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## MORE THAN WORDS: LEADERS' SPEECH AND RISKY BEHAVIOR DURING A PANDEMIC

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JEL: D10, I31, Z13

Keywords: COVID-19, Health, Coronavirus, Leadership, Persuasion, Risky Behaviour

# More than Words: Leaders' Speech and Risky Behavior During a Pandemic\*

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## Abstract

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*JEL classification:* D1, I31, Z13

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# I Introduction

Leadership is a powerful tool to influence human behavior. From Plato to modern literature in economics (Hermalin, 1998), the sociology of organizations (Weber, 1947), and management (Burns, 1978), scholars widely agree that leadership matters. Leaders can affect individual beliefs and behavior through different channels: by reducing information asymmetries and thus minimizing coordination problems (e.g. Dewan and Myatt, 2008), by setting a social norm (e.g. Acemoglu and Jackson, 2015), or simply by emotionally and symbolically transmitting a message (e.g. Antonakis et al., 2014; Hermalin, 2017).

A growing body of empirical work has specifically shown that leaders can – with their actions, words and example – influence people in different contexts. This may be, for instance, by fostering dishonest behavior among citizens (e.g. d’Adda et al., 2017; Ajzenman, 2020), or by persuading them to increase their contributions to public goods (e.g. Andreoni, 2006; Güth et al., 2007). Yet a crucial but virtually unexplored domain in which leaders may have an important impact is on health-related risky behavior. Information on recommended prevention practices is typically asymmetrical between governments and citizens, and this issue becomes even more relevant during a public health emergency, such as a pandemic. While regular citizens may ignore some best practices from a medical standpoint, they are, more importantly, likely to be unaware of the global spread of the disease and ignore negative externalities. The internalization of the negative externality triggered by personal decisions of (low-risk) individuals may be key to slowdown contagion (e.g. Durante et al., 2020) and, therefore, the role of leaders in this context is critical, above and beyond incentives and institutions.

We aim to bridge this gap in the literature by exploring the effect of a high-profile political leader’s behavior and public pronouncements on citizens’ preventive and risky behavior. We focus on the recent outbreak of COVID-19 in Brazil, a suitable setting for addressing our research question.<sup>1</sup> Since the start of the pandemic, the official response has been notably heterogeneous among the different levels of government. Many sub-national governments have implemented non-pharmaceutical interventions with varying levels of strictness (e.g. Anderson et al., 2020) and recommended adherence to social distancing. In contrast, Brazil’s president has minimized the risks of the disease, while explicitly and publicly contradicting the instructions communicated by governors. On a number of different occasions (e.g., FT, 2020; The Economist, 2020), the president publicly encouraged citizens to go out and thus break social distancing policies.

This context is thus ideal for testing whether the words of a public leader (a head of state) may affect individual risk perception and behavior, with potential negative externalities on the community at large. Moreover, Brazil is a polarized country, in which the president has an almost equal level of strong approval and disapproval from citizens (e.g. Hunter and Power, 2019). We hypothesize that his supporters are significantly more prone to being persuaded by his speeches than are his critics, even in a context of high-stake decisions, such as adherence (or not) to preventive measures recommended by the World Health Organization, Brazil’s sub-national governments, and even the national Ministry of Health.

In order to address our research question, we estimate a two-way fixed effect model at the day-municipality level with leads and lags, to test for pre-treatment and post-treatment effects. We first deploy a social distancing index at the municipal-day level based on granular location data from tens of millions of anonymous mobile devices across Brazil. The index is defined as the proportion of mobile phones in a given municipality that remained within a radius of 450 meters from their habitual home during a day. We then combine this information with

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<sup>1</sup>Brazil is a three-tiered federation with 26 states, a federal district, and 5,571 municipalities.

municipal data from the 2018 presidential election. In our setting, the “intervention” is defined by the interaction of a “pro-government” dummy (based on the municipal support for the current president in the 2018 elections) and the dates corresponding to the events where the president publicly challenged the social distancing policies.

We show that, following public and prominent speeches on the part of the president against social isolation policies (identified using news coverage and social media data – see Section II), the social distancing index immediately falls in those municipalities with a majority of supporters. The effect is significant and persists for at least a week. It is robust to several specifications and definitions of political support and events (such as using a continuous measure based on newspapers’ coverage of anti-isolation messages by the president). We also show insignificant pre-event effects. As a placebo exercise, we document insignificant effects of the president’s speeches on the isolation index when using the official pronouncements in which the president did not give messages against social distancing.

We then present suggestive evidence of different potential mechanisms that could be underlying the main results. First, we show that the effect seems to be driven by municipalities with a higher presence of local media, a result consistent with other papers that emphasize the role of local media in disseminating political news in Brazil (e.g. Ferraz and Finan, 2008; Bessone et al., 2019). Similarly, we show evidence consistent with the effect being driven by municipalities with a larger presence of Twitter accounts – the president is a highly active user of Twitter – a result that suggests the importance of social media in spreading political messages. Finally, we document a stronger effect in places with a larger proportion of Evangelicals, a religious group that represents around a quarter of the population and who not only heavily supported Bolsonaro in the 2018 election and his policies during the pandemic,<sup>2</sup> but also showed a stronger approval of Bolsonaro’s handling of the pandemic (Folha (2020)).

We complement the empirical analysis with a simple theoretical model, in which individuals are willing to self-isolate voluntarily when the probability of contracting the disease is tangible. However, people also weigh the contagion risk against income loss and the inconvenience of living in isolation. Thus, voluntary social distancing can keep people at home only when the infection risk starts to become visible and individuals might overexpose themselves to infection. We show how the perceived loss of infection risk – that can be influenced by a leader’s words – changes equilibrium social distancing.

Our paper relates to several strands of the literature. First, it builds on studies examining the role of leaders in shaping people’s beliefs and behavior. Although economics has traditionally focused on transactional leadership (e.g. Burns, 1978) – incentives as the main channel through which the principal can induce behavior among the agents (e.g. Lazear and Rosen, 1981; Holmstrom and Milgrom, 1994) – there is a growing theoretical (Acemoglu and Jackson, 2015) and empirical literature that explores how leaders can motivate followers, through speeches and exemplary behavior, to voluntarily behave in certain ways. Ajzenman (2020) shows that when a corruption scandal involving a political leader is revealed in Mexico, citizens become more dishonest (results consistent with those of d’Adda et al. (2017)). In a different setting, Antonakis et al. (2014) demonstrate that listening to a leader’s charismatic speech can induce prosocial behavior among workers. Bassi and Rasul (2017) show that the 1991 Pope’s visit to Brazil had a significant effect on beliefs and behavior related to fertility.

A subset of this literature is specifically focused on behavioral change promotion in public health through opinion leaders. Most of the papers in this field focus on the identification of efficient channels for spreading positive change in health behavior, such as through celebrities or peer leaders (Kearney and Levine, 2015; Alatas et al., 2019; Banerjee et al., 2020). In a

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<sup>2</sup>70% of Evangelicals voted for Bolsonaro. See Folha (2018).



context similar to ours, [Bursztyn et al. \(2020\)](#) show that prevention messages broadcasted on TV shows have had a significant impact on viewer behavior during the COVID-19 pandemic in the US. We complement these papers by focusing on a particularly relevant type of leader – the head of state – and by showing how his words have affected citizens’ risky health-related behavior.

We also contribute to the very recent literature on the COVID-19 pandemic and social distancing compliance. [Barrios and Hochberg \(2020\)](#) document a partisan divide in compliance with social distancing, results consistent with those of [Allcott et al. \(2020\)](#) and [Kushner Gadarian et al. \(2020\)](#). In a paper closer to ours, [Grossman et al. \(2020\)](#) show that recommendations to stay at home by governors in the U.S., which preceded actual orders to do so, led to a large and significant reduction in mobility. The magnitude varied by the political position of the population and the governors. Our paper builds on this literature by showing how the actions and words of the president can affect the behavior of his followers, regardless of the actual legal or official policies in place (e.g., “stay-at-home” orders).

The paper is structured as follows. Section [II](#) introduces the context and chronology of events in Brazil. Section [III](#) discusses the theoretical model of social distancing compliance. Section [IV](#) describes the data. Section [V](#) presents the empirical model and the main results and Section [VI](#) concludes.

## II Context and Chronology

Since the outbreak of the COVID-19 pandemic, most nations have actively implemented non-pharmaceutical interventions to reduce the spread of the virus, ranging from travel restrictions, home isolation, or even mandatory quarantines. These interventions aim to “flatten the curve” in order to keep the number of critical cases at a manageable level and thus avoid the health care system’s collapse. Although some of the measures in place are beyond individuals’ control (e.g., school closures), the level of compliance largely depends on citizens’ actions, particularly in countries where isolation is not legally enforced.

In this section, we discuss the key events regarding Brazil’s response to the pandemic focusing on our period of analysis (February 01 to April 14, 2020 — see Section [IV](#) for details on data availability). The official response to the pandemic on the part of the Brazilian government has been heterogeneous and uncoordinated, in part because in Brazil’s federation, state governments have real power to implement their own social distancing policies (Figure [I](#) shows that every state government adopted social distancing policies but the timing varied across locations) and the federal government’s view differed from that of the sub-national governments.

As cases began to rise, President Bolsonaro minimized the pandemic. He encouraged people to go out and frequent stores, and even attend public demonstrations in the streets, contradicting his own health minister. Bolsonaro was dismissive of the effects of the virus, calling it “just a little dose of flu” (see [The Wall Street Journal](#), 4/2) and a “media trick” (see [The Guardian](#), 3/23). His behavior was so controversial that it rapidly attracted the attention of dozens of international media outlets, including [The Times of India](#), 3/16, [The Economist](#), 3/26, and [The New York Times](#), 4/1, among many others.

Despite such opposition to drastic social distancing measures, the president’s messages have not always been uniform. Before we start describing the empirical narrative summarizing his actions and public pronouncements relative to the COVID-19 pandemic, we first develop a daily indicator of news coverage based on [Di Tella and Franceschelli \(2011\)](#)’s methodology. The goal

is to use an objective and systematic approach to identify key events (those that were more salient) in regard to Bolsonaro’s opposition to social distancing interventions. More specifically, for each of the top-4 newspapers in terms of daily circulation – Folha de Sao Paulo, O Globo, O Estado de Sao Paulo, and Correio Brasiliense – we measured the share of their front-page area that reported: (a) Bolsonaro undervaluing the disease or (b) speaking (or acting) against social distancing policies. In Figures B.1 and B.2 (Appendix B) we show an example of the type of news we classified in each category and the area that we consider for each, which includes the main text, the head-line and any accompanying figure (if available).<sup>3</sup>

In Figure II (graph “a”) we show how this variable evolved through time, using a moving average of 2 days. There are two events that clearly stand out: Bolsonaro’s participation in the public demonstrations of March 15 (where by joining the crowds he broke public health guidelines) and his official pronouncement on March 24’s night (pushing to end social distancing measures implemented by several sub-national governments).

In what follows, we report the pandemic-related events from Bolsonaro’s actions and speeches, from the beginning of the pandemic in Brazil until April 14. It is important to notice that in this period there were five official presidential pronouncements (all of them related to the pandemic). This type of message is particularly relevant because every TV or radio station in the country must mandatorily broadcast the pronouncement. They are thus rare and reserved for especially relevant communications from the president.<sup>4</sup> In Appendix C we include the translation of each of the public official pronouncements during our period of analysis.

- (i) In the first official pronouncement on March 6, Bolsonaro stated that people “must strictly follow experts’ recommendations on the best protective measures.” There were no clear guidelines on social distancing.
- (ii) On an official visit to the United States on March 10, the president recognized that there is a international crisis related to COVID-19. On March 12, he appeared with his health minister on television, and both were wearing face masks. Many members of his cabinet who went in the official mission to the United States tested positive for COVID-19. He was therefore with a risk to be infected as he stated on television. The health minister recommended postponing the public protests against the Congress and the Supreme Federal Court (STF) scheduled for the coming Sunday, on March 15.

In the second official pronouncement later that day, Bolsonaro stated that the public demonstrations should be “reconsidered” given the “current events.” Therefore, there was actually no clear message against social distancing.

- (iii) The protests planned for March 15 against the Congress and the Supreme Court took place. Bolsonaro, despite possibly being infected with COVID-19 (his test’s result was released only on March 16), joined one of the demonstrations in Brasilia. He took selfies and fist bumped several supporters, as well as posted a record number of tweets (47) since becoming president. Most of these tweets included videos of the rallies across different cities of the country.

His behavior quickly captured the interest of national and international media. On March 16, a picture of Bolsonaro participating in the demonstration appeared on the front page of the three largest newspapers in Brazil (*Folha de Sao Paulo*, *O Globo* and *Estadao*), with

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<sup>3</sup>As Di Tella and Franceschelli (2011), we took the top-4 newspapers, excluding those that are not released every day.

<sup>4</sup>The text of each of these speeches can be accessed at: <https://www.gov.br/planalto/pt-br/acompanhe-o-planalto/pronunciamentos>.

headlines directly alluding to his actions in relation to prevention of the virus and his “bad example to the nation” (see Figure B.3 in Appendix B as an example). The news reached several international outlets (see FT (2020)).<sup>5</sup> Other newspapers had similar headlines. On March 16, *Gazeta do Povo*, a conservative newspaper in the state of Paraná shows a picture of Bolsonaro taking selfies in one of the rallies.

- (iv) On March 18, Bolsonaro and several of his ministers, spoke with the press and presented policies aimed at mitigating the economic and health impacts of the pandemic. There was no message on social distancing. All ministers and the president were with face masks on this occasion.
- (v) On March 24, the third pronouncement took place. In the first two pronouncements (March 6 and 12), the president gave short speeches and the messages were not related to social distancing. He emphasized the work of the federal government and tried to calm and encourage people to follow the prevention measures recommended by specialists.

Notably, the tone of these messages completely changed in his speech on March 24. This time, Bolsonaro directly referred to the social distancing policies implemented by the sub-national governments. He first emphasized that the risk group was mainly the elderly and argued that there was no point in closing schools. He also stressed that jobs should be maintained and criticized the media for diffusing news on Italy (“a country with a large elderly population and completely different weather”).

He spoke of his personal situation, contending that because of his “history of athleticism,” he need not worry even if he got infected. As with the public protests on March 15 (and unlike any of his previous or subsequent official communications), his speech made the front pages of the main national newspapers the following day, all of which explicitly reported his position against social distancing and contrary to “world trends” (see Figure B.4 in Appendix B as an example). Similarly to March 15, his message reached again international media outlets (see *The Washington Post* (2020a)).

- (vi) In the next official pronouncement on March 31, Bolsonaro’s attitude was more moderate. He cited the World Health Organization, and applauded the policies implemented by the federal government to mitigate the effects of the epidemic together with sub-national governments. If anything, the media’s interpretation was that Bolsonaro was “toning down” his message.
- (vii) Finally, on April 8, the president’s pronouncement maintained the same character of the previous one, praising his policies and the coordination of the federal government with the states. Again, the media interpreted that Bolsonaro was “toning down” his message.<sup>6</sup>

The description above suggests that the intensity of Bolsonaro’s speech and behavior against social distancing was certainly not homogeneous and, in some moments, even confusing. However, the narrative seems to confirm what we observed analyzing the news coverage index.

