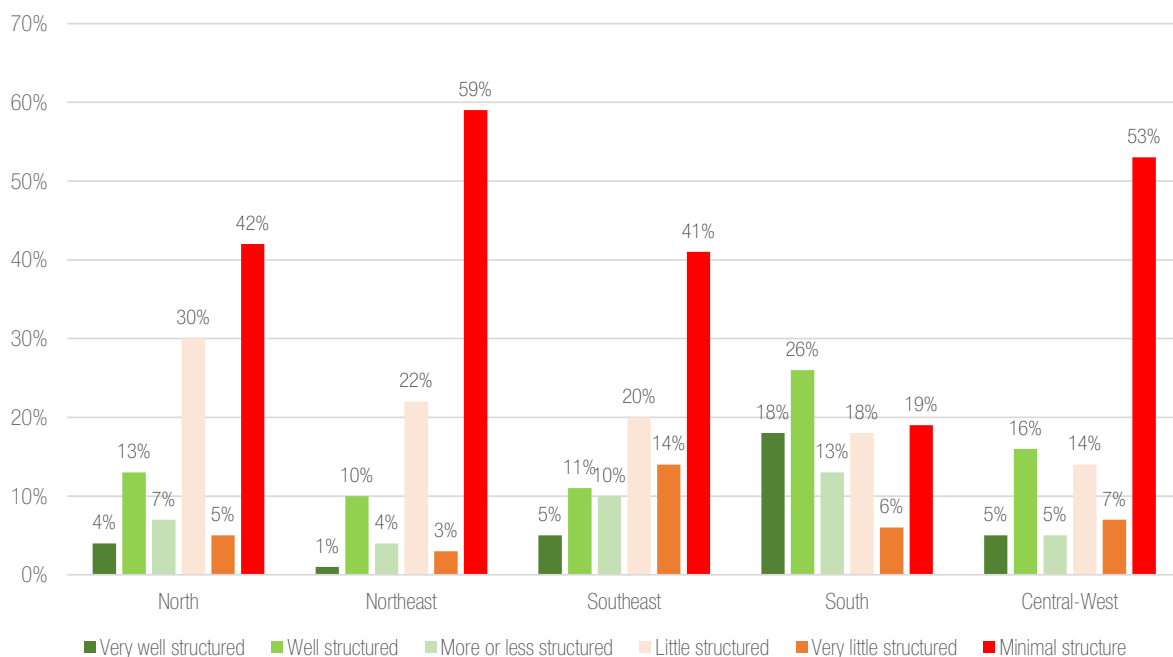
This result corroborates the questions about the decentralization process raised in the theoretical framework and in the research justification. One of the consequences of the Brazilian decentralization process was the marked asymmetry in the distribution of federal resources among municipalities, reflecting difficulties in promoting fiscal decentralization that does not reinforce regional inequalities. Rezende (1997) highlights two potential characteristics of this asymmetry: a) the concentration of the production base, limiting the possibilities of generating resources sufficiently to meet the demands of the population, and b) a stereotyped view of regional inequalities, based on criteria for apportioning revenue shares and compensatory transfers, which do not consider intra-regional inequalities.

An analysis of the municipal public management subsystems by Veloso, Monasterio, Vieira and Miranda (2011) found that outsourcing has been recurrent in the local government's financial management. Small municipalities (43%) resort to external accounting services the most. There is also a well-defined regional pattern, and the Northeast stands out in this matter. Although outsourcing is usually defended based on efficiency and flexibility, there is evidence that outsourced financial management compromises good municipal management. This phenomenon may explain the high

number of municipalities from the inner North and Northeast regions classified in Group 6, with compromised planning and fee-charging capacity.

Figure 2 shows the distribution of municipalities considering the master plan, fees, and region. The municipalities that form Group 6 – minimal structure – were marked in red. Analysis of Figures 1 and 2 combined reveals these municipalities’ predominance in inner North, Northeast, and Central-West regions. Most of these municipalities have a population size of up to 50,000 inhabitants (only 12 in this group have a population between 50,000 and 500,000 inhabitants). This fact can easily be associated with other aspects: smaller municipalities, in general, have fewer sources of fee-charging and management structures, which challenges their planning and legal attributions.

