The check and balance system have avoided death?

A glance of Supreme Court and RDD aplication at Brazillian COVID-19 crisis management.

Abstract The COVID-19 pandemic has been a great challenge for public administration in federative countries. Strategies have ranged from a more cooperative perspective to a more centralized one. In this paper, we investigate the impact of the Judiciary check on the Federal Executive power to shape local policies on deaths and infection in local goverments. To do that, we apply a regression discontinuity design approach for estimating causal inference. at panel dataset for brazillian munucipies during the COVID-19 early stage of pandemic. We explore the Brazilian case, one of the largest countries of the Global South. Our findings show that the check and balance system increased accountability and led to a more efficient policy to face the pandemics challenge. Moreover, despite ideological divergences, mayors were allowed to set non-pharmaceutical measures stricter than the proposed by the Federal Government, which led to fewer cases of infections and fewer deaths.

Keywords: pandemic, RDD, federalism, avaliation, deaths

Resumo A pandemia da COVID-19 é um desafio gigante para países, em especial para países que adotam o federalismo. Observamos entre estes países estratégias como cooperação entre os entes nacionais e subnacionais, bem como, políticas nacionais centralizadoras. Neste artigo, investigamos o papel das tensões do federalismo no Brasil. Especificamente, analisamos o impacto do Poder judiciário Judiciário no sistema de freios e contrapesos que freou a tentativa do poder Executivo Federal de centralizar as decisões, mantendo os entes subnacionais como concorrentes e copatrocinadores dos sistemas e das políticas de saúde públicas. Utilizamos como metodologia a regressão com descontinuidade (RDD). Nossos resultados mostram que o sistema promoveu uma melhora na acountabillity levando uma melhora na eficiência nas políticas o que reduziu os efeitos nocivos da pandemia. Além disso, a despeito de divergências ideológicas locais, prefeituras locais foram restritivas em adotar tratamentos precoces para a COVID-19, propostas pelo Governo Federal, o que levou a uma menor incidência de casos e também mortes.

Keywords: pandemia, federalismo, avaliação, mortes

1. Introduction

The COVID-19 pandemic has posed a great challenge for public administration worldwide. Health systems have been put under pressure everywhere; however, different results have been observed within democratic nations. The government response has differed dramatically depending on how federative institutions have reacted to facing the pandemics' challenges. Despite the colossal debate, there is no consensus about how the best response to COVID-19 was in large federations like Brazil. In this paper, we estimate the impact of the Supreme Court decision to readequate Brazilian coordination framework in health policies out of the existing coordination arenas as a response to the Federal Government denialist approach to the pandemics.

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Christopoulos et al. (2023) explore the connection between equity and efficiency in regional policy and investigates how COVID-19 government responses impact this relationship. Using data from US states in 2020 and a spatial econometric model, the study reveals an inverted-'U' relationship between inequality and efficiency. Moreover, the effect of COVID-19 response intensity on the equity-efficiency link varies based on each state's per capita gross domestic product (GDP) levels.

Therefore, some locals actions may have effect over the COVID-19's public management. The Brazillian Health System (SUS) according de Almeida Lopes Fernandes and Saturnino Pereira (2020) explore the focus is on the government's response to combating COVID-19 and its impact on public financing for subnational health services. The study employs both qualitative and quantitative methods, using documentary and regression analysis. The findings reveal that despite some adjustments to expedite spending, there were no substantial changes in the transfer criteria, which lack sensitivity to epidemiological factors. Resource allocation is mainly determined by factors such as population size, local wealth production, and the number of hospital beds. However, the funding design and the allocated resources for COVID-19 response are deemed inadequate considering the scale of the crisis.

In the USA, the federal government left most of the decisions to the states, which produced a wide range of different policies (Kettl, 2020). Benton et al. (2022) shows a mixed picture in the USA with positive results concerning interstate and interlocal relations, while a lack of coordination and efficiency marked the federal-state relations. Not surprisingly, local governments were innovative and took strategic actions to fight the virus, with positive results in the USA and Germany (Dzigbede and Pathak, 2020).

In Brazil, the president's political stance on reducing effective social isolation had the opposite effect compared to the Spanish federal power. No centralization and coordination from above has been seen (Abrucio et al., 2020).

Upon initial examination, the dataset reveals at 1 a significant heterogenous effect concerning the impact of the pandemic. While it appears that the poorest areas exhibited a higher death rate ratio, the data also indicates that certain larger municipalities in the Southeast (a relatively affluent region of Brazil) and the South (the second wealthiest region) experienced an even worse response to COVID-19 in terms of controlling premature deaths.

In some way, it reassured an asymmetric autonomy with intense competition instead of cooperation among federal and subnational governments as Brazilian health policies are supposed to be done within the Brazilian Universal Health System – UHS (Sistema Universal de Saúde – SUS). As a result, the Brazilian case mirrors the American tension between states and the Federal Administration; however, the pandemic reshaped federal relations in a way not seen in the USA, as there were much less previous cooperation among states and the federal government in the health policy of the North Atlantic country. (Abrucio et al., 2020).