To further corroborate the identification of the main events, in Figure II (graph “b”) we show that March 15 and 25 were key dates relative to Internet searches in Google for the words “protests” and “Bolsonaro pronouncements,” respectively, consistent with what the indicator of news coverage shows.

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<sup>5</sup>Each of the main newspapers’ front pages can be downloaded from <https://vercapas.com.br>.

<sup>6</sup>Folha, the largest newspaper in Brazil, for example, stated on April 1 that “Bolsonaro changes his tone, and speaks about a pact and a challenge for this generation”, while O Globo stated that “Cases in the country hit a record, and Bolsonaro, isolated, moderates his tone”.

Finally, we analyze all tweets of Bolsonaro and his three sons (who are also high-profile politicians) and create an index based on retweets and likes of their anti-isolation messages.<sup>7</sup> The twitter indexes (graphs “c” and “d” of Figure II) are defined as follows. We first assign a 1 to every tweet that we classify the content as being against social distancing/isolation (this includes, for example, the tweets in which he challenges the distancing recommendations by assisting to public gatherings or when he explicitly urge governors to open schools), a 0 if the tweet is neutral or a -1 if in favor of social distancing (for example, if they promote wearing a mask). Then we weight this simple index using the number of likes (or likes plus retweets), normalized over the entire sample,<sup>8</sup> to create an index between -1 and 1 capturing both, content and reach. In the final step, we aggregate the indices (which were so far tweet-specific) to daily values.

Using likes (a neater measure, as retweets could be from people criticizing) or likes plus retweets, the pattern is confirmed: March 15 and March 25 seem to be the most prominent dates regarding the spreading of the anti-isolation message.

In our baseline specification, we analyze the impact of these two specific events on citizen’s behavior. As we explain in Section V, in an alternative model we also use the continuous version of the news coverage index to analyze how different intensities of the anti-isolation message triggered a behavioral change regarding social distancing.

### III Theoretical Model

We now present a simple model to characterize how differences in the perceived risk of infection, and the cost associated with it, influence equilibrium social distancing and the spread of the disease. This is a stylized model and a modified version of the basic SIR (Susceptible (S), Infected (I) and Recovered(R)) framework presented by [Kermack and McKendrick \(1927\)](#) and extended by [Kremer \(1996\)](#) to the case of equilibrium social distancing.<sup>9</sup> We introduce heterogeneity in the perceived expected loss of being infected. Since individuals may be uninformed about the severity and spread of the pandemic, a leader’s words can affect their perceived expected loss from the disease.

Time is continuous and the population size is normalized to one such that  $S_t + I_t + R_t = 1$ . In the initial period, the number of recovered (or immune) individuals is  $R_0 = 0$  and a small measure of individuals get infected such that  $S_0$  is just below 1 and  $I_0$  is just above zero. There are  $n \in \{1, 2, \dots, N\}$  types of individuals. The share of type- $n$  agents is  $\pi_n \in [0, 1]$  with  $\sum_{i=1}^N \pi_n = 1$  and their expected perceived loss of being infected is  $L_n$ . Without loss of generality let  $0 \leq L_1 < L_2 < \dots < L_N$ . Agents can take actions to avoid contagion by being vigilant. The social distancing effort of an agent  $n$  is  $v_n$ , which decreases the infection rate, as further described below. In practical terms, this means avoiding going out or visiting relatives, working from home, using masks, more hand washing and cleaning, and so on. The social distancing

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<sup>7</sup>The sons, who are highly active Twitter users, have not only strong political power in Bolsonaro’s government, but they are also seen as representatives of their father by many in government and politics – see [FT \(2019\)](#). Although it is notably informative, we should interpret this methodology with caution. First, retweets do not imply necessary support to social distancing. Besides, for March 15, the public demonstration was also against the Congress and the Federal Supreme Court (an issue which is absolutely unrelated to social distancing or the pandemic). Therefore, the likes of this day might have also be related to that. We rely on the media coverage index because we can more precisely identify the relevance of the news directly and explicitly covering the president’s action and speeches against social distancing.

<sup>8</sup>In June 2020, President Bolsonaro had 6.6 million Twitter followers, while the sons had between 1.5 and 2 million followers each. Therefore, the index naturally puts higher weights on any of the president’s tweets.

<sup>9</sup>See also [Toxvaerd \(2019\)](#), [Toxvaerd \(2020\)](#), [Greenwood et al. \(2019\)](#) and [Keppo et al. \(2020\)](#).

effort  $v_n$  to avoid infection comes with a cost described by the function  $c(v_n) = \frac{v_n^2}{2}$ . This can be interpreted as the foregone income of working from home, employment loss, and the non-monetary stress and mental challenge of being deprived of a social life.

At each instant, individuals match randomly. Susceptible individuals  $S_t$  may become infected once they match with infected individuals  $I_t$ . The rate at which infection spreads to an individual  $n$  is

$$\beta f(v_n) \left[ \sum_{i=1}^N \pi_i f(\bar{v}_n) \right] \quad \text{with} \quad f(v_n) = 1 - \zeta v_n,$$

where  $\zeta > 0$  is a parameter describing the effectiveness of an individual's own vigilance in avoiding infection and  $\bar{v}_n$  is the social distancing adopted by the other agents. When  $\zeta = 0$ , the model is equivalent of a standard SIR model without endogenous social distancing and the infection rate is  $\beta$ . The aggregate rate at which a susceptible individual becomes infected is

$$x_t(v_{nt}/\bar{\mathbf{v}}_t) = \beta f(v_{nt}) \left[ \sum_{i=1}^N \pi_i f(\bar{v}_{nt}) \right] S_t I_t.$$

Given other players' strategy  $\bar{\mathbf{v}}_t$ , an individual type- $n$  chooses social distancing  $v_{nt}$  to minimize the perceived expected total loss:

$$v_{nt}^* = \arg \min_{v_{nt} \geq 0} \left\{ x_t(v_{nt}/\bar{\mathbf{v}}_t) L_n + \frac{v_{nt}^2}{2} \right\}.$$

In a Nash equilibrium of this contagion game, we have

$$v_{nt}^* = \frac{\zeta \beta I_t S_t L_n}{1 + \zeta^2 \beta I_t S_n [\sum_{i=1}^N \pi_i L_i]} > 0 \quad \text{and} \quad f(v_{nt}^*) = (1 - \zeta v_{nt}^*) \in (0, 1). \quad (1)$$

Therefore, the lower agent- $n$ 's perceived expected loss  $L_n$ , the less cautious the agent is and the lower her vigilance. In addition, the lower the other agents' perceived expected loss,  $\bar{L} = \sum_{i=1}^N \pi_i L_i$ , the greater her vigilance. Clearly, social distancing rises with contagion  $\beta I_t S_t$ . The dynamics of the system are given by:

$$\dot{S}_t = -\beta \left[ \sum_{i=1}^N \pi_i (1 - \zeta v_{it}^*) \right] \left[ \sum_{i=1}^N \pi_i (1 - \zeta v_{it}^*) \right] S_t I_t, \quad (2)$$

$$\dot{I}_t = \beta \left[ \sum_{i=1}^N \pi_i (1 - \zeta v_{it}^*) \right] \left[ \sum_{i=1}^N \pi_i (1 - \zeta v_{it}^*) \right] S_t I_t - \gamma I_t, \quad (3)$$

$$\dot{R}_t = \gamma I_t. \quad (4)$$

As the number of infected people increases and contagion rises, individuals become more vigilant, equilibrium social distancing rises, and therefore the number of infected people is reduced relative to the typical epidemiological model (see Figure III(a)). While equilibrium vigilance flattens out the infection curve by decreasing the reproduction rate  $r_t = \frac{\beta_t}{\gamma}$ , it can quantitatively be very different from an imposed lockdown, which can be captured by a reduction in  $\beta$ . Individuals are willing to self-isolate when the probability of contracting the disease is tangible. However, they also weigh the contagion risk against losses of income and the inconvenience of living in isolation.<sup>10</sup> As a consequence, voluntary social distancing keeps

<sup>10</sup>Figure III(b) shows the equilibrium vigilance for three different individuals who differ in their perceived expected loss of infection risk.



people at home only when the infection risk starts to become visible and the epidemic is already well underway.

What are the effects on the infection rate of a rise in the share of individuals who perceive COVID-19 to be a minor health problem? Such a rise corresponds to a reduced form approach to capture how leader’s words and actions can affect individual perceived loss, which is an implication we will test in our empirical analysis. There are two opposing effects. The first is a composition effect since there will be more individuals with the lowest equilibrium vigilance, i.e. with  $v_{1t}^*$ , and therefore the infection rate should rise. Yet the average perceived expected loss  $\sum_i \pi_i L_i$  in society falls and caution to avoid infection on the part of all agents rises, decreasing the infection rate. With two types of individuals, the following proposition shows that the former effect dominates the latter and that a rise in the share of individuals with the lowest perceived loss of infection risk increases the infection rate. A similar result is also shown when the perceived expected loss of any individual falls.

**Proposition 1.** *Assume that there are two types of individuals  $n \in \{1, 2\}$  with  $\{L_1 < L_2\}$  and the share of type-1 individuals (with the lowest perceived expected loss of infection) is  $\pi$ . Denote the society’s infection rate by  $\beta_t$  where*

$$\beta_t = \beta \left[ \pi(1 - \zeta v_{1,t}^*) + (1 - \pi)(1 - \zeta v_{2,t}^*) \right]^2, \text{ with } v_{n,t}^* = \frac{\zeta \beta I_t S_t L_n}{1 + \zeta^2 \beta I_t S_n [\pi L_1 + (1 - \pi) L_2]}.$$

*Then a rise in the share of individuals with the lowest expected perceived loss ( $\pi$ ) increases the society’s infection rate  $\beta_t$ . A fall in the perceived expected loss of any agent ( $L_1$  or  $L_2$ ) increases the society infection rate  $\beta_t$*

*Proof.* Taking partial derivatives of  $\beta_t$  with respect to  $\pi$ ,  $L_1$  and  $L_2$  proves the results.  $\square$

## IV Data

We use several sources of data to conduct our empirical analysis, and the unit of study is the municipality. In order to measure social distancing, we use an index created and developed by In Loco (<https://inloco.com.br/>), a Brazilian technology company that provides information based on mobile location data. Specifically, In Loco collects anonymized location data from 60 million devices, enabled by mobile apps that provide location-aware services while ensuring the privacy of their users. Using Bluetooth, Wi-Fi, and GPS, the company can track the devices’ location as well as their movement to different places, with a precision of three meters.<sup>11</sup>

The social distancing index measures the percentage of devices in a given municipality that remained within a radius of 450 meters of the location identified as home. The index is computed on a daily basis, and ranges from zero to one. We use data for the 3,975 (out of the 5,571) municipalities in Brazil for which the social index is measured — some small-sized municipalities do not have enough mobile devices, such that the index is not computed. We have data on the social distancing index from February 01 to April 14, 2020.<sup>12</sup> Figure IV shows that while the social distancing index has risen nationally, the changes have not been homogeneous with some municipalities adopting more social distancing than others. The mean of the index for the entire period is 0.37 (0.25 in February, 0.41 in March and 0.53 in the first

<sup>11</sup>See Peixoto et al. (2020) for a complete description of how the data is collected and computed.

<sup>12</sup>We obtained the data on the social distancing index on April 16, 2020.

two weeks of April).<sup>13</sup> Furthermore, Figure B.6 in Appendix B compares In Loco’s and Google’s social distancing indexes for each Brazilian state and shows a high correlation between the two measures during these three months.<sup>14</sup>

To measure support for Bolsonaro, we use electoral data provided by the Superior Electoral Court (TSE — “Tribunal Superior Eleitoral”). To match the geographical unit of our social distancing outcome, we collected data on vote counts for the 2018 presidential election aggregated at the municipality level. Since this data contains vote totals for each candidate by municipality, we use several vote-related measures as a proxy for the president’s local support. Figure V shows the distribution of votes for Bolsonaro across municipalities in the 2018 presidential election.

The 2010 Population Census carried out by the Brazilian Bureau of Statistics (IBGE) provides data on income, poverty, religion, and consumption of durable goods at the municipal level. We use the 2019 estimate of population counts provided by the IBGE. We also gathered data from the IBGE’s 2018 MUNIC (“Perfil dos Municípios Brasileiros”) containing information on local-level media presence, such TV broadcasters. Table I presents the descriptive statistics of the variables used in this paper.

## V Empirical Model and Results

### V.1 Empirical Model

Before conducting a formal analysis, we present a visual inspection of the social distancing patterns by municipalities in which support for Bolsonaro was relatively higher in the 2018 election. In Figure VI we show the estimates of 74 OLS cross-section regressions, one for each day of our sample (February 01 to April 14) in which the dependent variable is the social distancing index of each municipality in a given day and the explanatory variable is a dummy that equals one if Bolsonaro’s vote share in that municipality was above the state median, controlling by the average income level of each municipality. The pattern seems suggestive: no clear “political divide” before the first event, after which there is a drop in the social distancing index for pro-Bolsonaro municipalities relative to the rest of the municipalities. Another drop seems to arise just after the second event and persists for a few additional days.

With these suggestive patterns in mind and in order to identify a causal effect of the president’s public demonstration participation and his messages against social distancing on citizens’ behavior, we estimate a two-way fixed effects model (day, municipality) with leads and lags. This allows us to test pre-trends (placebo) and post-trends (dynamic effects). In particular, we estimate the following model:

$$SocialDistancing_{md} = \sum_{l=-10}^{+10} \alpha_l Treated_{md-l} + \alpha Treated_{md} + \phi_d + \rho_m + \lambda X_{md} + \delta Z_{sd} + \epsilon_{smd},$$

where  $SocialDistancing_{md}$  is the social distancing index for the municipality  $m$ , on day  $d$ ; and  $Treated_{md}$  is a dummy that takes a value of 1 if two conditions are fulfilled: the municipality  $m$  is defined as “pro-government” (we use several definitions, which are detailed later in results

<sup>13</sup>Figure B.5 in Appendix B shows that social distancing in the states of Sao Paulo and Rio de Janeiro began to rise once these states introduced non-pharmaceutical interventions.

<sup>14</sup>We use Google’s mobility trends for places of residence — for further details see [https://www.google.com/covid19/mobility/data\\_documentation.html?hl=en](https://www.google.com/covid19/mobility/data_documentation.html?hl=en). We compare the measures at the state-level in Brazil since this is the most disaggregated level available for the Google’s index.



section) and the day  $d$  corresponds to one of the two events that we defined: March 15 and March 25 (taking a value of zero, otherwise). We define  $t=0$  (treatment) as the day of the demonstration that took place during the day on March 15 and the next day after the official pronouncement by Bolsonaro at night on March 24. We include ten leads and ten lags of this variable to detect pre-treatment and post-treatment effects.  $\rho_m$  and  $\phi_d$  are municipality and day fixed effects, respectively. The identifying assumption is that pro-Bolsonaro municipalities would have had similar trends in social distancing as those where his support is less strong, in the absence of the president’s messages.