FIGURE 2 DISTRIBUTION OF MUNICIPALITIES ACCORDING TO THE MASTER PLAN PROFILE, PROFILE OF STIPULATED FEES, AND BRAZILIAN REGIONS



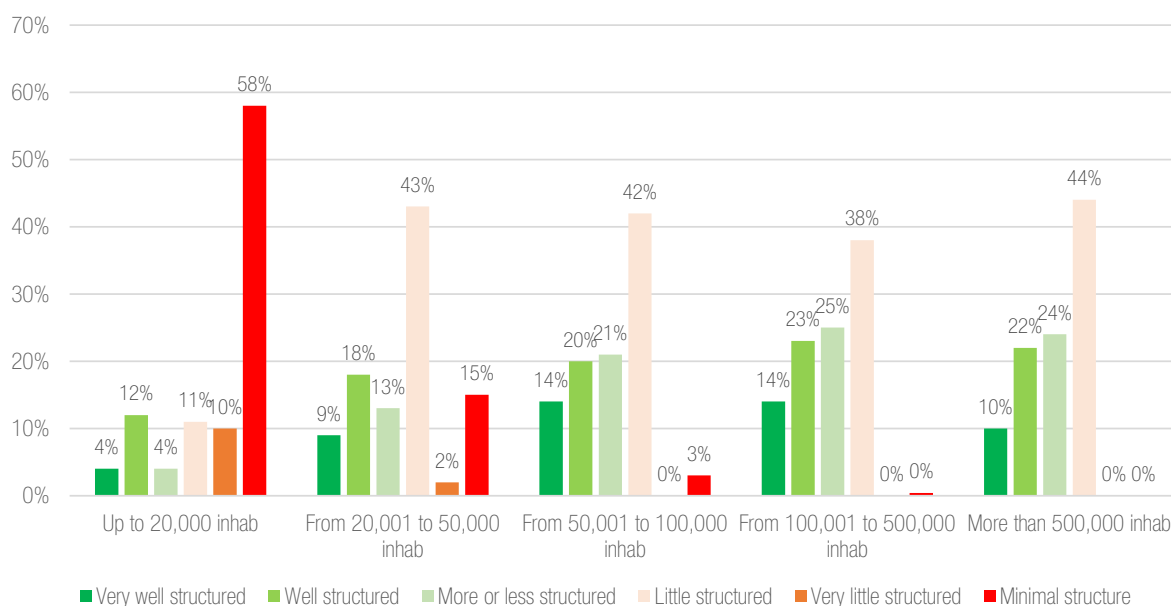
Source: Elaborated by the authors.

Regarding the performance of the municipalities in the South, the situation of the state of Paraná stood out, where municipalities with updated master plans prevailed. Following the development trends, municipalities in the coastal region presented, more frequently, more adequate profiles in both variables than those in the inner-state.

The analysis by population size (Figure 3) demonstrated that the larger the municipalities’ population size, the lower the frequency of very little structured or minimal structure municipalities. However, the municipalities with a population size between 100,000 and 500,000 were more often in groups 1, 2, and 3 (better structured). Thus, small municipalities are not viable in terms of structure, and

municipalities that are too large also face significant challenges to achieve good structural conditions, with an apparent balance in the municipalities of medium population size (100,000 – 500,000 inhabitants).

FIGURE 3 DISTRIBUTION OF MUNICIPALITIES ACCORDING TO THE MASTER PLAN PROFILE, PROFILE OF STIPULATED FEES, AND POPULATION SIZE



Source: Elaborated by the authors.

4.2 Evaluation of the relative efficiency of municipalities implementing the MCMV program

For the analysis of the local governments' relative efficiency we selected the municipalities that completed projects of the MCMV program from 2012 to 2016.