An extensive literature has explored Brazilian democratic federalism. The 1988 Constitution was a founding moment when the centralizing and hierarchical pattern of the relationship between the federal government and subnational bodies was reframed. Two different processes marked the dynamics of Brazilian federalism. On one side, efforts to overcome the fragmented monetary and fiscal authority structure underlying the hyperinflationary trend and the moral hazard problem dominated the 1980s. On the other hand, the institutionalization of the principle of shared sovereignty entrenched in the Constitution through the partial redistribution of taxing and spending powers to subnational bodies is an essential condition for implementing the range of social policies allotted to them effectively (Souza, 1999; de Oliveira and Gomes Cameiro, 2012; Souza, 2005; Armijo et al., 2006; Fernandes et al., 2022; Souza, 2005).

In the years that followed the 1988 Brazilian Constitution, an unprecedented institutional

Figure 1

Deaths by 100k habitants
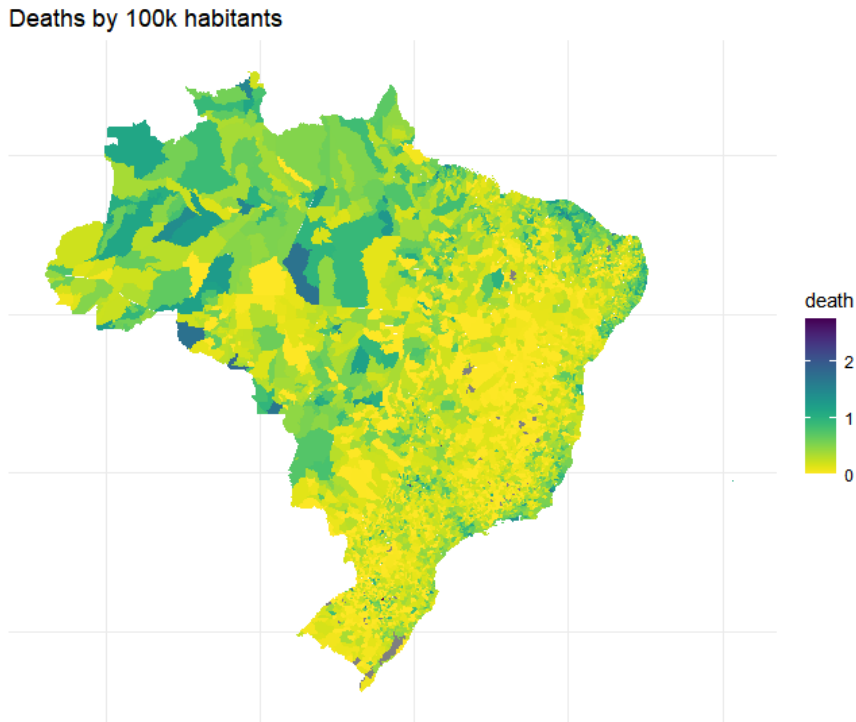
investment was launched designed to implement the universal public health system (Souza, 1999; de Oliveira and Gomes Cameiro, 2012). This effort mobilized the federal government and subnational bodies, such as states and municipalities. It led to a reorganization of previous competencies and demanded a new funding model to give effect to the mandatory transfers created by the Constitution (Machado, 2013). There were immense challenges in building the infrastructure required to deliver health services (Paim et al, 2011). Local governments primarily addressed this task. Upper levels oversaw coordination and funding. Consequently, when the pandemic started, the country had a fully institutionalized federal collaborative health systemin the UHS (Montgomery et al., 2000).

In theory, the UHS would allow strategies to address the disease raging from the German cooperative case to the Spanish centralized case. Despite this fact, while the Brazilian institutional design is closer to the European federative welfare state, Bolsonaro's presidency closely followed Trump's administration's strategy of downplaying the disease (Yamey and Gonsalves, 2020). That makes the Brazilian case unique since it puts together a right-wing negationist federal government in a context of a national health system with strong and robust structures for federal cooperation regulated by the Federal Government. In other words, all this happened within an established federal framework where check and balances tools had a clear role to play between the multiple federative levels. President Bolsonaro has not achieved a faster and more exemplary leadership during the COVID-19 crisis due to the federal government's poor policy response against the dissemination of the coronavirus and the political pressure against mass vaccination (Castro et al., 2021).

As such, Brazilian federative institutions have promoted a ridge at Bolsonaro's will during all pandemics. The Brazilian Federal Supreme Court (FSC) consistently upheld subnational social distancing policies that the Bolsonaro administration firmly opposed (Cameron et al., 2023).

In the first year of the pandemic, the FSC declared that local and state governments had

the autonomy to issue stricter policies than the federal ones to combat COVID-19. It includes the expected health policies delivered by the UHS and also non-pharmaceutical interventions (NPI). In this way, we find in the health area an exogenous variation to the previously established federative system. The pandemic in association with the denialist policies of the federal government promoted a counter-reaction of the horizontal control and federative institutions, creating specifically for the policies of combating the dissemination of the coronavirus a kind of parallel federalism, contrary to what was previously established in the Constitution and what was defined by the collaborative structure of the UHS (Mendes et al., 2022)

Our paper explores this exogenous variation (Jiraporn et al., 2014; Sharkey, 2010; Cellini et al., 2010; Giroud, 2013). Through our analysis, we sought to determine the impact of the Judiciary's intervention on the Federal Government's ability to exercise its health policy powers and influence local responses, particularly in Brazilian municipalities. Our primary focus was on assessing the changes in the number of COVID-19 cases and fatalities resulting from the divergence in policies brought about by the FSC's decision. By examining this context, we aimed to shed light on the implications of the Judiciary's involvement in shaping public health strategies at the local level and its potential effects on curbing the spread of the virus and mitigating its impact on communities.