We control for a number of relevant time-varying characteristics at the municipality-day and state-day levels. First, we include a vector of dummies  $Z_{sd}$  indicating the type of non-pharmaceutical intervention in place in a given state ( $s$ ) and day ( $d$ ). These dummies cover three categories: (a) school closure only, (b) school closure plus a general ban, (c) or no ban at all. If the dates when state policies were implemented correlate with Bolsonaro’s speeches (e.g., an anti-Bolsonaro could strategically decide to toughen the lock-down when Bolsonaro publicly undervalues the disease), our estimates would be biased. Unless we control for the timing of implementation of state interventions. In addition, the fact that we have more than one event helps to alleviate such type of concerns, as it makes the correlation in timing of Bolsonaro’s speeches and state or municipal-level policies (that affects differently pro- and anti-Bolsonaro supports) more unlikely.

Furthermore, in order to account for the fact that support for the government is strongly correlated with variables such as poverty and rurality (both time-invariant), we include in  $X_{md}$  the interaction between day fixed effects and a poverty dummy, and fixed effects and a rurality dummy.<sup>15</sup> In our main specification, we also include a state-specific linear trend. To account for the plausible correlation of policies within states and time (the level at which isolation policies are typically implemented), we cluster the standard errors at the state-day level and weight the municipal averages by their population in 2019 (in the Appendix we also show the results clustering at the municipality level.). All results are expressed in percentage points (0-100 scale).

Sandler and Sandler (2014) and Schmidheiny and Siegloch (2020) discuss how to deal with empirical models in which there are multiple and potentially overlapping events. They show that, in general, the best strategy to estimate an unbiased treatment effect is to pool the events (instead of, for instance, ignoring subsequent events after the first one). However, the estimates of a model with pooled events would be unbiased under the assumptions of linearity and additivity (i.e., none of the events should be larger than the others). In our case, we do not have any prior regarding which of our two events should be theoretical more impactful, as they are different in nature: one is an official public speech, and the other one is a demonstration. Moreover, as graph “a” of Figure II, the coverage of both events in the press look very similar in magnitude. In any case, as Sandler and Sandler (2014) shows, pooling two events when the additivity assumption is not fulfilled would bias our estimates towards 0. Therefore, if any, our estimates are conservative. For robustness, our results also include estimations using a continuous variable measuring the intensity of the public pronouncement of Bolsonaro as the treatment.<sup>16</sup>

<sup>15</sup>The poverty dummy equals one if the municipal poverty rate is above the national-level median. The rurality dummy equals one if the proportion of residents living in rural areas is above the national-level median.

<sup>16</sup>As Schmidheiny and Siegloch (2020) show, the size of the window (that is, the number of leads and lags included in the model) could be important for interpretation. We took the most neutral approach and included all the leads and lags that our data allows without losing relevant information of the two events.

## V.2 Baseline Results

As the two graphs in Figure VII show, there is a clear regional divide in support for Bolsonaro. In classifying municipalities where the president obtained more than, for instance, 50% of the votes in the first round of the 2018 presidential election as “pro-government,” we would lose within-state variability in our treatment variable for about 28% of the states (18% of the observations). This is due to the fact that there were some states where every single municipality was either anti- or pro-Bolsonaro. There are also a number of states in which the within-state variability would not be strictly zero, but would be very small: in more than a third of the states (covering 35% of the observations) there are less than 1% of municipalities in which Bolsonaro obtained more than 50% of the vote share. As most of the social distancing policies have been implemented at the state level and some of them around the dates of our key events, accounting for within-state variability is important to isolate our estimation from any state-specific shocks that could have been different in pro and anti-Bolsonaro states.

To address this issue, in our baseline model we define a municipality as “pro-government” if the votes for the president in the first round of the 2018 presidential election were above the median observed in the state. Results are presented in Figure VIII, graph “a”. As expected, almost all the pre-treatment effects are indistinguishable from zero. By contrast, almost every single day starting on day 1 is negative, and most of them are significantly different from zero.

<sup>17</sup>

For robustness, we present several alternative specifications. Our baseline specification raises the concern that in extremely “anti-Bolsonaro” states a municipality might instead be considered as “pro-Bolsonaro” when the support for the president was actually quite low. To account for this problem, we re-estimate the baseline equation, but now restrict the municipalities to the states in which Bolsonaro obtained more than 50% in at least a third of the municipalities. In Figure VIII, graph “b”, we present the results, which are very similar in magnitude and significance.

In graph “c” of the same Figure, we present the results classifying municipalities where the president obtained more than 50% of the votes in the first round of the 2018 presidential election as “pro-government,” and find very similar results, in magnitude and significance.

We finally deal with the potential problems related to the selection and intensity of the events. Although in Section II we provide evidence suggesting that the two dates we use as “treatment” were outliers in terms of the spreading of the presidential anti-isolation message, a reasonable claim could be that there were other relevant events – albeit less “intense” – that might be considered. Moreover, although Figure II shows that the two events were similar in magnitude it could be the case that even small differences in the intensity had different impacts.

To consider this, we estimate our baseline model using a continuous variable to account for different intensities in the anti-isolation speech of Bolsonaro: the proportion of front-pages in the main newspapers covering news related to Bolsonaro undervaluing the disease or speaking against isolation. (see Section II for details on this variable). The result of the estimation is shown in Figure VIII, graph “d”: the results are similar to those corresponding of the previous models. An increase of 1% in the area of the front pages covering the news of Bolsonaro speaking against isolation or undervaluing the disease implies a negative post-treatment effect of approximately 0.08 pp in the isolation index (the average area in our sample is 1.62%)

In Figure IX, we include additional robustness checks. In graph “a”, we present the results changing the binary “pro-government” variable for a continuous one: Bolsonaro’s vote share in

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<sup>17</sup>Table B.1 in Appendix B shows the magnitude of the coefficients of the baseline results with different set of controls.

the first round of the 2018 presidential election. This graph shows that 1 additional percentage point in Bolsonaro’s vote share implies a post-treatment effect of approximately 0.08 points in the isolation index. A 14pp increase in the vote share for Bolsonaro (which is approximately the difference in his vote share between a pro- and “anti-Bolsonaro” municipality, according to our baseline definition) would thus imply a reduction of 1.1 pp in the isolation index.

In graph “b” of the same figure, we estimate our main model, but clustering the standard errors at the municipality level. Finally, in the same Figure IX (graph “c”), we show the results of our main model with “placebo events”, using all other official pronouncements (in which Bolsonaro did not give messages against social distancing) as the “intervention”. As expected, there are no discernible effects on social distancing, before or after those pronouncements.

### V.3 Further Analysis

In order to provide suggestive evidence on the mechanisms underlying our findings, we first explore the potential role of the local media and social media usage in each municipality. Although we cannot present conclusive results, Figure X documents an interesting pattern. First, in graphs “a” and “b” we estimate the baseline model for two sub-samples: municipalities where there is no presence of local TV broadcasters (“a”) and those where there is at least one (“b”). As the graphs show, the results seem to be driven by municipalities with some presence of local media. This is consistent with other papers that have shown (Ferraz and Finan (2008)) the crucial role of local media spreading the news in Brazil.

We then study the role of social media in disseminating the news. Although Twitter penetration in Brazil is not very high (around 7% of the population, versus 12% in Argentina or 25% in the US), Bolsonaro and three of his sons who are politicians are known (and heavily involved in the government see FT (2019)) for being active users of Twitter. To analyze potential differences in the impact by the presence of active Twitter users we define an indicator proceeding as follows. We first live-streamed all the tweets in Brazil (for technological reasons, it is less computationally costly than to scrap older tweets). Our program ran for approximately five days (July 20 to July 24), capturing tweets every 20 minutes. In total, we captured 60,000 tweets, which we then classified them according to their location (municipality). We then defined a simple indicator that equals one if there is some active Twitter activity (that is, at least one tweet) and zero otherwise. Our indicator divides the sample into two approximately equal-sized sub-samples. In graphs “c” and “d” of Figure X, we show the results of the models estimated in these two sub-samples. Naturally, the presence of Twitter activity could be correlated to omitted variables and thus our results are only suggest. However, the pattern seems clear: no impact among municipalities with no presence of active Twitter accounts, and a very large impact among the rest.

Finally, we assess the relevance of the presence of Evangelicals, who represent around a quarter of the population and heavily supported Bolsonaro in the 2018 election. The estimated difference in votes between the elected president and the runner-up was 11.5 million among Evangelicals (see Folha (2018)) and Bolsonaro won the election by approximately 10.5 million votes. Support among Evangelicals was around 70%, the largest among any religious group. Moreover, Evangelicals, unlike other groups that also supported the president in 2018, showed continuous support to Bolsonaro’s handling of the pandemic and against isolation policies (Folha (2020)).

We thus analyze whether or not municipalities with a greater share of Evangelicals show a different pattern of social distancing after the critical events by splitting municipalities into two sub-samples: below or above the municipal median of the proportion of Evangelical parishioners.

Figure X (graphs “e” and “f”) suggests that the effect is driven by municipalities where there is a larger population of Evangelical parishioners.

## VI Conclusion

Studying the effects of leadership is particularly important during a crisis such as the present COVID-19 pandemic. Citizens may ignore best practices from a medical standpoint, are likely to be unaware of the global spread of the disease, and ignore negative externalities. The role of leaders in this context is thus crucial to coordinating information and collective actions and establishing social norms.

In this paper, we focus on Brazil, a country where the president has publicly spread an anti-isolation message. This setting is particularly suitable for exploring the effect of a high-profile political leader’s words and actions on the behavior of his followers. Using a social distancing index at the municipal-day level, based on the location of mobile devices, we find a strong persuasion effect of the head of state on behavior in localities where he has the majority of supporters. Specifically, we document a significant decrease in social distancing in pro-government municipalities following the president’s most visible events against self-isolation behavior and policies.

Our empirical results emphasize the importance of political leaders’ example and words as key factors triggering behavioral change among citizens, above and beyond institutions and regulations.

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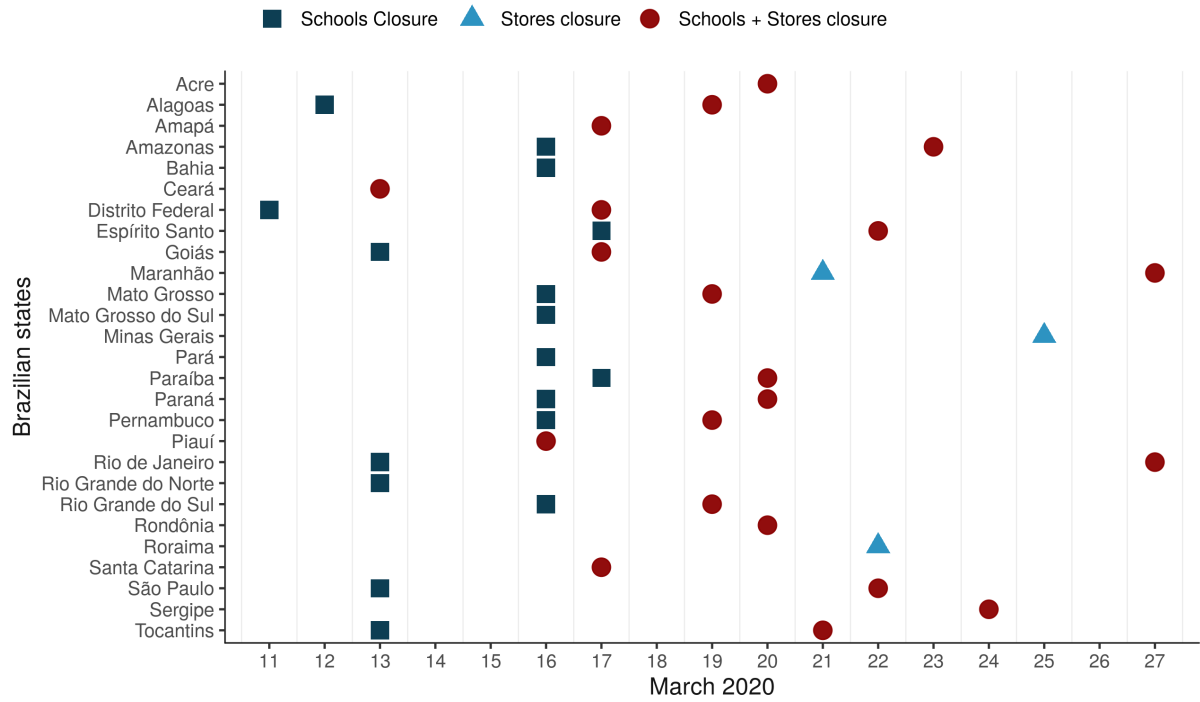
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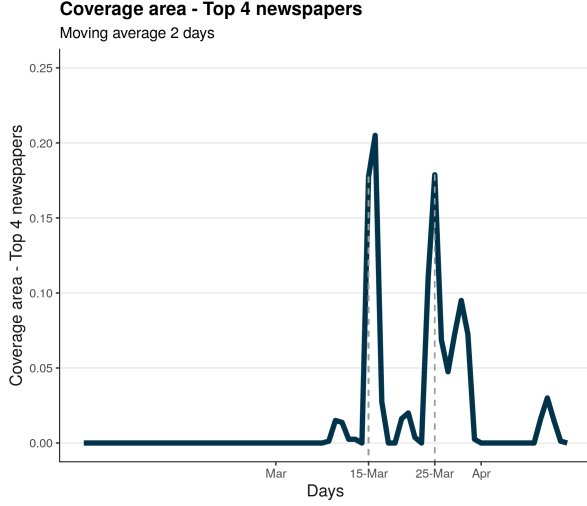
## VII Figures

**Figure I.** NPI policies implemented by each Brazilian state

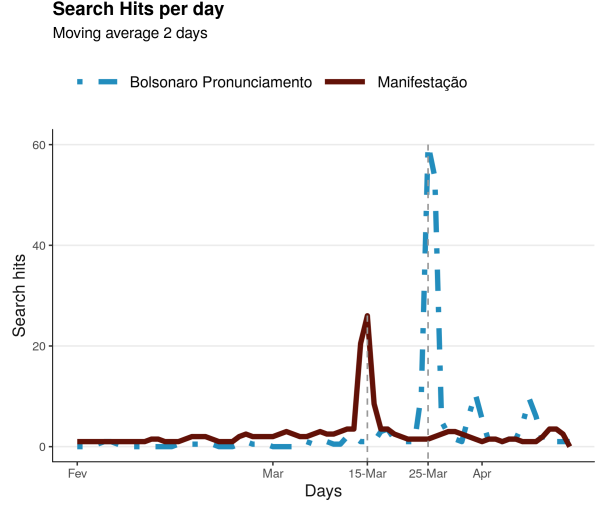


*Notes.* The figure shows non-pharmaceutical policies (school and store closure) implemented by all Brazilian states between March 11 and March 27.