In the DEA model, three variables were used: housing units delivered, average time for completion of projects, and investment value. Table 2 presents the dispersion measures to visualize the variables and understand their behavior.

TABLE 2 MEASURES OF DISPERSION OF THE VARIABLES THAT FORM THE DEA MODEL TO EVALUATE THE RELATIVE EFFICIENCY OF EFFICIENT MUNICIPALITIES IMPLEMENTING MCMV ACCORDING TO THE MASTER PLAN PROFILE AND PROFILE OF STIPULATED FEES

Variables of the DEA model	Dispersion measures	Cluster of municipalities			
		Very well structured	Well structured	More or less structured	Little structured
Housing units delivered	Minimum	33	30	20	61
	Mean	999	1,531	1,660	1,475
	Maximum	4,455	30,003	16,898	11,087
	Standard deviation	963	3,259	2,444	1,812
Average completion time (days)	Minimum	406	365	526	405
	Mean	789	920	888	896
	Maximum	1,743	2,072	2,248	2,270
	Standard deviation	231	307	269	274
Value of investment (BRL)	Minimum	1,844,700	1,049,972	1,180,000	3,279,600
	Mean	50,224,875	80,977,197	84,786,681	76,877,477
	Maximum	245,339,159	1,727,766,583	859,580,914	615,634,554
	Standard deviation	50,114,356	178,227,654	127,052,451	97,093,528

Source: Elaborated by the authors.

The maximum value of almost BRL 2 billion in the cluster of well structured municipalities stands out. This value corresponds to the production of more than 30,000 housing units in the city of Rio de Janeiro/RJ (330455 – IBGE code), presenting an average value of just over BRL 50,000 per housing unit.

The highest maximum investment values are observed in well-structured and more or less structured municipalities, which can be explained by the fact that the majority of the most populous municipalities are classified in these clusters. These municipalities have a high demand for affordable housing, which is why they have received more MCMV projects in the period. In general, the higher investment values are associated with the delivery of more housing units. This fact is justified by the funding limits per unit established in the program regulations.

However, there is a significant variation when examining the completion deadlines observed in the cluster of little structured municipalities, with the shortest deadline being 405 days and the longest

over 2,000 days. The fastest municipality in the cluster was the municipality of Nova Friburgo in Rio de Janeiro, which delivered more than 2,200 housing units, while in the same state, the municipality of Pojuca delivered only 600 housing units in a five-fold longer execution period.

When we analyzed the ten municipalities with the longest average completion time, we noticed that only two of them delivered more than 1,000 housing units in the period, with a possible association between longer delivery times and fewer units delivered. This fact may denote potential gains in scale in housing production, in which larger projects are executed more quickly.

In all, 733 municipalities had contracts to receive funds from the MCMV program, and 624 managed to complete their projects within the analyzed period (2012 to 2016). Of these 624, only 42 were part of clusters 5 and 6 (very little structured or minimal structure). Considering that this number would not be representative of these groups of municipalities (clusters 5 and 6), as it portrays less than 1% of the universe of municipalities that are very little structured or with minimal structure, we chose not to consider them at this stage of the analyze. Thus, this stage had a sample of 577 municipalities.

Using Data Enveloped Analysis (DEA), the municipalities were classified according to their relative efficiency. Of this sample, 94 were considered efficient (as shown in Table 3), representing 16% of the municipalities analyzed, considering the average efficiency of the period (2012-2016).

TABLE 3 DISTRIBUTION OF EFFICIENT MUNICIPALITIES IMPLEMENTING MCMV, ACCORDING TO THE MASTER PLAN PROFILE AND PROFILE OF STIPULATED FEES

	Cluster	Efficient	Sample	% Efficient
1	Very well structured	23	77	30%
2	Well structured	26	137	20%
3	More or less structured	19	132	16%
4	Little structured	26	231	12%

Source: Elaborated by the authors.