Several noteworthy observations regarding political coordination and influence under COVID-19 outcomes can be seen through the heterogeneity of votes in support of President Bolsonaro. This heterogeneity suggests that municipalities allied with the federal incumbent may experience discoordination with state-level healthcare policies.

The variance in voting patterns across different municipalities may reflect differing political stances and affiliations at the local, state, and federal levels. Such discrepancies in political alignment might contribute to inconsistencies in the adoption and implementation of health care policies aimed at combating the pandemic.

This situation could lead to challenges in effectively coordinating responses to the COVID-19 crisis, as political alliances and affiliations may influence decision-making processes and hinder a cohesive and united approach to tackling the pandemic at all levels of government. Consequently, this potential discoordination may impact the efficacy of public health measures, resource allocation, and the overall management of the pandemic in specific regions.

We are investigating the phenomenon of undesired discoordination (as show by 2) by hypothesizing that, during the COVID-19 crisis, municipalities that either support or do not support the Bolsonaro presidency may exhibit orthogonal relationships with both the FSC decision and Bolsonaro's chosen course of action. This hypothesis is based on non-scientific interventions, which could have influenced the responses and actions taken by different municipalities.

Our investigation seeks to unravel the intricate relationship between political support, judicial decisions, and governmental actions in response to the pandemic. Through rigorous analysis, we strive to gain insights into the impact of non-scientific interventions on public health outcomes and contribute to a deeper understanding of the complexities inherent in managing public health crises in a politically charged environment. As academics, it is our responsibility to approach this research with objectivity and empirical rigor to inform evidence-based policies and decision-making in the context of COVID-19 and potential future challenges.

The Brazilian Federal Supreme Court has made a landmark decision regarding the treatment and social isolation measures to be taken in the face of the COVID-19 pandemic. In response to a petition filed by various political parties and health care organizations, the court has ruled that the federal government must take immediate action to combat the pandemic by implementing social isolation measures and providing access to adequate medical care.

The decision was made in response to a petition filed by political parties and healthcare

Figure 2

Share of vote at Bolsonaro
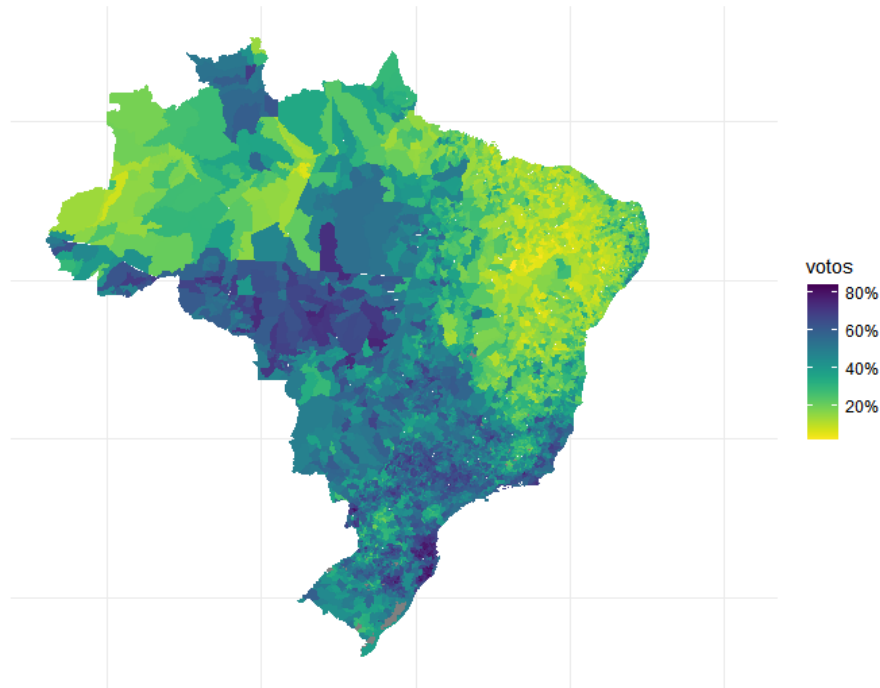
organizations who were concerned about the lack of a coordinated response to the pandemic from the federal government. The court ruled that the federal government must take immediate action to combat the pandemic by implementing social isolation measures and providing access to adequate medical care. The Supreme Court also recognized the importance of state and municipal government's role in implementing measures to combat the pandemic and stated that the federal government must work collaboratively with these entities.

The FSC decision was influential in the early months of the pandemic because it limited Federal Government's attempts to weaken workplace closures and other NPI that could reduce disease dissemination. We define NPI as measures to reduce the spread of the virus such as hand washing, social distance, travel restrictions, school closures, restriction on businesses, closures of activities in places or sector (lockdowns), mask mandates, and restrictions on working and socializing (Biehl et al., 2021; Wang et al., 2021; Pinheiro et al., 2020; Nohara, 2020).