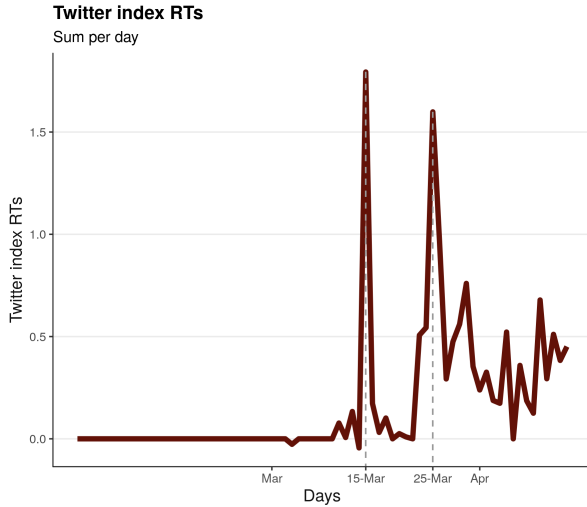
**Figure II.** Intensity of Events: President against social distancing



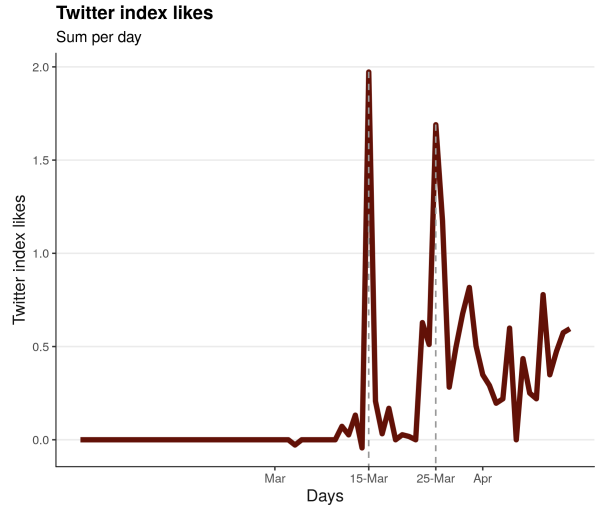
(a) Area of news in newspapers' front pages



(b) Google search hits: protests and Bolsonaro pronouncement



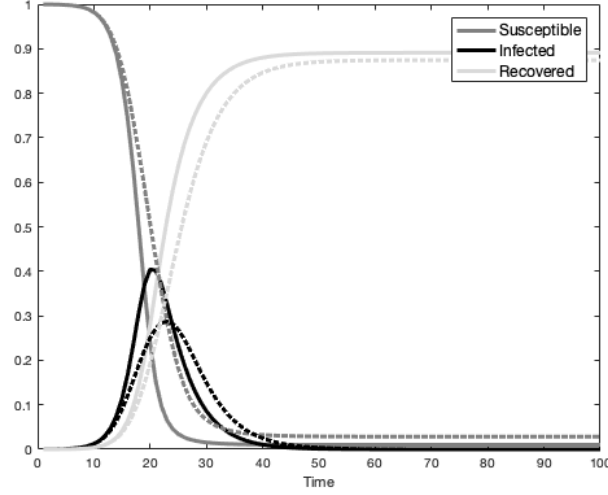
(c) Twitter Index: Retweets



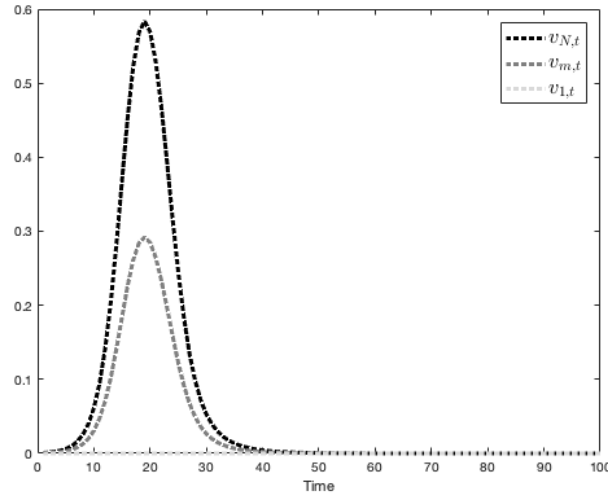
(d) Twitter Index: Likes

*Notes.* Graph (a) shows the "news coverage index", defined as the share of the area (0 to 1) of the 4 main newspapers' front pages covering news of Bolsonaro against isolation or undervaluing Covid-19 (moving average 2-days). Graph (b) shows the results (moving average 2-days) for Google searches in Brazil for "protests" and "Bolsonaro pronouncement" (searches made in Portuguese). Graphs (c) and (d) show Twitter indexes based on daily likes and retweets, respectively. We created an unweighted index for each tweet that was 1 if against, 0 if neutral or other and -1 if in favor of social distancing. Then we normalized this simple index using the number of likes (or likes plus retweets) to create an index between -1 and 1 for likes (or likes plus retweets). Finally, we aggregated the indices (which were so far tweet specific) to daily values. We used the tweets of the president and his three sons for this analysis.

**Figure III.** SIR model with social distancing.



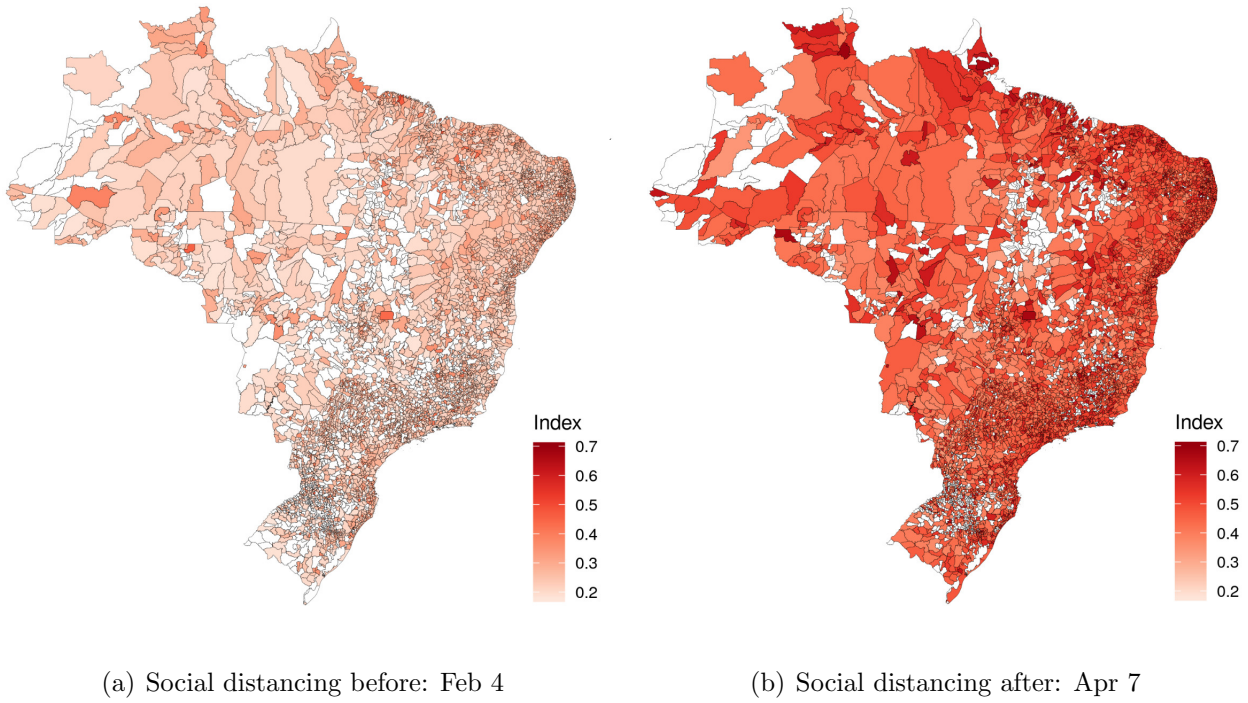
(a) Dynamics of the SIR model with (dashed) and without (solid) equilibrium social distancing.



(b) Social distancing by different agents who are heterogeneous in their perceived expected loss.

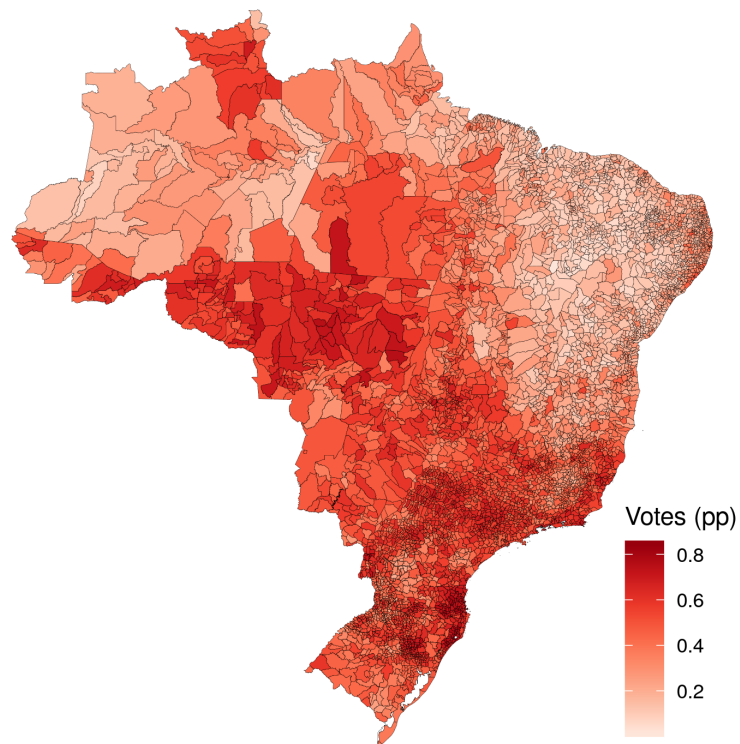
*Notes.* Figure III(a) shows the dynamics of the SIR model without equilibrium social distancing (solid line) and with equilibrium social distancing (dotted line). Figure III(b) shows the equilibrium vigilance for three different agents. The highest curve corresponds to equilibrium vigilance of the agents with the highest expected perceived loss of infection. See Section III for more details.

**Figure IV.** Social distancing index: before and after



*Notes.* The figures show the social distancing index for all municipalities in Brazil on February 4 and April 7, 2020. Municipalities in white are those without data on social distancing. The index is calculated by the technology company In Loco using location data from mobile devices. See Section IV for more details on the data.

**Figure V.** Votes for Bolsonaro in the 2018 presidential election



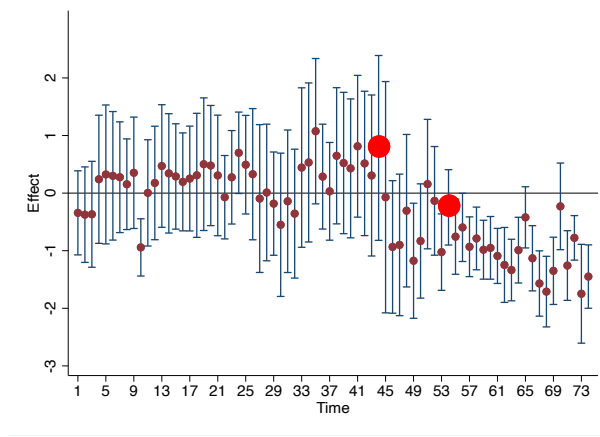
*Notes.* The figure shows for each municipality the percentage of votes for Bolsonaro in the first round of the 2018 presidential elections in Brazil. See Section IV for more details on the data.

**TABLE I.** Summary statistics

Variable	Mean	Std. Dev.	N
Social distancing index	0.439	0.148	123,225
Support Bolsonaro dummy	0.378	0.485	123,225
Poverty dummy	0.5	0.5	123,225
Rurality dummy	0.5	0.5	123,225
Population size in 2019	50,569.52	260,990.85	123,225
# of Evangelical parishioners in 2010	10,254.60	56,276.28	123,132
# of Evangelical parishioners Pentecostal in 2010	6,134.36	31,904.95	123,132
# of housing units with internet in 2010	4,369.45	39,200.33	123,132
Dummy for local TV broadcaster in 2018	0.093	0.291	123,225

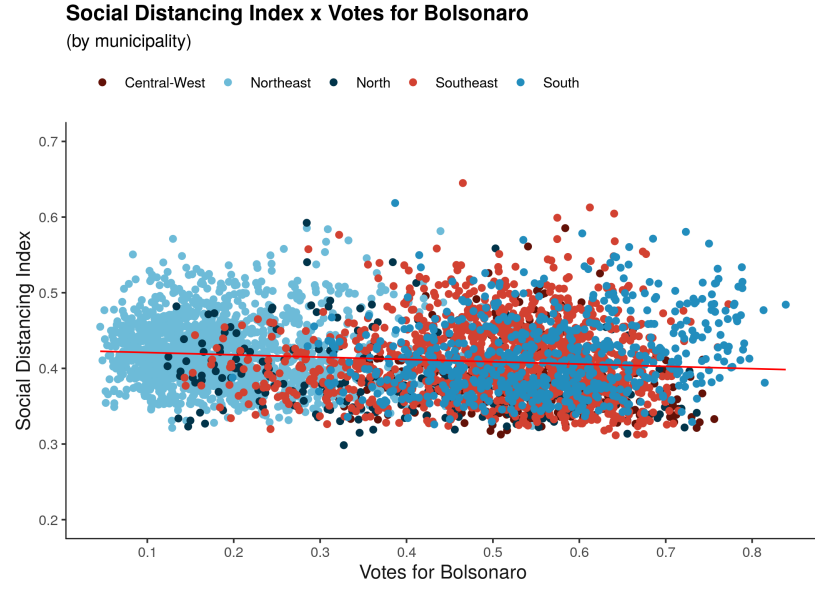
*Notes.* Total number of observations  $N$  is 123,225, which represents 31 days and 3,975 spatial units (municipalities). The social distancing index varies from zero to one. The poverty dummy equals one if the municipal poverty rate is above the national-level median. The rurality dummy equals one if the proportion of residents living in rural areas is above the national-level median. Active population is defined as the proportion of men aged 15 to 64. See Section IV for more details on the data.

**Figure VI.** Average difference between government supporters/non-supporters on social distancing- day by day

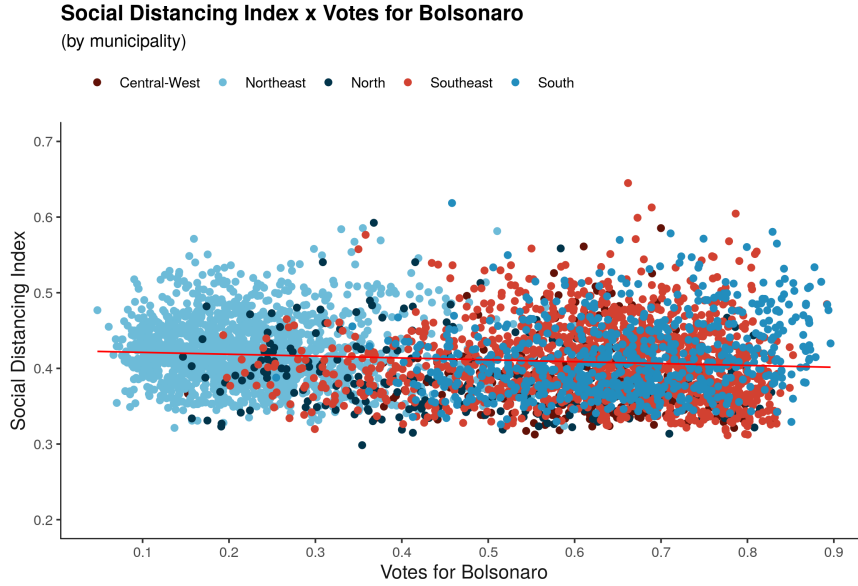


*Notes.* Each dot represents the point estimate of the following linear cross-section specification:  $Y_m = \alpha + \beta D_m + \gamma X_m + \epsilon_m$ , where  $Y_m$  is the social distancing index in municipality  $m$ , the independent variable  $D_m$  is a dummy that equals one if the vote share for Bolsonaro is above the state median and 0 otherwise, controlling for the poverty rate ( $X_m$ ) of the municipality. The red dots show the key events identified in our analysis. The days go from 1 (February, 1) to 74 (April, 14), so we report 74 cross-section coefficients. Confidence intervals: 90%, robust standard errors.