The analysis of the assessment of relative efficiency, considering the clusters classified based on the variables master plan profile and profile of stipulated fees, shows that the percentage of efficient municipalities grows as we consider the cluster of municipalities with better structure. Cluster 1, very well structured municipalities, with an updated master plan and charging more than three fees for specific public services provided, presented a percentage of efficient municipalities more than twice that of cluster 4 (little structured municipalities, with an outdated master plan and charging less than three fees) (Table 4).

TABLE 4 PERCENTAGE OF MUNICIPALITIES PER PROFILE OF EFFICIENCY IN THE PROGRAM MCMV, MASTER PLAN PROFILE, AND PROFILE OF STIPULATED FEES

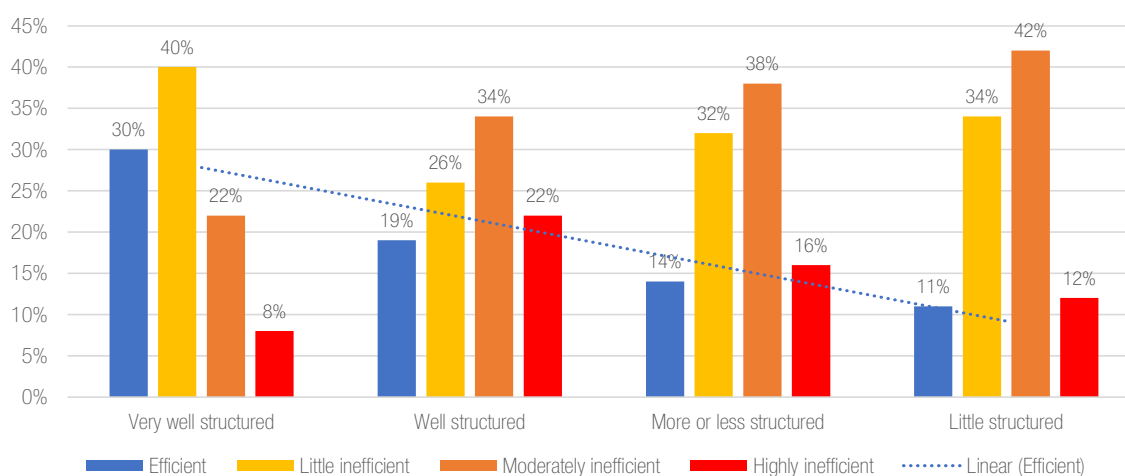
Cluster	Efficient Score (1)		Little inefficient Score (1,01 - 1,10)		Moderately inefficient Score (1,10 - 1,25)		Highly inefficient Score (More than 1,25)		Sample
	Mun.	%	Mun.	%	Mun.	%	Mun.	%	
1	23	30%	31	40%	17	22%	6	8%	77
2	26	19%	35	26%	46	34%	30	22%	137
3	19	14%	42	32%	50	38%	21	16%	132
4	26	11%	79	34%	98	42%	28	12%	231

Source: Elaborated by the authors.

An analysis of the results by cluster of municipalities also shows that, in cluster 1, efficiency and low inefficiency predominate, with 70% of the municipalities falling within these ranges of relative efficiency; in other clusters, little and moderately inefficiency predominate, and moderately inefficiency occurs more frequently in cluster 4, whose classification points to less planning and fee-charging capacity.

Figure 4 shows that high inefficiency is more frequent in cluster 2 (well structured municipalities, characterized by having an updated master plan but reduced fee-charging capacity – charging less than three fees). In this case, it may indicate that the fee-charging capacity affects the relative efficiency more than the aspects related to the planning of the municipality.

FIGURE 4 PERCENTAGE OF MUNICIPALITIES PER MASTER PLAN PROFILE, THE PROFILE OF STIPULATED FEES, AND RELATIVE EFFICIENCY IMPLEMENTING MCMV



Source: Elaborated by the authors.