To the best of our knowledge, this is the first paper that assesses the causal impact of the role played by the Supreme Court in readequating Brazilian federalism during and about the pandemics. We apply the RDD methodology suggested by Calonico et al. (2014b,a); Calonico, Cattaneo, Farrell and Titiunik (2019) using the bias correction.

After that, we apply the difference-in-difference estimation proposed by (Donald and Lang, 2007). Our findings show that the impact on the number of deaths and infected is enormous and significant. Even considering that we are looking at the beginning and, therefore, the fast growth rate phase of COVID-19, we might estimate a reduction in two main outputs of the sanity crisis.

This paper has six sections. After this introduction, the Brazilian federative issue concerning pandemics is discussed in the next section. Then, in the third section, the data and methodology are detailed. Next, we present our results. Finally, in the fifth section, we discuss our findings, followed by a conclusion final section.

2. Accountability and federalism during pandemics in Brazil

Brazil was in an excellent position to respond to the COVID-19 pandemic. It was geographically distant from the Chinese epicenter and had a comprehensive and disseminated unified universal healthcare system. de Oliveira et al. (2020) defend to ensure an effective response, the Ministry of Health worked to increase testing capacity, including RT-PCR and rapid serology tests. They also employed technology, such as artificial intelligence, for active case finding and conducted phone surveys to gather health-related data. Telemedicine was introduced to provide medical consultations and support research, innovation, and development efforts. Despite challenges, the paper highlights the strengths of the SUS in coordinating public health actions and providing healthcare services. The success of controlling the pandemic requires collaborative efforts from all levels of government, the healthcare workforce, and society at large. The protection of vulnerable groups, such as the elderly, remains a priority. The paper emphasizes the significance of adhering to preventive measures, as well as the necessity of revising and adjusting strategies continually. By working together and relying on the strength of the SUS, Brazil can overcome the pandemic and build a better, more resilient future.

According to the research conducted by Dias-Godoi et al. (2022), the argument for implementing vaccination measures and non-pharmaceutical interventions to prevent the spread of COVID-19 is crucial. The study highlights that the vaccine market in Brazil amounts to 5 billion, constituting approximately 35% of the total budget allocated to the Health Ministry of the country. This underscores the significant financial investment required for effective vaccination strategies and emphasizes the importance of leveraging both vaccines and non-pharmaceutical interventions to combat the pandemic effectively. As a result, policymakers and health authorities need to prioritize and allocate resources thoughtfully to ensure comprehensive and successful public health responses.

Touchton et al. (2021) analysed the Brazilian health system's response to the COVID-19 pandemic, focusing on non-pharmaceutical interventions (NPIs). Daily information on 10 NPIs, aimed at promoting health risk awareness and encouraging distancing and mask usage, was collected for eight countries in the Americas. The researchers analyzed the adoption of these policies across Brazil's 27 states over time, assessing their timeliness and rigor from the date of the first COVID-19 case. The findings indicate that Brazil's national NPI response was the least stringent among the countries studied. Due to the absence of a unified federal response, the implementation of NPIs across states was neither consistent nor synchronized. The study reveals wide variation in state-level NPI implementation, with policies influenced by political affiliations of the governors. Opposition governors tended to implement earlier and more stringent measures compared to those supporting the Bolsonaro administration. The research emphasizes the importance of a strong and unified national response to effectively combat the pandemic and ensure the safety and health of the population.

Regardless of the balance between Brazilian subnational units and the Federal government at any specific point in time, during the pandemic of COVID-19, subnational units assumed the main protagonism, based on the FSC path-breaking decisions. State governors and city mayors from all across the political spectrum broke with the federal government and continued using NPI despite political pressures from above. Vieira et al. (2023) highlight the surprisingly proactive response by state governments given that state level had less involvement in health policy decision than the Federal and municipal level governments.

The dispute later went to the Federal Supreme Court, and on April 15th, the court ruled to guarantee the autonomy of sub-national governments in defining harder stringency policy levels. However, the divergence between the federal and subnational governments only intensified as the disease advanced (Abrucio et al., 2020).

The court's decision indicates that the upper levels of government could establish the minimum level of rigor, as Brazil has autonomous states and municipalities. The lower entities are free to adopt more stringent policies than the upper level but are prohibited from implementing weaker policies. In contrast, the highest authority, the president, has no legal instruments to make the NPI of subnational entities less stringent besides using political pressure.