**Figure VII. Voting 2018 Election**



(a) 1st Round

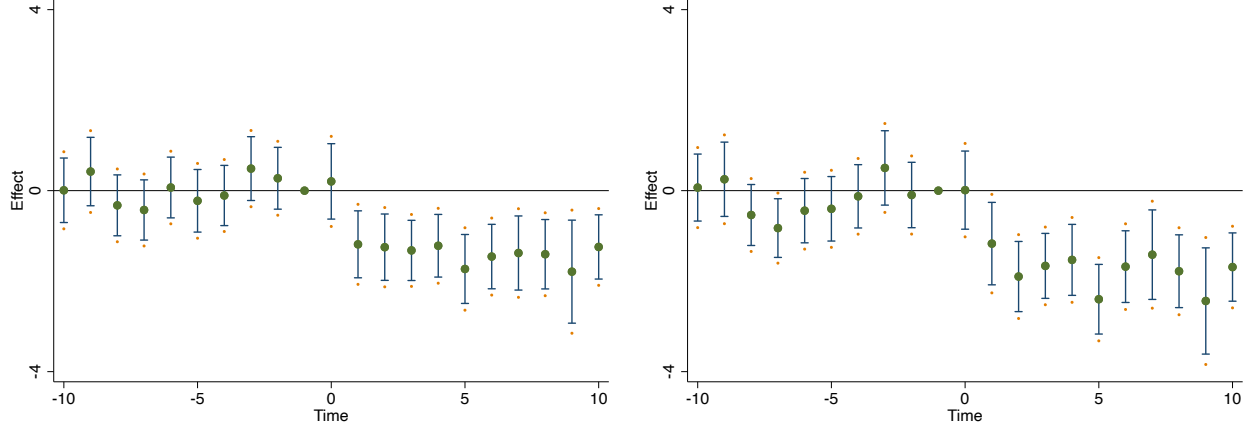


(b) 2nd Round

*Notes.* The figures show the association between the social distancing index and the percentage of votes for Bolsonaro in the 2018 election. The figure is for 3,975 municipalities for which data on social distancing index is available.

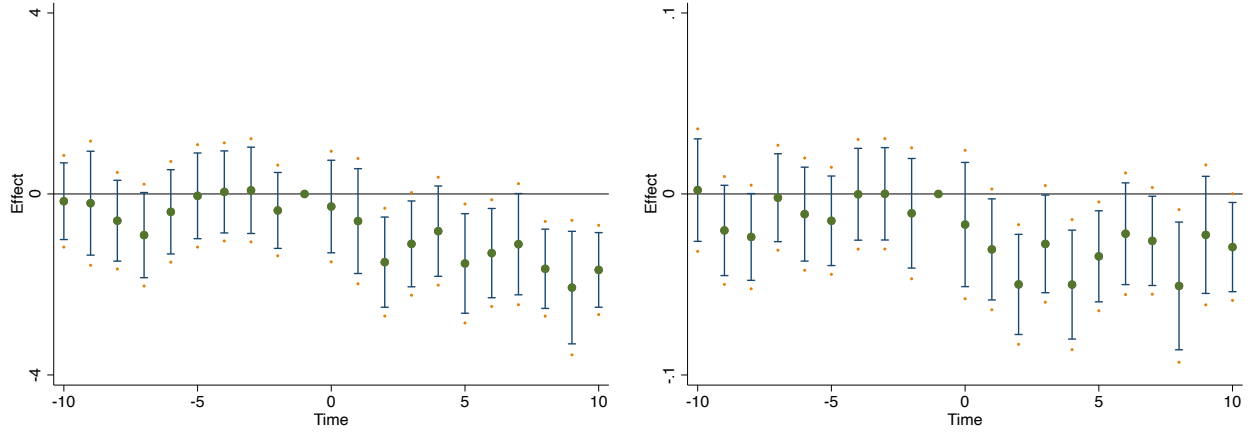


**Figure VIII.** Baseline results and robustness



(a) Average effect on social distancing: support for Bolsonaro above state median (Baseline)

(b) Average effect on social distancing - support for Bolsonaro above state median in pro-Bolsonaro states

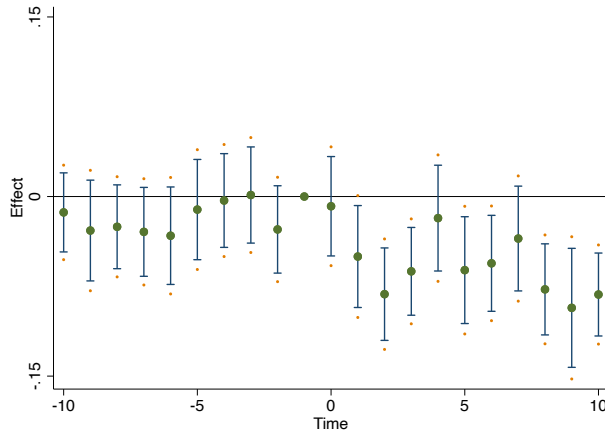


(c) Average effect on social distancing: support for Bolsonaro above 50%

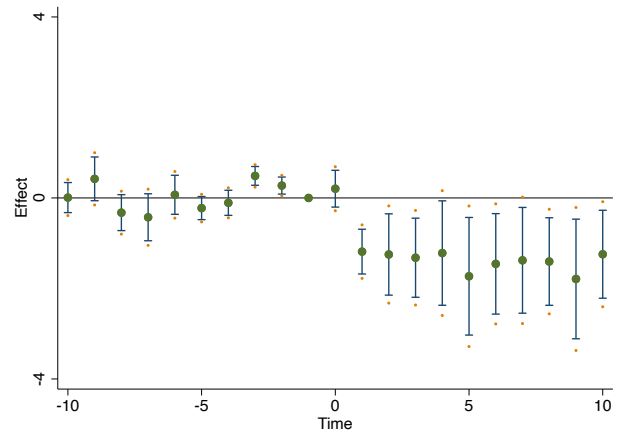
(d) Average effect on social distancing: different intensity of events using front pages of newspapers

*Notes.* All results are expressed in percentage points (0-100 scale). Coefficients estimated from the empirical model in Section V for 3,975 municipalities for which data on social distancing index is available. Data are provided at the municipality-day level. The day before each intervention is normalized to zero at  $t=-1$ . The dependent variable is the social distancing index for municipality  $m$  on day  $d$ . Standard Errors are clustered at state-day level. Confidence intervals: 95% (dots) and 90% (bars). Panel (a) shows the baseline results, where the treated dummy equals one if the votes for the president in the first round were above the median observed in the state. Panel (b) presents the same results but excluding states in which there are less than a third of states in which Bolsonaro obtained less than 50% of the votes. Panel (c) presents results when the treated dummy equals one for municipalities where votes for the president was above 50% in the first round of the 2018 election. Panel (d) uses a continuous variable to classify the events (news coverage index), based on the area of the front pages of the 4 biggest newspapers, covering Bolsonaro's acts and words against isolation and undervaluing the Covid-19

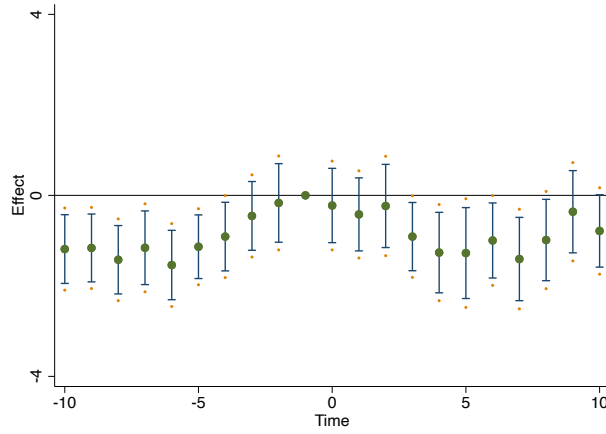
**Figure IX.** Main Results: robustness



(a) Vote share, cluster: state-day



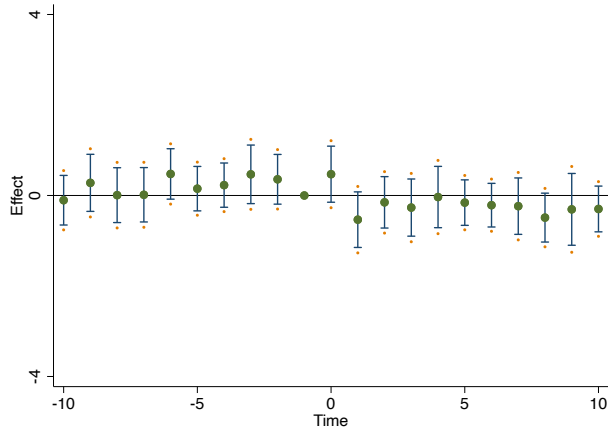
(b) Baseline, cluster: municipality



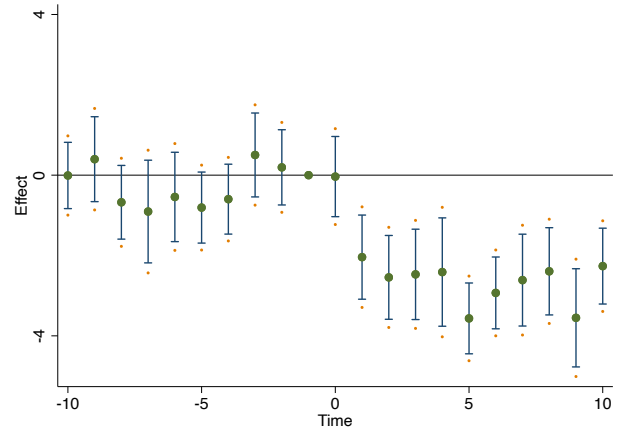
(c) Placebo exercise: other pronouncements, cluster: state-day

*Notes.* Coefficients estimated from the empirical model in Section V for 3,975 municipalities for which data on social distancing index is available. Data are provided at the municipality-day level. The day before each intervention is normalized to zero at  $t=-1$ . The dependent variable is the social distancing index for municipality  $m$  on day  $d$ . Panel (a): support for Bolsonaro is defined as the Vote share for him in the first round of the 2018 presidential election. standard errors are clustered at the state-day level. Panel (b): treated dummy equals one if the votes for the president in the first round were above the median observed in the state, standard errors are clustered at the state-day level. Panel (c): treated dummy equals one if the votes for the president in the first round were above the median observed in the state, standard errors are clustered at the municipality level. Panel (d) is a placebo exercise for pronouncements where the president did not give messages about social distancing. Standard errors are clustered at the state-day level. Confidence intervals in all the graphs: 95% (dots) and 90% (bars)

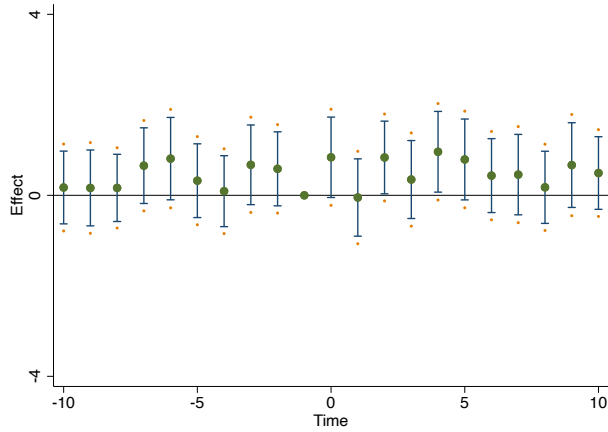
**Figure X.** Average effect on social distancing - by media presence, Twitter activity and presence of evangelical parishioners



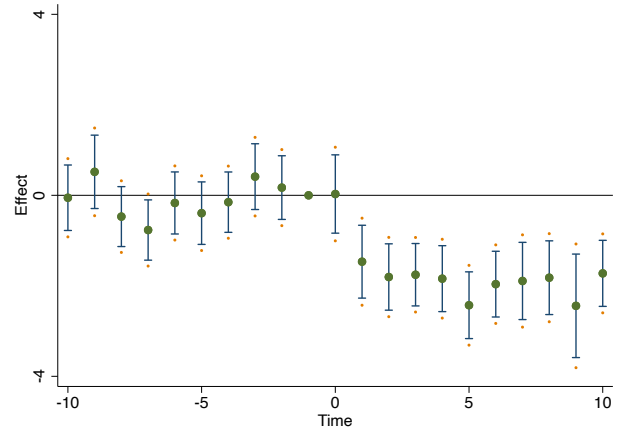
(a) No local TV broadcaster in the municipality



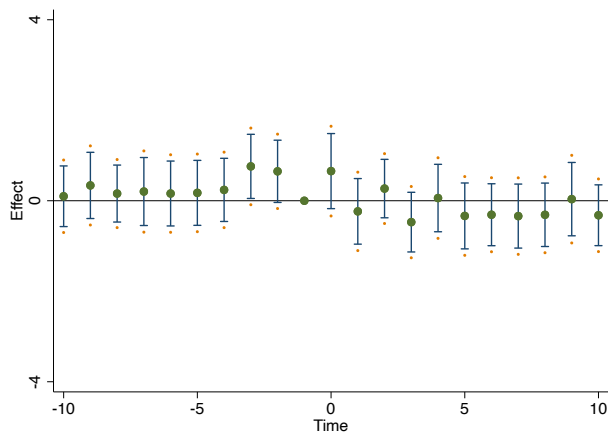
(b) At least one local TV broadcaster in the municipality



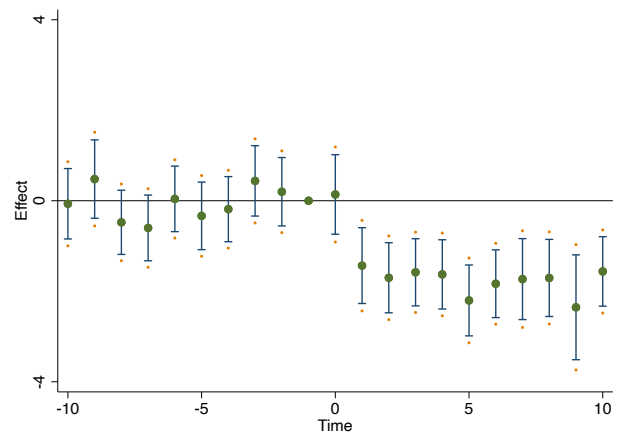
(c) No Twitter activity



(d) Some Twitter activity



(e) Below p50 of % Evangelical parishioners



(f) Above p50 of % of Evangelical parishioners

*Notes.* All results are expressed in percentage points (0-100 scale). Coefficients estimated from the empirical model in Section V for 3,975 municipalities for which data on social distancing index is available. Data are provided at the municipality-day level. The day before each intervention is normalized to zero at  $t=-1$ . The dependent variable is the social distancing index for municipality  $m$  on day  $d$ . The treated dummy equals one if the votes for the president in the first round were above the median observed in the state. Panel (a) shows the results for municipalities without local TV broadcaster, while panel (b) present for municipalities with at least one local TV broadcaster. Panel (c) shows the results for municipalities where no Twitter activity was registered in the sampled days. Panel (d) shows the results for municipalities where some Twitter activity was registered in the sampled days (at least one tweet). Panel (e) shows the results for municipalities with below-median % of Evangelical parishioners (non-Pentecostal), while panel (f) shows for above-median. Standard Errors clustered at state-day level. Religion data comes from the 2010 Census. Confidence intervals: 95% (dots) and 90% (bars).