When analyzing the geographic distribution of the municipalities' average efficiency, most of the efficient ones are located in the Northeast and Southeast regions. However, when we observe the proportion of efficient municipalities by region, the Northeast and Central-West regions stand out, as shown in Table 5. The Central-West region also stands out for not having highly inefficient municipalities.

TABLE 5 DISTRIBUTION OF MUNICIPALITIES PER REGION AND PROFILE OF RELATIVE EFFICIENCY IMPLEMENTING MCMV

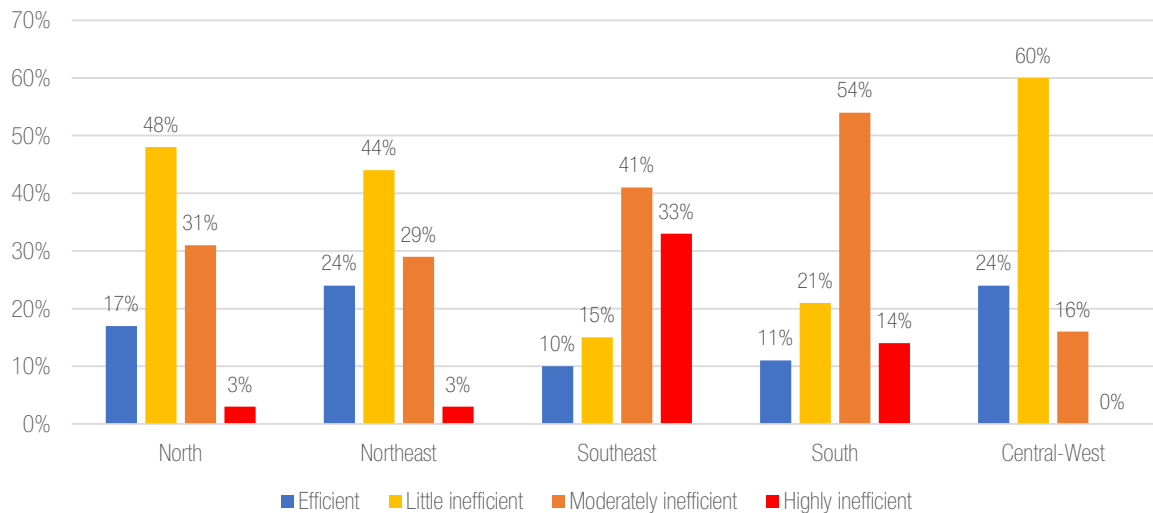
Region	Efficient Score (1)		Little inefficient Score (1,01 - 1,10)		Moderately inefficient Score (1,10 - 1,25)		Highly inefficient Score (more than 1,25)		Sample
North	10	17%	28	48%	18	31%	2	3%	58
Northeast	39	24%	72	44%	47	29%	5	3%	163
Southeast	21	10%	31	15%	83	41%	67	33%	202
South	11	11%	21	21%	53	54%	14	14%	99
Central-West	13	24%	33	60%	9	16%	0	0%	55

Source: Elaborated by the authors.

Most of the municipalities in the sample are from the Southeast region (202 municipalities). This can be interpreted as positive for the region's performance since the sample took into account only the municipalities that completed the MCMV program between 2012 and 2016. However, the region had the highest percentage of highly inefficient municipalities: 66 in total, representing 33% of the region's sample. And only 25% of the municipalities in the Southeast showed efficiency (10%) or little inefficiency (15%), representing the worst regional result.

Figure 5 shows the distribution of the different efficiency profiles of the municipalities by region. It is observed that the Northeast and Central-West regions had the highest percentage of efficient or little inefficient municipalities – 68% and 84%, respectively. The North region was positive, in which 66% of the municipalities were classified as efficient or little inefficient. Finally, in the South, most municipalities (68%) were classified as moderately (54%) or highly inefficient (14%).

FIGURE 5 PERCENTAGE OF MUNICIPALITIES PER REGION AND RELATIVE EFFICIENCY IMPLEMENTING MCMV



Source: Elaborated by the authors.