Figure 3
Diagram of Health and NPI Policies in the Brazilian Federation
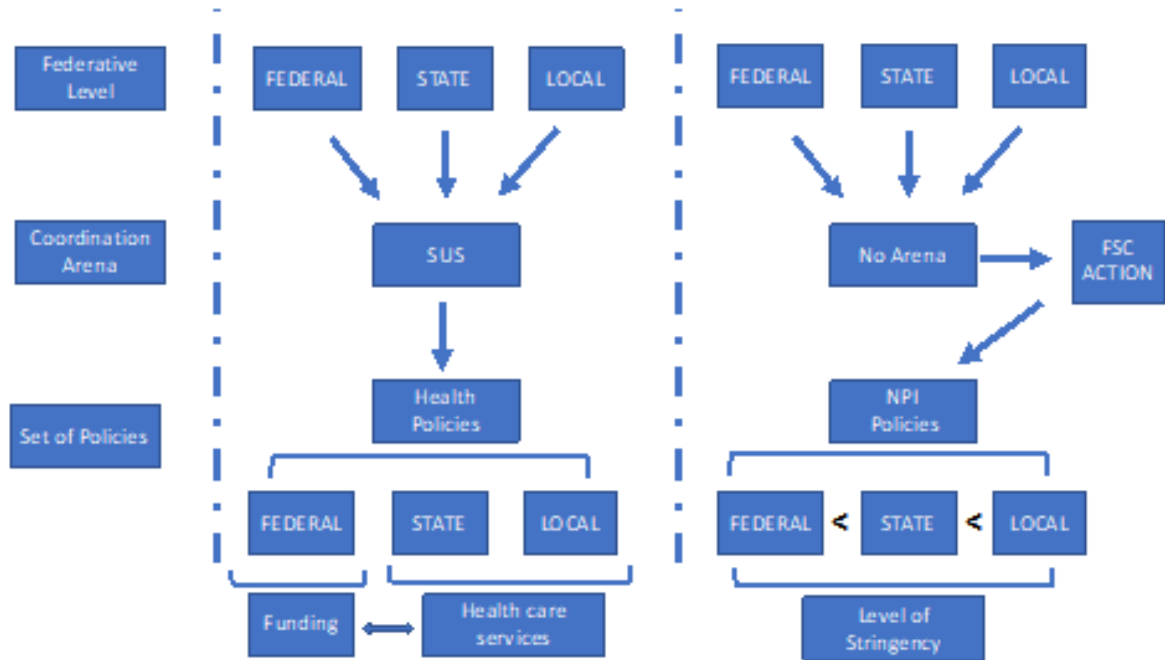
Hence, we propose the hypothesis that the intervention of the Judiciary in the Brazilian federative dispute during COVID-19 pandemics in favor of the adoption of more severe NPI by subnational governments had a direct effect on the reduction of cases and deaths caused by COVID-19 in Brazilian municipalities. It reduced the scope of the federal government's responsibility, focused on reducing the short-term negative economic effect, and pushed local authorities' policies as they were more sensitive to health issues.

3. Methodology

We aim to assess the impact of the FSC decision on NPI competences and responsibilities on the number of cases and deaths caused by COVID-19 in Brazil. As no experimental design is possible, we apply a Regression Discontinuity approach for a panel data structure in the same way as Ansolabehere and Schaffner (2014) and Silva et al. (2022) do, which would guarantee a causal estimation for a local group of evidence.

Our treatment variable D_{it} is a dummy variable that equals one after the Supreme Court's decision and zeroes otherwise. All Brazilian municipalities formed the control group ($D_{it} = 0$) at the weeks before the Supreme Court's decision. The running variable is the number of weeks before and after the centralized proposition at the Supreme Court's decision week:

$$D_{it} = \begin{cases} 1 \text{ if } Week_t \geqslant 2020-04-19, City_i = i; \\ \\ 0 \text{ otherwise} \end{cases} \tag{1}$$

The effect of the Supreme Court's decision on Y_t, the dependent variable representing the number of deaths by 100 thousand inhabitants or the number of cases. We estimate the LATE around the cutoff. It can be written as:

$$\beta = E(Y_t Week_t^+) - E(Y_t | Week_t^-) \tag{2}$$

This paper applies the estimator suggested by Calonico, Cattaneo and Farrell (2019) to estimate , a non-parametric estimation by local linear regression. This metodology present evidence that the non-parametric estimation by local linear regression usually produces too large bandwidths, evidencing a large asymptotic bias term, also, propose a methodology to correct for the bias, which we apply in this paper. We access the ATE (avarege treatment effect) throught the classical equation:

$$\beta_{RDD} = E(Y_i^1 - Y_i^0 | X_i = x, C_i) \tag{3}$$

and calculate the confidence interval that is based on "bias correction", using the robust estimation. We compare the results using four methods: Diff-in-Diff (DID), RDD conventional, bias-corrected, and robust.

Our primarily equation is:

$$Y_i t = \beta_0 + \beta_1 T_{it} + \beta_2 D_{it} + \beta_{RDD} T_{it} D_{it} + \Sigma \omega_{it\,j}^j + \varepsilon_{it} \tag{4}$$

Where T_{it}: 1: weeks after the decision of the FSC of 16th April, and 0 otherwise. D_{it}: epidemiologic weekly post FSC decision. For control ω_{ij}: the social isolation index an Bolsonaro´s share of voting during the 2018 election 1st round. Therefore, the difference between the two approaches, is that there isn´t at RDD the hypothesis of parallel trajectory. For DID be consistent, is necessary that unobservable factors ε_{it} had to be tha same time path between treatment and control group of municipies. We use this estimation methodology in order to test if there is or not a preemptive effect of FSC decision, or the effect is just a politic support matter. For RDD, in the other hand, there is no need of a "good" control versus treatment groups. We use the same group, and promoted before and after the cutoff as a control vs treatment. We applied the two approaches using as a control the share of votes at president incumbent and the social isolationism index. The votes at incumbent represent a complier index for presidential announcements against the WHO, and strongly advocating medicines without any scientific evidence. The social isolationism index represents a complier index for local community, specially at first quarter of pandemic, in respect of WHO and locals governments, that are more accountable for public health crisis.