## A Appendix: Analysis of Reported Cases

Analyzing the effect of Bolsonaro’s speeches and actions on reported COVID-19 cases is challenging with the current data for at least two reasons. First, the number of cases is suspected to be heavily underreported. The official number – provided by the Ministry of Health – depends on testing and, furthermore, testing capacity is not uniformly distributed across municipalities. Besides, there is no reason to believe the distribution over time or space is uncorrelated to other relevant variables for our analysis. Although this is true for many countries, in Brazil testing seems to be disproportionately low in comparison to other nations, even within the same region. Brazil has, up to now, tested people at a far lower rate than any other country with at least 40,000 cases. For instance, it has tested 12 times fewer people than Iran and 32 times fewer than the United States (see [The Washington Post \(2020b\)](#)). Worst case, the estimation would be biased and best case, the variable would have a large measurement error.

Second, the distribution of the number of cases is heavily skewed, as the large majority of the municipalities have not had any recorded cases so far (around 80% had zero cases until April 14; around 90% had only one case. Overall, 95% of the observations in our dataset have zero cases). Figure [A.2](#) maps the confirmed cases in Brazilian municipalities on April 4, 2020, where we observe virtually only municipalities with zero cases.

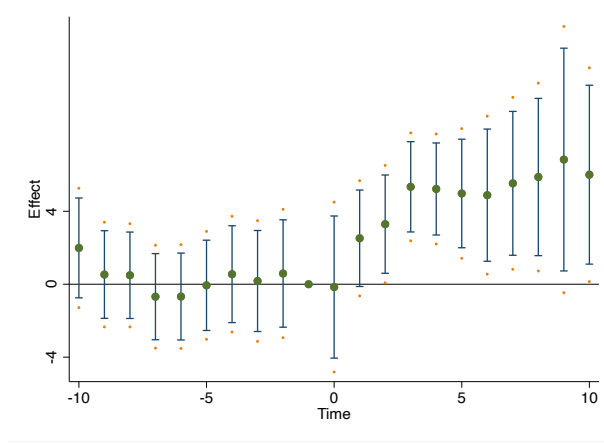
With this caveat in mind, we estimate our baseline model using the log of the number of cases as the outcome.<sup>18</sup> We show the estimations using the three models presented above. Figure [A.1](#) presents the results using our baseline model (where a municipality is defined as “pro-government” when votes for Bolsonaro were above the state median in the first round of the 2018 election).

Point estimates seem to rise around 2 to 4 days after our baseline. While this would seem to suggest an effect, the estimations are very imprecise (unsurprisingly, given how noisy the outcome is).

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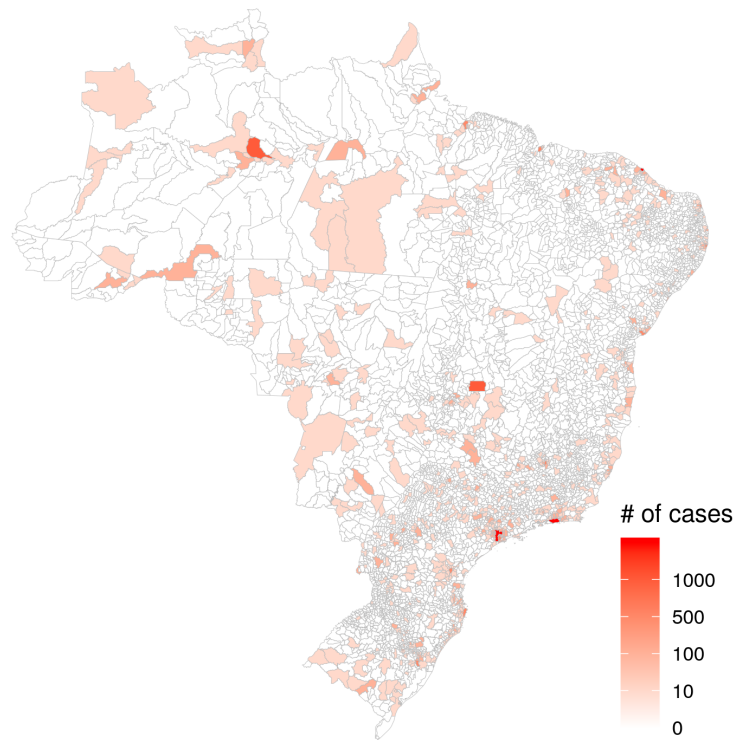
<sup>18</sup>In this specification without population weights, given that the outcome is not a municipal average.

**Figure A.1.** Average effect on confirmed cases



*Notes.* Coefficients estimated from the empirical model in Section V for 3,975 municipalities for which data on social distancing index is available. Data are provided at the municipality-day level. The day before each intervention is normalized to zero at  $t=-1$ . The dependent variable is the log of the number of confirmed cases in municipality  $m$  on day  $d$ . The treated dummy equals one if the votes for the president in the first round were above the median observed in the state. Standard Errors clustered at state-day level. Confidence intervals: 90%.

**Figure A.2.** Confirmed cases in Brazilian municipalities on April 7, 2020



Note: The figure shows the location of confirmed cases in Brazilian municipalities on April 7, 2020.

## B Appendix: Additional Figures and Tables

Figure B.1. Area: Bolsonaro minimizing the virus



Notes. Cover of the newspaper O Estado de Sao Paulo - Wednesday, March 11, 2020. The box in red represents the area of the front page related to Bolsonaro minimizing the impact of the Covid-19. The text, translated by the authors of this paper: "Bolsonaro minimizes the crisis (title). A day after the global financial markets suffered historical losses due to the virus outbreak, the president Jair Bolsonaro denied the existence of any crisis and blamed the press for the situation."



Figure B.2. Media: Bolsonaro against isolation



Notes. Cover of the newspaper Folha de Sao Paulo - Monday 16, 2020. The box in red represents the area of the front page related to Bolsonaro against isolation. Parts of the text, translated by the authors of this paper: "Bolsonaro ignores the virus and goes to a manifestation against the Congress and the SCJ (title)", "(...) the president broke isolation and went to the act. He did not wear a face-mask, he touched supporters and their cell-phones", "(...) I would like them (note from the authors: the president of the senate and the lower house, who criticized him) to be in the streets, such as me."

Figure B.3. Media on March 16



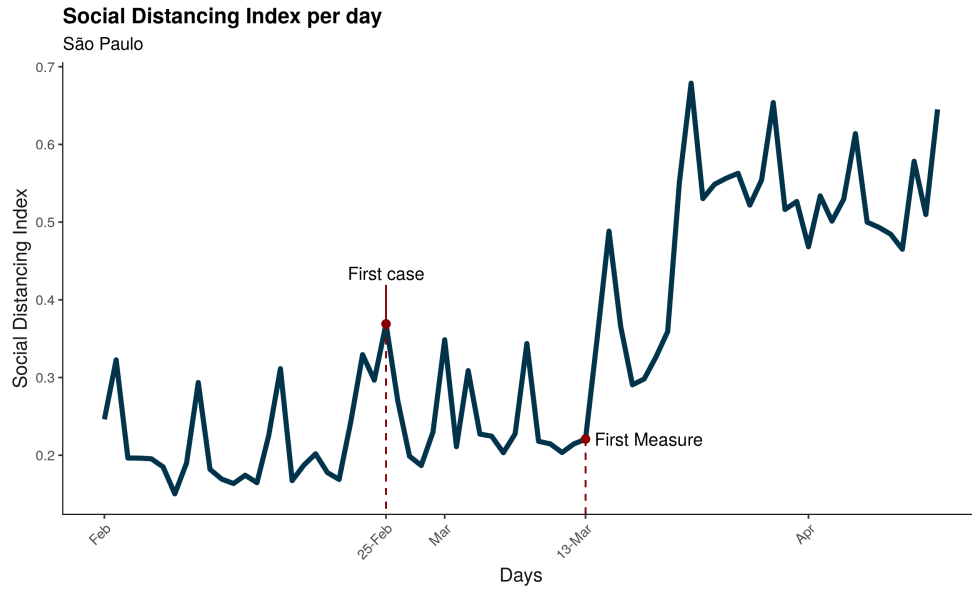
Notes. Cover of the newspaper O Estado de Sao Paulo - Monday, March 16, 2020

Figure B.4. Media on March 25, 2020

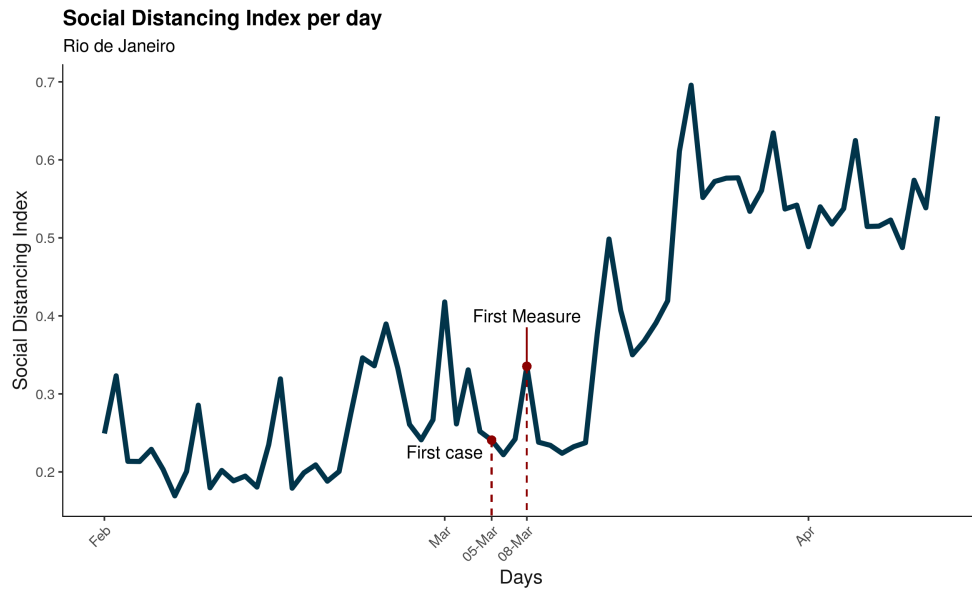


Notes. Cover of the newspaper *Estado de Sao Paulo* - Tuesday, March 25, 2020

**Figure B.5.** Evolution of social distancing in Sao Paulo and Rio de Janeiro.



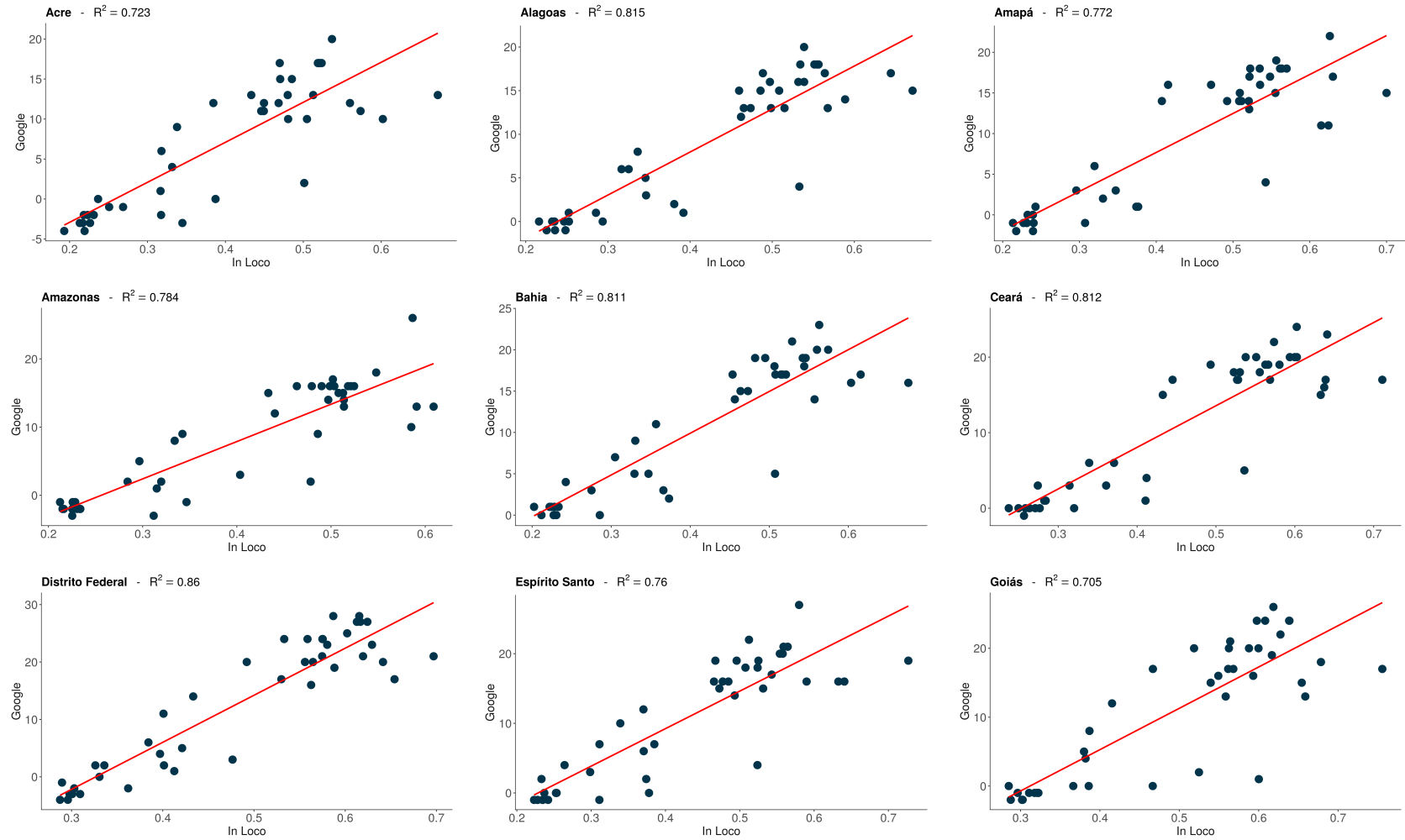
(a) Sao Paulo.