The analysis of the results by cluster revealed that aspects of the municipalities’ structure, such as planning and fee-charging capacity, can influence the results achieved in implementing public policies, especially the results achieved by the cluster composed of very well structured municipalities.

The regional analysis showed results that can be used to re-discuss the impact of regional inequality in public policy implementation since the North, Northeast, and Central-west regions showed the best results. It is worth noting that the sampling process considering only municipalities that completed the projects in the period may have influenced the result, which is a limitation of the study since many municipalities were not selected. The results of future analysis observing the performance of municipalities with unfinished projects may differ.

Notwithstanding, the data analyzed offer interesting insights, such as the fact that the municipalities’ structure (capacity to plan and charge fees for public services) has a more significant influence on performance than the geographic context in which they are inserted.

5. FINAL CONSIDERATIONS

This study evaluated the relative efficiency of municipalities implementing the *Minha Casa Minha Vida* (MCMV) program. Two stages of research were established. The first classified the municipalities into homogeneous groups, revealing that most Brazilian municipalities have minimal or little structure. Only 6% of Brazilian municipalities were classified as very well structured, those that have an updated master plan and manage to collect more than three stipulated fees.

Another important finding is that municipalities with less than 20,000 inhabitants do not even have a minimal structure – more than 58% of them do not have a master plan and charge less than three fees, showing the lack of scale to operate in minimal conditions. The lack of structure in municipalities is an important research agenda, which entails rethinking the federative model and creating possibilities for new arrangements among local governments considering factors such as population size.

In the second stage, the research assessed the municipalities' relative efficiency in implementing the MCMV program. The percentage of efficient municipalities was higher among local governments identified as counting on a better structure in the cluster analysis. The results show that very well structured municipalities present double the efficiency of little structured municipalities, corroborating the literature on resource public offering, which concluded that technical and institutional capacity had been an obstacle to improve the MCMV program.

On the other hand, the analysis of the Brazilian regions showed the Central-West, Northeast, and North as more efficient. When considering that the relative efficiency was measured based on two main inputs – financial resources and time to complete the projects – these regions may have excelled in using financial resources.

This fact may be related to the characteristics of the civil construction industry. It is a labor-intensive industry, and this resource is relatively cheaper in the North and Northeast regions of Brazil. Data from the Brazilian Chamber of the Construction Industry (CBIC) on the Unit Cost of Construction (CUB) per square meter reveals strong regional variation. The CUB of the North, Northeast, and Central-West regions is 1% to 4% lower than the national average, while in the South and Southeast, it varies from 3% to 10% national value. It is also worth mentioning the costs associated with land acquisition, significantly lower in most urban centers in the Central-West, North, and Northeast regions of Brazil.

Another important point to consider is the dynamics of housing developments in the complex urban context of Brazilian cities. The choice of analyzing the national level implies leaving behind essential aspects of the local contexts. Thus, when using the housing development's value as an indicator of efficiency, projects allocated far from urban centers, where land often costs less, can be favored in this sort of assessment, which is another limitation of this study. In addition, the debate on the urban insertion of these developments and the costs associated with the implementation of affordable houses far from health and education services are relevant points that must be considered in future studies on the subject.

When realizing that more structured municipalities reach higher efficiency levels, it is possible to say that, within the scope of the program, the local government's structure influences efficiency more than geographical context. However, this finding must be observed with caution since both the

relative efficiency in the MCMV program and the municipalities' classification were carried out in an exploratory way, requiring further research.

Finally, the MCMV analyzed in this study corresponds to one of the modalities of the program, financed with FAR resources. Within the program, the projects' institutional arrangement gives great prominence to the private sector, and local governments are responsible for controlling processes, such as defining the areas of social interest/affordable housing construction in the master plans and issuing the legally required licenses.

Therefore, the great disparities in the implementation schedules may indicate significant differences in aspects of municipal management and discrepancies in the private sector's efficiency levels due to its particular characteristics. In this context, a vital research agenda is to understand the private sector's role in the program's outcomes and study how its dynamics affect public policies such as the MCMV program.