4. Dataset

We drew on an original dataset covering Brazil's 5,570 municipalities to evaluate the connection between the centralization of policy decisions and the results of COVID-19. Our dataset is composed by 131 thousand observations, composed by cities and weeks after COVID-19 crisis. Data on COVID-19 results were collected by BRASIL-IO (2020). Brazilian state authorities publish detailed data on daily infections and deaths caused by COVID-19. Brasil-IO is a non-government organization that collects data from the states and publishes data at local and national levels. It daily compiles epidemiological bulletins from the 27 State Health Departments and provides a database with the historical series of confirmed cases and deaths by the municipality. Using state-collected data is of fundamental importance since the federal government, on several occasions, has taken measures to jeopardize the transparency of the Brazilian Ministry of Health (Silva, 2020).

Table 1
Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Week	131,627	13.877	7.708	0	7	21	26
Deaths rate	86,918	0.042	0.113	0.000	0.000	0.037	1.000
confirmed	86,918	310.220	2,788.771	0.000	5.000	128.000	250,171.000
isolated	118,59	0.400	0.055	0.154	0.365	0.434	0.760
votes 2018	131,627	0.387	0.193	0.019	0.199	0.551	0.839

Note: week: epidemiologic week, deaths rate: the number of deaths/cases by week and by cities, confirmed: the number of cases, isolated: isolated index by cities by weeks, , votes 2018: the incumbent president share of votes. Source: The authors, 2023.

Social Isolation compliance is measured by geo-located data from cellphones. InLoco is a Brazilian technology company that provides intelligence that collects anonymous location data from devices. It monitors more than 60 million mobile phones associated with mobile companies in the country. Individual information is not shared, only average levels of social isolation by the municipality. The Social Isolation Index was developed by In Loco® and is publicly accessible to help combat the COVID-19 pandemic in Brazil, characterizing the collection of secondary data. The index is measured by the startup's software and occurs through the percentage of mobile devices that remained within a radius of 450 meters from the location identified as home. In addition, this index measures the percentage of the population that avoided commuting because of the pandemic.

It is conceivable to gauge the potential impact of lesser or higher ideological proximity with the national NPI strategy based on the city's vote share for Bolsonaro. Even if we are not working on a sharp discontinuity design, the compliance and defyer idea can still be applied.

Defyer: cities that refuse to abide by the FSC's ruling Cities that will abide by the FSC ruling are compliers.

Yet, we may argue that the Always Taker cities, which always increase NPI rigor, and the Never Takes cities, which always act in opposition to what the federal government decided, provided the finest RCD (Random Control Design) information for our essay. Without doing any experiments, we may contend that the vote totals for Bolsonaro are connected or even support a causal relationship between the four groups.

The RDD model is still non RCD that suffer from bias of selection. Yet, misspecifications due to non-linearities and potential interactions among observables can be ruled out. The method are improved by Calonico, Cattaneo and Farrell (2019) that correct the bias at inference. And, the outcomes of individuals just above and below a threshold or cutoff point, to estimate the effect of the intervention or treatment, and provided the best non RCD approach.

5. Results

Regression discontinuity is a research design in which a pre-specified cutoff value on an observed characteristic of the participants determines whether they receive an intervention. The time decision effect is a sharp design. The results indicate that the FSC decision implied a significatively discontinuity when the mayors and governments had the freedom to choose between the federal prescription of treatment or any other stricter policy.

Those simple degrees of freedom promoted a significatively effect on deaths and infected cases, as described in Figures 2 and 3. Those curves describe how the discontinuity performs over the running variable (RV). It peaked over the epidemiologic week of COVID-19 on April 4th, 2020. The same week as the FSC decision.

Table 2 shows the estimated effect is 1.1% fewer deaths every week and every city after the FSC decision. The reliable estimation represents that 110 thousand Brazilian citizens' deaths were avoided due to the FSC intervention and reconfiguration of the federative relations to implement NPIs to combat the dissemination of the new coronavirus.

After performing the RDD, we check if the Diff-in-Diff estimator also describes the same signal and trajectory. The results indicated a reduction in the death rate per 100 thousand at 0.011 for each city every week. The DID estimator indicates a reduction of 0.061 deaths per 100 thousand. Results converge at the same signal and significance. For DID, the results indicated that there is a positive and huge effect after FSC decision. This indicated that, the signal of omitted variable bias is contrary of our RDD_{ATE} estimation in Table 2 and 3, for death rate and confirmed cases both.

Figures 4 and 5 show the RDD effect by simulating what happened without the FSC decision. The described simulated paths in red, and the actual in blue, indicate a significant reduction in deaths and cases/infected. The results come from a simulation estimation of what would happen in average cities without the intervention of the FSC. The FSC intervention represents a capacity of damage control at the very beginning of the COVID-19 crisis, just in the second month of the pandemic. The larger amount of political debate over these matters, including a non-scientific approach, might be a decisive role in this very early decision.