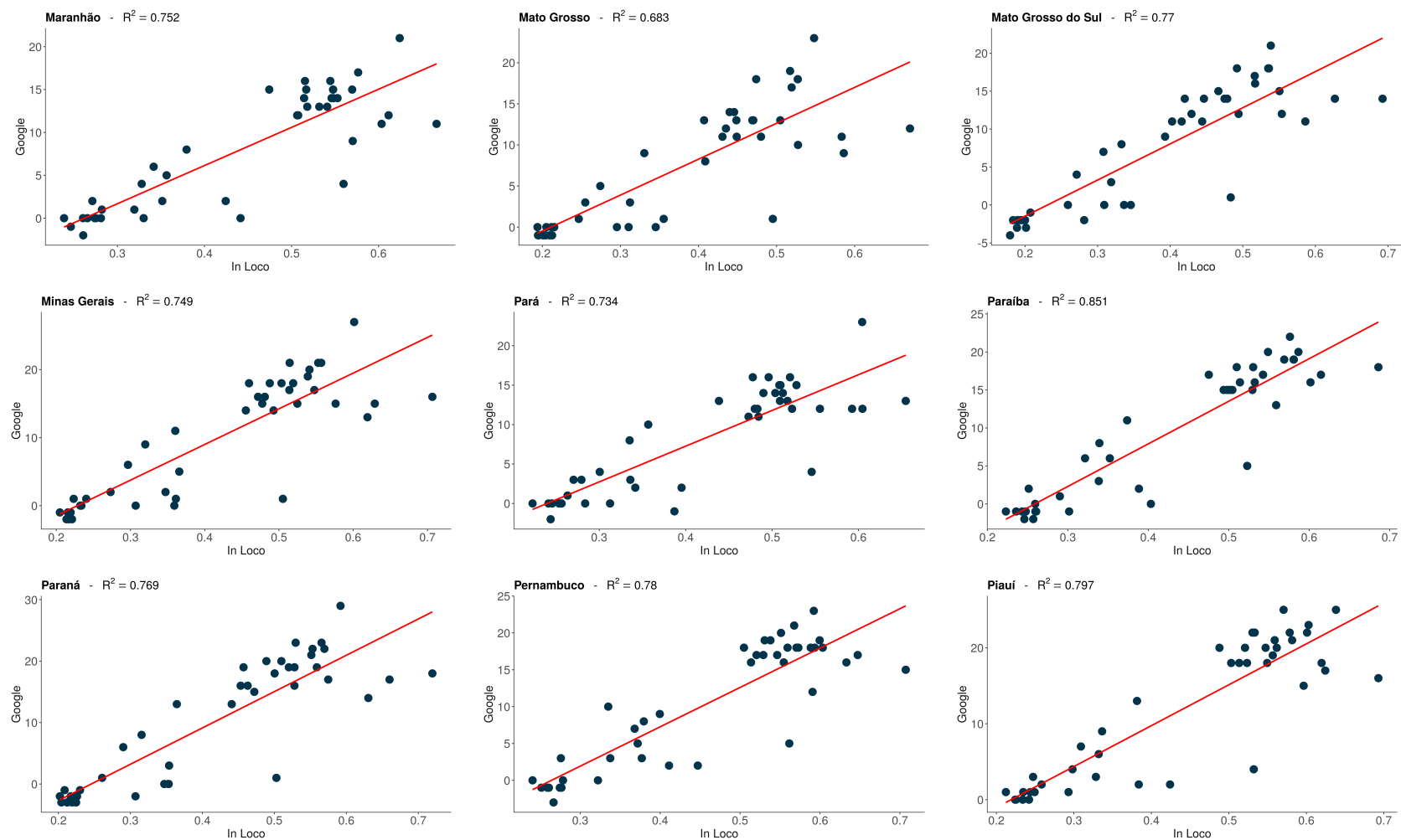
(b) Rio de Janeiro.

*Notes.* The figures show the daily social distancing index for the states of Sao Paulo and Rio de Janeiro from February 1 to April 14, 2020. The social distancing index is calculated by the technology company In Loco using location data from mobile devices. See Section IV for more details on the data.

**Figure B.6.** Social Distancing Measures: Comparing Google and In Loco for each Brazilian state

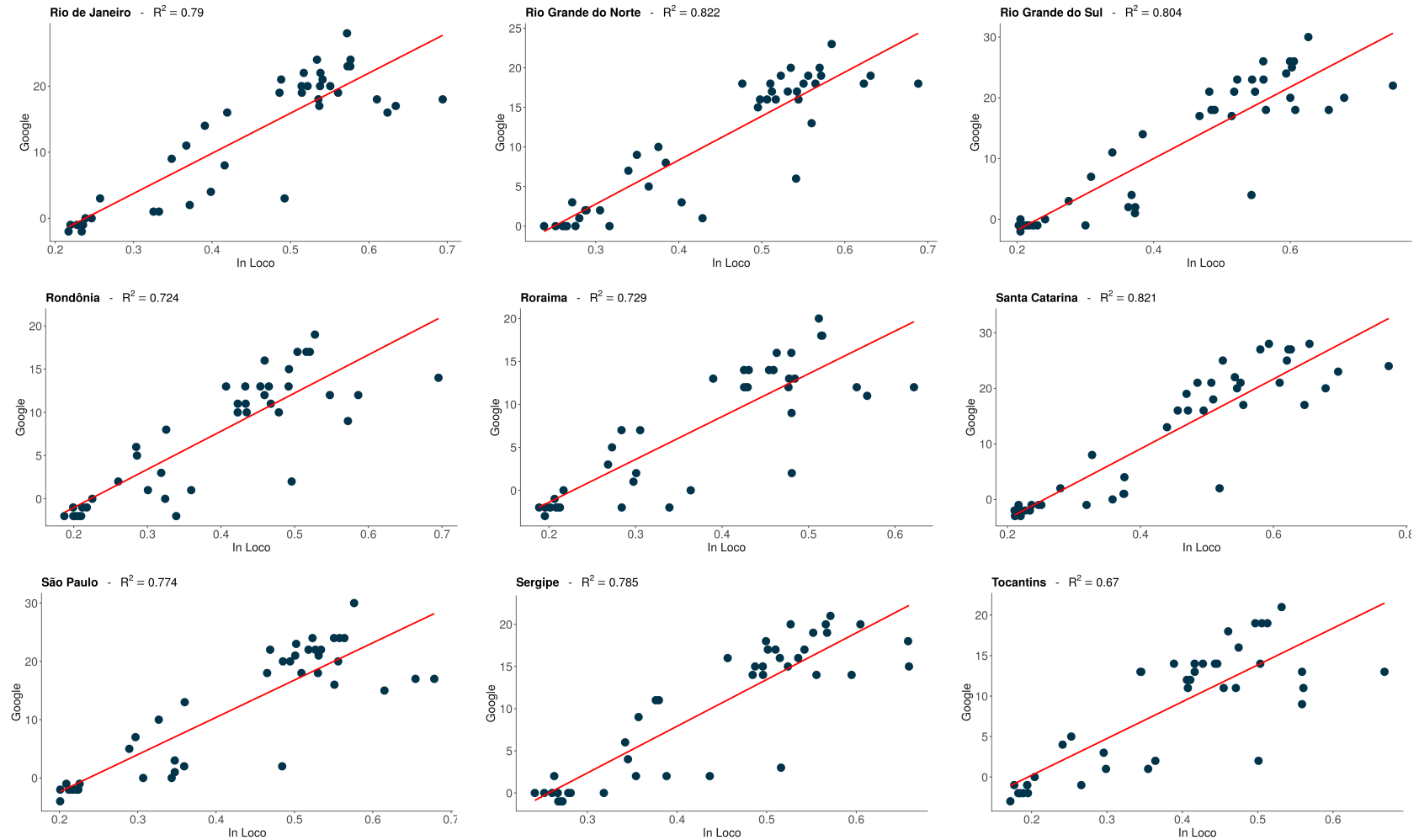


**Figure B.6.** Social Distancing Measures: Comparing Google and In Loco for each Brazilian state (continued)





**Figure B.6.** Social Distancing Measures: Comparing Google and In Loco for each Brazilian state (continued)



*Notes.* These figures show the correlation between In Loco's social distancing index and Google's social distancing index. We use Google's mobility trends for places of residence — see more details on <https://www.google.com/covid19/mobility/data-documentation.html?hl=en>. There are 27 scatter plots, one for each Brazilian state. Each point in the scatter shows a date between 15 February and 11 April 2020.



**TABLE B.1.** Leads and Lags: Baseline Results

	Dependent Variable: Social distancing index			
	(i)	(ii)	(iii)	(iv)
Day = -10	0.0011 ( 0.7237 )	0.0024 ( 0.4513 )	-0.0028 ( 0.4444 )	0.0079 ( 0.4345 )
Day = -9	0.3915 ( 0.7963 )	0.4564 ( 0.4750 )	0.4299 ( 0.4678 )	0.4221 ( 0.4610 )
Day = -8	-0.1601 ( 0.6564 )	-0.3176 ( 0.4219 )	-0.3178 ( 0.4208 )	-0.3247 ( 0.4103 )
Day = -7	-0.1124 ( 0.6564 )	-0.4115 ( 0.4283 )	-0.4227 ( 0.4127 )	-0.4271 ( 0.4057 )
Day = -6	0.2474 ( 0.6861 )	0.1143 ( 0.4400 )	0.0719 ( 0.4171 )	0.0695 ( 0.4092 )
Day = -5	0.0138 ( 0.6988 )	-0.1099 ( 0.4374 )	-0.2228 ( 0.4327 )	-0.2244 ( 0.4217 )
Day = -4	0.0841 ( 0.6682 )	0.0062 ( 0.4313 )	-0.1071 ( 0.4146 )	-0.1074 ( 0.4055 )
Day = -3	0.7117 ( 0.6990 )	0.5995 ( 0.4852 )	0.4863 ( 0.4398 )	0.4873 ( 0.4298 )
Day = -2	0.4553 ( 0.6731 )	0.2749 ( 0.4442 )	0.2749 ( 0.4326 )	0.2736 ( 0.4166 )
Day = -1 (base period)	0	0	0	0
Day = 0	0.4156 ( 0.8281 )	0.2107 ( 0.5277 )	0.2218 ( 0.5222 )	0.2044 ( 0.5080 )
Day = 1	-1.0193 ( 0.7600 )	-1.1912 ( 0.4743 )	-1.2177 ( 0.4640 )	-1.1863 ( 0.4511 )
Day = 2	-0.8074 ( 0.7058 )	-1.2816 ( 0.4775 )	-1.2819 ( 0.4693 )	-1.2495 ( 0.4471 )
Day = 3	-0.8767 ( 0.7227 )	-1.3443 ( 0.4312 )	-1.3556 ( 0.4171 )	-1.3208 ( 0.4055 )
Day = 4	-0.5623 ( 0.7890 )	-1.2121 ( 0.4581 )	-1.2545 ( -1.2545 )	-1.2178 ( 0.4221 )
Day = 5	-1.0394 ( 0.8076 )	-1.6554 ( 0.5063 )	-1.7683 ( 0.4887 )	-1.7308 ( 0.4646 )
Day = 6	-0.9771 ( 0.7154 )	-1.3825 ( 0.4870 )	-1.4957 ( 0.4574 )	-1.4569 ( 0.4343 )
Day = 7	-0.7361 ( 0.8013 )	-1.3052 ( 0.5714 )	-1.4185 ( 0.5224 )	-1.3783 ( 0.4995 )
Day = 8	-1.0137 ( 0.7028 )	-1.4431 ( 0.5122 )	-1.4431 ( 0.4977 )	-1.4053 ( 0.4675 )
Day = 9	-1.1758 ( 1.0665 )	-1.8296 ( 0.7445 )	-1.8296 ( 0.7296 )	-1.7904 ( 0.6942 )
Day = 10	-0.8796 ( 0.7189 )	-1.2887 ( 0.4568 )	-1.2938 ( 0.4481 )	-1.2440 ( 0.4328 )
Controls	No	Yes	Yes	Yes
Day FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Observations				
Number of Municipalities	3,950	3,950	3,950	3,950

Notes. This table presents results from the estimation of Equation V.1. The baseline period is the day before each main event. The unit of observation is a municipality-day. Robust standard errors (in parentheses) are clustered at the state-day level. The overall sample includes 3,950 municipalities. All four models – columns (i) to (iv) – include both municipality and day fixed effects. Column (i) does not include any control variable. Column (ii) controls for baseline poverty  $\times$  day FE and baseline rural  $\times$  day FE. Poverty is a dummy that equals one if the municipality's income is below the national median. Rural dummy equals one if the municipality's population located in rural areas is below the national median. Column (iii) controls for baseline poverty  $\times$  day FE, baseline rural  $\times$  day FE, and state-level NPI dummies. Column (iv) controls for baseline poverty  $\times$  day FE, baseline rural  $\times$  day FE, state-level NPI dummies, and state-specific linear trends.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## C Appendix: The President’s Pronouncements

In this appendix, we provide a transcription in English of all official pronouncements made by Brazil’s President from January 1, 2020 to June 30, 2020. Recall that the World Health Organization (WHO) has declared the COVID-19 outbreak a global pandemic on March 11, 2020. During that period, the President has made six official pronouncements: March 6, March 12, March 24, March 31, April 8, and April 16.<sup>19</sup>

### C.1 Pronouncement on March 6

“Good night.

The world faces a big challenge. In recent months, a new virus has emerged, against which we have no immunity. The cases started in China, but the virus is already present on all continents.

Brazil strengthened its surveillance system in ports, airports, and health facilities and was the first country in South America to deal with the disease. Since then, we have transmitted daily, transparent information to all states and municipalities so that each one can better organize services’ delivery to the population.

The Federal Government has been providing technical guidance to all states through the Ministry of Health.

The other ministries joined forces and, together with the other branches, will continue to guarantee our institutions’ functioning until the return to normality.

I determined actions that expand the functioning of health posts and strengthen our hospitals and laboratories.

I call on the Brazilian population, especially health professionals, to work together and overcome this situation together. The moment demands union.

Although the problem may get worse, there is no reason to panic. Strictly following the experts’ recommendations is the best preventive measure.

May God protect and bless our Brazil.”

### C.2 Pronouncement on March 12

“In light of the Coronavirus’s outbreak in many countries, the World Health Organization has responsibly classified the current situation as a pandemic.

The Brazilian Health System, like other countries, has a limit on the number of patients that can be treated. The government is careful to keep the evolution of the situation under control. The number of infected people will likely increase in the coming days, without, however, be the cause of any panic.

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<sup>19</sup>The text of each of these speeches can be accessed at: <https://www.gov.br/planalto/pt-br/acompanhe-o-planalto/pronunciamentos>.

There is a more significant concern, for obvious reasons, with the elderly. There is also a recommendation from health authorities to avoid large popular concentrations. We want the population to be active and zealous regarding public affairs, but we can never jeopardize our people's health.

The spontaneous and legitimate movements, scheduled for March 15, serve the interests of the nation. Guided by law and order, they demonstrate the maturity of our democracy and are evident expressions of our freedom. However, in the light of recent events, they need to be rethought.

Our health and our family members' health must be preserved. The moment is one of union, serenity, and common sense.

We cannot forget, however, that Brazil has changed. The people are attentive and demand from us respect for the Constitution and zeal for the public money.

For this reason, the motivations of the public will remain alive and unwavering.

May God bless our Brazil."

### **C.3 Pronouncement on March 24**

"Good night.

Since when we rescued our brothers in Wuhan, China, during an operation coordinated by the Ministries of Defense and Foreign Affairs, the yellow light has appeared for us.

We started to prepare to face the Coronavirus because we knew that it would arrive in Brazil sooner or later. Our Minister of Health met with almost all health state secretaries to build the strategic plan to fight the virus. Since then, Dr. Henrique Mandetta has been doing an excellent job of clarifying and preparing the SUS to care for possible victims.

But, what we had to contain at that moment was panic, hysteria and, at the same time, devise a strategy to save lives and avoid mass unemployment. We did so, almost against everything and against everyone.