REFERENCES

- Aguiar, M. H. (2014). Políticas de provisão habitacional no Brasil: contradições e limites à integração social. *Revista Tamoios*, 10(2), 22-34.
- Bandeira, L. F., Silva, R. M. P., Gonçalves, A. O., & Calmon, P. C. P. (2015). Políticas públicas: análise bibliométrica da produção científica nos periódicos de administração no período de 2008-2013. In *Anais do 39º Encontro da ANPAD*, Belo Horizonte, MG.
- Carlantonio, L. M. (2001) *Novas metodologias para clusterização de dados* (Doctoral Dissertation). Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ.
- Carvalho, A. X. Y., Mata, D., & Resende, G. (2007). Clusterização dos municípios brasileiros. In A. X. Y. Carvalho, C. W. Albuquerque, J. A. Mota, & M. Piancastelli (Orgs.), *Dinâmica dos municípios* (pp. 326-368). Brasília, DF: Ipea.
- Costa, F. L., & Castanhar, J. C. (2003). Avaliação de programas públicos: desafios conceituais e metodológicos. *Revista de Administração Pública*, 37(5), 969-992.
- Diel, E. H., Diel, F. J., Schuls, S. J., Chiarello, T. C., & Rosa, F. S. (2014) Desempenho de municípios brasileiros em relação à estratégia de investimento público em educação. *Desenvolvimento em Questão*, 12(26), 79-107.
- Dutra, W. Z. (2013). Entre a produção habitacional estatal e as moradias precárias: uma análise da popularização da casa própria no Brasil. *Perspectivas em Políticas Públicas*, VI(11), 131-154.
- França, K. C. B. (2015) Os gargalos para a provisão habitacional em municípios de pequeno porte: análise do programa Minha Casa, Minha Vida. *Urbe. Revista Brasileira de Gestão Urbana*, 7(3), 325-339.
- Howlett, M., McConnell, A., & Perl, A. (2016). Moving policy theory forward: connecting multiple stream and advocacy coalition frameworks to policy cycle models of analysis. *Research and Evaluation. Australian Journal of Public Administration*, 76(1), 65-79.
- Januzzi, P. M. (2005). Indicadores para diagnóstico, monitoramento e avaliação de programas sociais no Brasil. *Revista do Serviço Público Brasília*, 56(2), 137-160.
- Klintowitz, D. (2016). Por que o programa Minha Casa Minha Vida só poderia acontecer em um governo petista? *Cadernos Metrópole*, 18(35), 165-190. Retrieved from <http://dx.doi.org/10.1590/2236-9996.2016-3508>
- Krause, C. (2012, maio 03). *O programa Minha Casa Minha Vida em municípios de até 50 mil habitantes: quadro institucional e prognósticos da provisão habitacional de interesse social* (Comunicados do Ipea, n. 146). Brasília, DF: Ipea.
- Lins, M. E., Lobo, M. S. C., Silva, A. C. M., Fiszman, R., & Ribeiro, V. J. P. (2007). O uso da Análise Envoltória de Dados (DEA) para avaliação de hospitais universitários brasileiros. *Ciência & Saúde Coletiva*, 12(4), 985-998.
- Lotta, G. S.; Gonçalves, R., & Bitelman, M. (2014). A coordenação federativa de políticas públicas: uma análise das políticas brasileiras nas últimas décadas. *Cadernos Gestão Pública e Cidadania*, 19(64), 2-18.
- Menezes, D. B. (2017). Provisão de habitação de interesse social nos municípios gaúchos: resultados de programas federais entre 2007 e 2016. *Indicadores Econômicos FEE*, 44(3), 97-112.
- Ministério do Planejamento. (2014). *Balanço PAC 2-4 anos de execução - 11º Balanço - 2011 a 2014*. Brasília, DF: Author. Retrieved from <http://pac.gov.br/pub/up/relatorio/f9d3db229b483b35923b338906b022ce.pdf>
- Oliveira, V. E. (2016). Saúde pública e políticas públicas: campos próximos, porém distantes. *Saúde Pública e Políticas Públicas*, 25(4), 880-894.
- Pedroso, M. M., Calmon, P. C. P., Bandeira, L. F., & Lucena, R. A. V. (2012). Eficiência relativa da política nacional de procedimentos cirúrgicos eletivos de média complexidade. *Revista de Administração Contemporânea*, 16(2), 237-252.
- Peña, C. R. (2008). Um modelo de avaliação da eficiência da administração pública através do método Análise Envoltória de Dados (DEA). *Revista de Administração Contemporânea*, 12(1), 83-106.
- Ramos, M. P., & Schabbach, L. M. (2012). O estado da arte da avaliação de políticas públicas: conceituação e exemplos de avaliação no Brasil. *Revista de Administração Pública*, 46(5), 1271-294.