Figure 4
Simulation of FSC decision over Death Rate
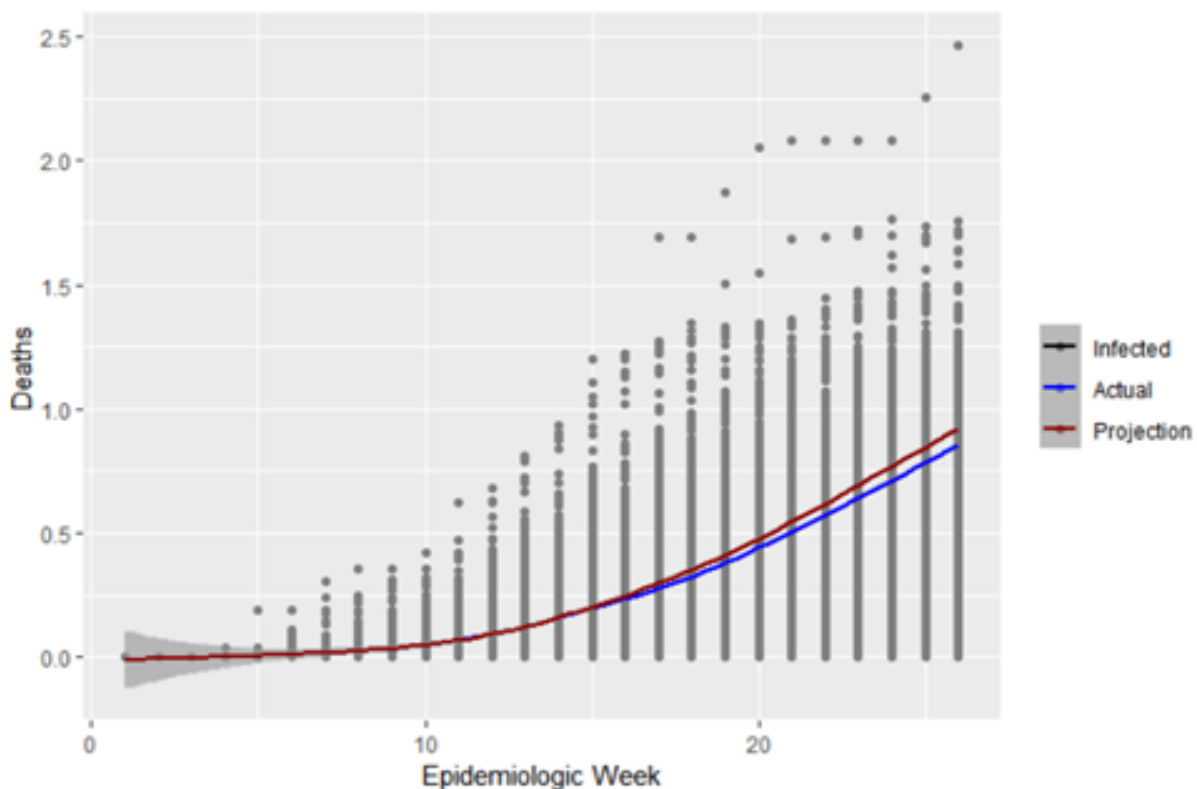
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Federal governments are structures of governments where different policies can be imple-

Table 2
Results of RDD and Dif in Dif estimation

	Death			Intected		
	DiD	RDD		DiD	RDD	
isolated	0.080*** (0.029)	Conventional	-0.006* (0.004)	761.943*** -122.581	Conventional	-28.046*** -13.662
FSC decision date	0.152*** (0.003)	Bias-Corrected	-0.011*** (0.004)	779.398*** -11.744	Bias-Corrected	-45.952*** -13.662
Votes for Bolsonaro	-0.015 (0.011)	Robust	-0.011*** (0.005)	-32.037 -44.873	Robust	-45.952*** 17.861
DD parameter	-0.061*** (0.014)			-23.139 -57.271		
Constant	0.007 (0.013)			-219.473*** -52.695		
Observations	24,983	Observations	73,033	24,983	Observations	73,033
R2	0.112	Eff. Obs.	11,171 17,278	0.156	Eff. Obs.	7,686 12,773
Adjusted R2	0.111			0.156		
Residual Std. Error	0.201 (df = 24978)	Rho (h/b)	0.552	845.365 (df = 24978)	Rho (h/b)	0.571
F Statistic	784.359*** (df = 4; 24978)			1,151.352*** (df = 4; 24978)		