Much of the media went against the grain. They spread exactly the feeling of dread, with the announcement of the large number of victims in Italy as their flagship. A country with a large number of older people and a climate totally different from ours. The perfect scenario, enhanced by the media, for a real hysteria to spread throughout our country.

However, it is clear that from yesterday to today, part of the press has changed its editorial: they ask for calm and tranquility. This is very good, congratulations to the Brazilian media. It is essential that balance and truth prevail among us.

The virus has arrived, is being faced by us, and will soon pass. Our life must go on. Jobs must be maintained. The livelihood of families must be preserved. We must, yes, return to normality.

A few state and local authorities must abandon the scorched earth concept, the transportation block, the closure of trade, and mass confinement.

What is happening in the world has shown that the risk group is that of people over 60 years old. So why close schools? Fatal cases of healthy people under the age of 40 are rare. 90% of us will have no manifestation if one gets contaminated. Yes, we must be extremely concerned about not transmitting the virus to others, especially to our dear parents and grandparents, respecting the Ministry of Health guidelines.

In my particular case, due to my athlete's background, if the virus infected me, I wouldn't have to worry, I wouldn't feel anything or I would, at most, have a cold or a little cold, as the well-known doctor from that well-known television said.

While I am speaking, the world is seeking treatment for the disease. The American FDA and Albert Einstein Hospital, in São Paulo, are seeking proof of the effectiveness of chloroquine in the treatment of Covid-19. Our government has received positive news about this medicine manufactured in Brazil, widely used in the fight against malaria, lupus, and arthritis.

I believe in God, who will train scientists and researchers from Brazil and the world to cure this disease.

I take this opportunity to pay my tribute to all health professionals – doctors, nurses, technicians, and collaborators – who at the front receive us in hospitals, treat us, and comfort us.

As I have been saying since the beginning, without panic or hysteria, we will overcome the virus and be proud to be living in this new Brazil, which has everything, yes, everything to be a great nation.

We are together, increasingly united.

God bless our dear homeland.”

## C.4 Pronouncement on March 31

“Good night.

I come at this important time to address you all.

Since the beginning of the government, we have worked on all fronts to solve historical problems and improve people's lives. Brazil has come a long way in these 15 months, but now we are facing the greatest challenge of our generation.

My concern has always been to save lives, both those that will be lost by the pandemic and those that will be affected by unemployment, violence, and hunger.

I put myself in the place of the people, and I understand their anguishes. Protective measures must be implemented in a rational, responsible, and coordinated manner.

In this sense, Mr. Tedros Adhanom, Director-General of the World Health Organization, said he knew that “many people, in fact, have to work every day to earn their daily bread” and that “governments have to take this population into account”.

He went on to say, “if we close or limit movements, what will happen to these people, who have to work every day and who have to earn their daily bread every day?” He continues, “So each country, based on its situation, should answer this question.”

The WHO director also states that, concerning each measure, “we have to see what it means for the individual on the streets” and adds “I come from a poor family, I know what it means always to be concerned about your daily bread and that must be taken into account, because every individual matters. The way each individual is affected by our actions has to be considered”.

I do not use these words to deny the importance of measures to prevent and control the pandemic but to show in the same way that we need to think about the most vulnerable. This has been my concern from the beginning.

What will become of the street vendor, the barbecue vendor, the day laborer, the bricklayer's assistant, the truck driver, and the other freelancers I have been in contact with throughout my public life?

That is why I determined that our Minister of Health should spare no effort, supporting through SUS all the states of Brazil, increasing the capacity, and preparing the health network to fight the pandemic.

Thus, new beds are already being purchased with respirators, personal protective equipment, test kits, and other necessary supplies.

I also ordered our Minister of Economy to adopt all possible measures to protect, above all, the Brazilians' jobs and income.

We did this through financial aid to states and municipalities, credit lines for companies, monthly aid of R\$ 600 to informal and vulnerable workers, entry of over 1.2 million families in the Bolsa Família program, we also postponed the payment of debts of states and municipalities, just to mention some of the measures adopted.

Besides, today, in agreement with the pharmaceutical industry, we decided to postpone the readjustment of medicines in Brazil for 60 days.

We have a mission: to save lives, without leaving jobs behind.

On the one hand, we have to be cautious and cautious with everyone, especially with the elderly and those with pre-existing diseases.

On the other hand, we have to fight unemployment, which is growing rapidly, especially among the poorest.

We will fulfill this mission while taking care of people's health.

The virus is a reality, there is still no vaccine against it or medicine with scientifically proven efficiency, although hydroxychloroquine seems quite effective.

The Coronavirus came, and one day it will go away; unfortunately, we will have losses along this path. I myself have lost loved ones in the past, and I know how painful it is. We all have to avoid as much as possible any loss of human life. As the Director-General of WHO said, "Every individual matters."

At the same time, we must avoid the destruction of jobs, which is already causing a lot of suffering for Brazilian workers.

At the last G-20 meeting, we, the Heads of State and Government, pledged to protect lives and preserve jobs. I will do so.

Since February, I determined the use of the Armed Forces to fight the Coronavirus. The Ministry of Defense has rescued Brazilians in China. Now the Armed Forces act in support of the Health and Safety areas throughout Brazil. An Operations Center was created to coordinate the actions, and 10 Joint Commands were created, covering the entire national territory. They carry out activities ranging from setting up patient screening stations, supporting information campaigns and vaccination campaigns, logistics, and transportation of medicines. The Military Chemical-Pharmaceutical Laboratories entered with full force, and, in 12 days, one million chloroquine tablets will be produced, in addition to hand sanitizers.

I repeat: the side effect of measures to combat the Coronavirus cannot be worse than the disease itself.

My obligation as the president goes beyond the next few months. Prepare Brazil for its resumption, reorganize our economy and mobilize all our resources and energy to make Brazil

even stronger after the pandemic.

I take this opportunity to express my solidarity and thank the efforts and personal sacrifice of all health professionals, in the security area, truck drivers, and all service workers considered essential that are keeping the country functioning, as well as the men and women in the countryside who produce our food.

With this same spirit, I thank and reaffirm the importance of collaboration and the necessary union of all in a great pact to preserve life and jobs: parliament, judiciary, governors, mayors, and society.

God bless our beloved Brazil.”

## C.5 Pronouncement on April 8

“Good night!

We live a unique moment in our history.

To be President of the Republic is to look at the whole and not just the parts. There is no doubt that our primary objective has always been to save lives.

I would like, first of all, to show my solidarity with the families that lost their loved ones in this war that we are facing.

I have a responsibility to decide on the country’s issues broadly, using the ministers’ team I have chosen to lead the nation’s destinies. Everyone must be in tune with me.

I have always said that we had two problems to solve, the virus and unemployment, which should be dealt with simultaneously.

I respect the autonomy of governors and mayors. Many measures, whether restrictive or not, are their sole responsibility. The Federal Government has not been consulted on its scope or duration. I hope that soon we will come out together and stronger so that we can better develop our country.

As stated by the Director-General of the World Health Organization, each country has its particularities, that is, the solution is not the same for everyone. The most humble cannot stop moving to get their daily bread.

The consequences of treatment cannot be more harmful than the disease itself. Unemployment also leads to poverty, hunger, misery, in short, death itself. In this spirit, I have instructed my ministers.

After listening to doctors, researchers, and heads of state from other countries, I started to publicize, in the last 40 days, the possibility of treating the disease since its initial phase.

A little while ago, I talked to Dr. Roberto Kalil. I congratulated him for his honesty and commitment to the Hippocratic Oath, assuming that he not only used Hydroxychloroquine, but also gave it to dozens of patients. Everyone is saved.

He told me more: that, despite not having completed the testing protocol, he administered the medication now, so as not to regret it in the future. This decision could go down in history as having saved thousands of lives in Brazil. Our congratulations to Dr. Kalil.

We have more good news. As a result of my direct conversation with the Prime Minister of India, we will receive, until Saturday, the raw material for continuing producing Hydroxychloroquine, so that we can treat COVID-19 patients, as well as malaria, lupus, and arthritis. I thank Prime

Minister Narendra Modi and the Indian people for this very timely help to the Brazilian people.

Starting tomorrow, we will begin paying the R\$ 600.00 of emergency aid to support informal workers, unemployed, and micro-entrepreneurs for three months.

We also granted exemption from the electricity bill's payment to beneficiaries of the social tariff for three months, serving more than nine million families whose bills are up to R\$ 150.00.

We made 60 billion available through Caixa Econômica Federal to be used as working capital for micro, small and medium-sized enterprises, and civil construction companies.

Beneficiaries of Bolsa Família, which are almost 60 million people, will also receive a supplementary allowance for Emergency Aid.

In June, we also authorized the withdrawal of up to R\$ 1,045.00 to those who have an account linked to FGTS.

We repatriated more than 11,000 Brazilians who were abroad, in an effort led by Itamaraty, Ministry of Defense and Embratur.

I am sure that the vast majority of Brazilians want to go back to work.

This has always been my guide to all ministers, observing the rules of the Ministry of Health.

When I leave the Presidency, I intend to give my successor a much better Brazil than the one I found in January last year.

Let us follow John 8:32: "And ye shall know the truth, and the truth shall make you free!"

I wish everyone a Good Friday of reflection and a Happy Easter Sunday!

God bless our Brazil!"

## **C.6 Pronouncement on April 16**

"Good afternoon. Now I just finished a meeting with Minister Mandetta, approximately 30 minutes, and we discussed the current situation of the Ministry, as well as the pandemic, a very productive conversation, very cordial, where we sealed a cycle at the Ministry of Health. As was expected by me, he volunteered to participate in a transition as smooth as possible, with the greatest wealth of details that can be offered. By common agreement, but that is not the technical term, I will exonerate him from the Ministry in the next few hours.

It was really a consensual divorce, because above me, as President, and of him, as a Minister, is the health of the Brazilian people. Life for us all comes first. The issue of the Coronavirus is taking place all over the world, and each country has its specificities, as the WHO chief rightly said. In Brazil, it is no different.

As the President of the Republic, I coordinate 22 ministries and, in most cases, the problem is not related to just one Ministry. When we talk about health, we talk about life, and we can't stop talking about jobs. As an unemployed person, he will be more likely to suffer health problems than an employed person. And since the beginning of the pandemic, I addressed all the ministers and talked about life and employment. It is like a patient with two diseases, and we cannot abandon one and treat exclusively another, because, at the end of the line, that patient may lose his life.

We know about their interpretations of what one says. The interpretation depends on the editorial line or that reporter. We always talk about life and employment, never employment, and the economy in isolation. Never.

From the beginning, I tried to carry a message of tranquility. The climate of almost terror has settled amid society. This is not good, because a person who lives under stress, in an environment of hysteria, is a person who is prone to acquire new diseases or aggravate those that he already has.

We fully understand the gravity of the situation. We would like no one to lose lives, not just for this, and for no reason, because life when it comes to an end, death touches us all. I have a 93-year-old mother, she is quite old, with some comorbidities, and I hope she will live for a long time.

During that time, it is the minister's right to defend his point of view as a doctor. And the question of understanding the problem of employment also was not in the way that I thought, as President, that should be addressed. I do not condemn, I do not recriminate, and I do not criticize Minister Mandetta. He did what, as a doctor, he thought he should do.

Over that time, the separation increasingly became a reality, but we cannot make decisions so that the work done by him until now is lost. What I talked about during that time with the oncologist Dr. Nelson, next to me, went to make him understand the situation as a whole, without obviously abandoning his main interest, the maintenance of life, but without forgetting that, besides that, we had other problems. This other is the question of unemployment, which, increasingly, we see is apparent in our country. Alongside with the virus came a real machine for grinding jobs. The most humble people began to experience the problem first. They cannot stay at home for long.

Therefore, it is not what we would like to do; it is what can be done. We cannot harm those most in need. They cannot stay at home for long without looking for their food. And the first to suffer from this were informal ones, in the order of 38 million in Brazil. Jobs with a formal contract, we also see, as we have talked to the whole society, are increasingly being destroyed. If it reaches such a level, what we do not want is that the return to normality and other problems will appear in addition to taking a long time. We are concerned that this return to normality arrives as soon as possible.

So, even before other measures, we took several measures, among them, one of the most important is Emergency Aid for exactly informal and similar workers. So the government did not abandon, at any time, the neediest.

And what I talked to Dr. Nelson is that, gradually, we have to open jobs in Brazil. This great mass of humble people cannot be trapped inside the house. And, what is worse, when I return, I have no job. And the government cannot maintain this Emergency Aid or other actions for a long time. Approximately 600 billion reais have already been spent, and we can reach R\$ 1 trillion. I know, and I repeat that life is priceless, but the economy, employment, must return to normality, not as soon as possible, as was discussed with Dr. Nelson. Still, he has to start flexibilization so that we will not suffer precisely from it.

We all, Executive branch, Legislative branch, Judiciary decisions, have to make these decisions with great prudence. The government is not an eternal source of help. At no time was I consulted on measures taken by most governors and mayors. I'm sure they knew what they were doing. The price will be high. Did they have to do anything? They did, but if, perhaps, they have exaggerated, do not hold others accountable, not the Federal Government, do not put this bill, on the backs of our suffering Brazilian people.

We do not want to create any controversy here with another branch. They are all responsible for their actions, just as I am, as chief of the executive branch. I will not shirk my responsibility. Decisions, I am forced to make. Because I have always said, given my military background: worse than a bad decision is no decision. I will never sin by omission. That was the teaching I



had in my military career.

This will be my line of action. We set up a government that is different from the ones set up previously, which has worked. We were practically flying at the end of the last quarter. Everything was going very well. Brazil had everything to succeed, in a short space of time. This "working out" will now happen, but in a longer time, where I appeal to the other branches: the responsibility is not only mine, it belongs to all of us. The excesses that some have committed let them take responsibility for them. I would never send my Armed Forces to arrest whoever was on the streets. Never, as head of the Executive branch, will I withdraw the constitutional right to come and go, regardless of the citizen. We must take measures, yes, to prevent the proliferation or expansion of the virus, but through conviction and with actions that do not threaten the freedom and the individual guarantee of any citizen. We will never restrict any fundamental rights of a citizen. Who has the power to decree a state of defense or state of siege, after a decision, obviously, by the Brazilian Parliament, is the President of the Republic, and not the mayor or governor.

The excess will not lead to the solution of the problem; on the contrary, it will worsen. And, as I have been saying for a long time, I am sure, I have friends, from BMA, members of the Brazilian Medicine Association, that the medicine to cure a patient cannot have a more harmful side effect than the disease itself.

Therefore, the Federal Government, the President of the Republic, has a broader view than each minister per se. This is our job. These are often the decisions that we are forced to make. Problems happen in everyone's life, and we must look for the best way to solve it.

So, at that moment, in addition to thanking Mr. Henrique Mandetta, for his cordiality, for the way he conducted his Ministry, I also thank Dr. Nelson for accepting this invitation. And he knows the enormous challenge that lies ahead. A transition is beginning today, which will gradually serve to redirect the position not only of the President but of the 22 ministers who make up our government. All ministers are involved in the same cause, without exception. We are together in defense of the life of the Brazilian people, in defense of jobs and, also, obviously, seeking to bring tranquility and peace to our people.

So, I thank Dr. Nelson, to whom I pass the word now."