Reis, F. N. S. C. (2013). *Programa “Minha Casa, Minha Vida”: estrutura lógica, focalização e percepção dos beneficiários* (Master Thesis). Universidade Federal de Viçosa, Viçosa, MG.

Rolnik, R., Iacovini, F. G. R., & Klintowitz, D. (2014). Habitação em municípios paulistas: construir políticas ou “rodar” programas? *Revista Brasileira de Estudos Urbanos e Regionais*, 16(2), 149-165.

Sano, H., & Montenegro, M. J. F., Filho. (2013). As técnicas de avaliação da eficiência, eficácia e efetividade na gestão pública e sua relevância para o desenvolvimento social e das ações públicas. *Desenvolvimento em Questão*, 11(22), 35-61.

Silva, C. F., & Alves, T. W. (2014). Dinâmica dos financiamentos habitacionais nos municípios do Rio Grande do Sul de 2006 a 2010: uma avaliação do Programa “Minha Casa, Minha Vida”. *Revista de Administração Pública*, 48(1), 27-54. Retrieved from <https://doi.org/10.1590/S0034-76122014000100002>

Silva, M. C., Silva, J. D. G., Borges, E. F., & Souza, F. J. V. (2015). Ranking de desempenho de municípios: elaboração de um único índice a partir do IDHM, IFDM e IRFS. *Veredas Favip*, 8(1), 62-78.

Souza, C. (2003). “Estado do campo” da pesquisa em políticas públicas no Brasil. *Revista Brasileira de Ciências Sociais*, 18(51), 15-20.

Varela, P. S., Martins, G. A., & Fávero, L. P. L. (2012). Desempenho dos municípios paulistas: uma avaliação de eficiência da atenção básica à saúde. *Revista de Administração*, 47(4), 624-637.

Vedung, E. (2010). Four waves of evaluation diffusion. *Evaluation*, 16(3), 263-277. Retrieved from <https://doi.org/10.1177/1356389010372452>

Veloso, J. F. A., Monasterio, L. M., Vieira, R. S., & Miranda, R. B. (2011). Uma visão inicial dos subsistemas da gestão pública municipal. In J. F. A. Veloso, L. M. Monasterio, R. S. Vieira, & R. B. M. (Orgs.), *Gestão municipal no Brasil: um retrato das prefeituras* (pp. 11-40). Brasília, DF: Ipea.

Ludmila Ferreira Bandeira



<https://orcid.org/0000-0002-7020-600X>

Master in public administration and public policies from the University of Brasilia (UnB); Economist at the National Secretary of Housing of the Brazilian Ministry of Regional Development (SNH/MDR).

E-mail: ludmilafbandeira@gmail.com

Edgar Reyes Junior



<https://orcid.org/0000-0001-7403-5909>

Ph.D. in administration from Unisinos; Adjunct Professor at the University of Brasilia, Graduate Program in Administration (PPGA/UnB). E-mail: prof.edreyes@gmail.com