Note: The authors, 2023. $p<0.1$; $p<0.05$; $p<0.01$

Figure 5
Simulation of FSC decision over Infected
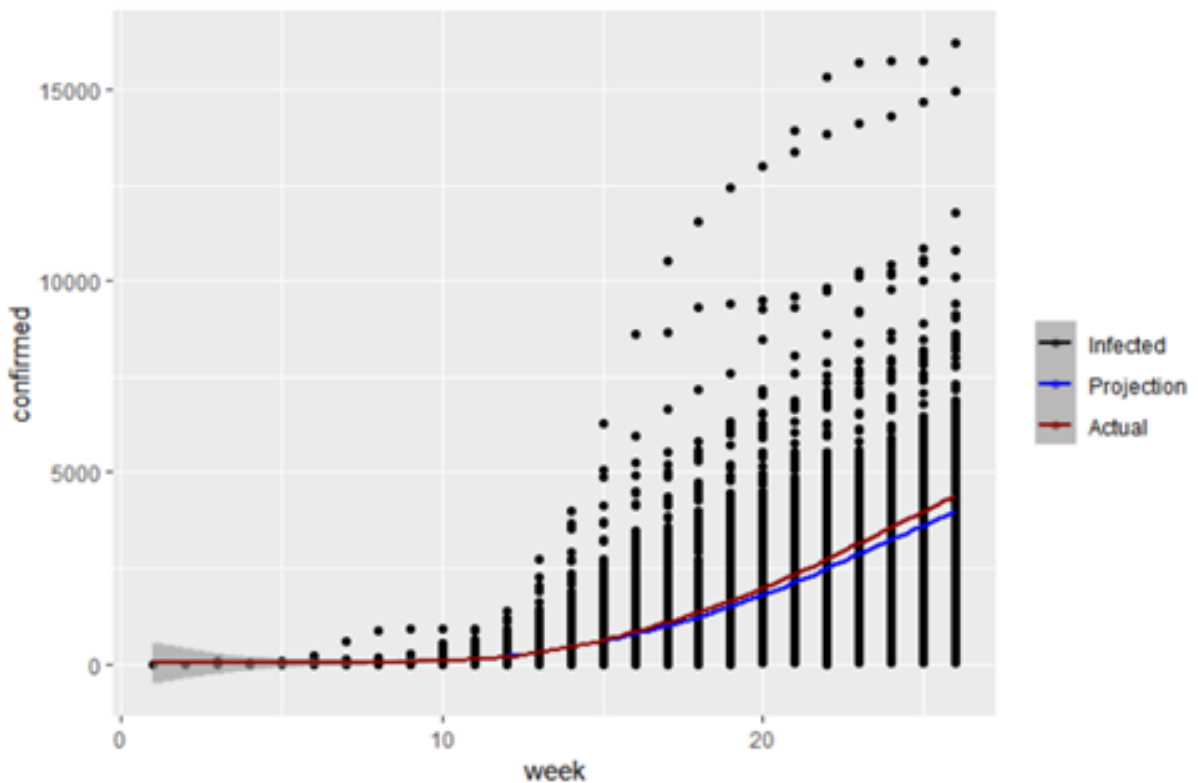
mented to address the same kind of issues. However, this rich environment can also be a challenge when there is insufficient coordination. For instance, if good local policies cannot be picked up to be scaled and bad ones cannot be eliminated, federations can exhibit an overall low performance in public policy (Khan and Giessen, 2021). experimentalism could be taken to addressee the disease in any federation.

Brazil has implemented a national health system with high degrees of institutionalization and adequate tools for implementation. Although local governments are independent and run by elected officials, municipal health policies must be done within the SUS system, primarily because of how it is funded, and its services are delivered.

However, when the pandemic started, NPI measures were essential to decrease the pressure on the health system, and these were implemented by other structures of the local government outside the national health system. This lack of regulation led the federal government to run these above policies to focus on the economic side.

The FSC decision, in this case, transferred responsibility from the federal government, which mainly was focused on reducing the economic downturn, to local governments, which are, at the end of the day, the level of government in charge of health services. Despite any ideological stance, this pressure led mayors to set NPI levels stricter than the ones which the federal government proposed. In some way, the Brazilian FSC increased accountability and led to a more efficient policy, in terms of the reduction of deaths and confirmed cases, to face the COVID-19 challenge.

Our results clearly show this. We found an estimated effect of 1.1% fewer deaths every week and every city after the FSC decision. It represents a total of 110 thousand avoided deaths. About COVID-19 cases, the estimated impact is a weekly average reduction of 46 thousand

people or a global reduction since the decision of 2,5 million. In other words, FSC increased the system's accountability, leading to fewer deaths and cases.

6. Conclusion

The COVID-19 pandemic has been a great challenge for public administration. Public policy directions differed depending on how federative institutions framed their reaction. Strategies could range from a more cooperative perspective to a more centralized one. Different arrangements could lead to more experimentalism in the delivery of public policies and higher levels of accountability.

Politics are also an important dimension that shapes public policies. For example, some negationist governments downplayed the health emergency, mainly focusing on the economic aspects of the crisis. It led to a divergent set of policies and the intervention of check and balance bodies to solve federative disputes.

In this paper, we investigate the impact of the Judiciary check on Bolsonaro's power to shape local policies on deaths and infection in Brazilian municipalities. We apply a Regression Discontinuity approach that guarantees a causal estimation for a local group of evidence.

It is important to point out that our methodological approach allows for local estimation of the general effect of the FSC decision on COVID-19 outputs. The fact that a general effect exists does not eliminate the possibility of variation across cases. The analysis of heterogeneities in mayors' and governors' responses is an open field of study whose political and socioeconomic determinants need to be better understood.

Our findings show that the check and balance system increased accountability and led to a more efficient policy to face the COVID-19 challenge. Moreover, although ideological divergences exist among Brazilian mayors, they were allowed to set NPI levels stricter than the ones proposed by the federal government. Our results show that the FSC decision clearly saved lives in the end of the day.

Acknowledgments

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