Active and Passive Transparency[*]

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February, 2020

Abstract

Audits and freedom of information (FOI) laws have independently been the subject of many transparency studies, but are rarely implemented in isolation. I address this gap in the literature by developing the first simultaneous analysis of audits (active) and FOI laws (passive) transparency policies. Using a unique *quasi*-experimental, concurrent implementation of these policies in Brazil, I find that the joint implementation of active and passive transparency improve municipal human development index (HDI) by 10.7 percentage points. Surprisingly, the independent adoption of a passive transparency program has a larger effect than active transparency on HDI and other municipal governance indicators. This result suggests that FOI laws are better at improving governance levels than top-down auditing.

Keywords: government performance; transparency; accountability; corruption; governance.

JEL classification: D73; K42; P48; H83.

1 Introduction

Institutional scholars often claim that government transparency is a key factor for good governance and economic development (Kaufmann et al., 1999; Rothstein, 2012). When governments make their business public, they increase the scrutiny and oversight of actions taken by elected officials and civil servants. In many countries, for instance, citizens can access expense reports filed by politicians to verify and demand the proper use of public resources. Institutional transparency thus creates an accountability mechanism aligning the interests of agents and principals, further supporting economic and social progress. In this study, I contribute to this literature by investigating the simultaneous effects of two transparency policies on municipal governance in Brazil.

At present, transparency analyses suffer from the same overarching limitations of the institutional scholarship. There is no consensus on what they mean, whether they vary across or within countries (or both), and how exactly they impact economic and social development (e.g., the endogenous institutions literature in Acemoglu et al., 2005; Dal Bo et al., 2010). In this study, I address some of these limitations by disaggregating, defining, and analyzing transparency initiatives. I investigate the relationship between transparency and governance at the local level, moving beyond cross-country analysis of institutions. I break down transparency policies into two categories: active transparency, defined as action initiated by government to release public information, and passive transparency, defined as action making information available only upon request. What differentiates each policy is whether government releases information by action (active) or by request (passive). To date, studies have been limited either by aggregate measures of transparency or individual analysis of active or passive transparency. However, these policies are rarely implemented in isolation. Governments often adopt them as concurrent anti-corruption instruments. Thus, understanding how these policies interact is a fundamental step for fighting corruption and, consequently, improving governance.

I take advantage of a unique period in Brazil in which these policies coexisted for about fifteen years. Between 2003 and 2015, the Office of the Comptroller-General (CGU) implemented a random audit program investigating the use of federal resources by municipalities across Brazil. This program is the source of exogenous variation in active transparency across Brazilian municipalities. In 2012, Brazil also enacted its FOI Act establishing channels of information release across all government levels. This legislation provides another source of exogenous variation in passive transparency when comparing municipal outcomes before and after FOI. By overlaying the two policies, I artificially create a two-by-two factorial experiment where municipalities fall into one of four treatment conditions summarized in figure 1: (i) control (unaudited municipalities before FOI); (ii) passive transparency (unaudited municipalities after FOI); (iii) active transparency (audited municipalities before FOI); (iv) active and passive transparency (audited municipalities after FOI).[1]

To analyze the effects of transparency policies, I use performance, development, and sanction

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[1]This *quasi*-experimental design is the same as a randomized-controlled trial that follows treatment and control units over time.

outcomes between 2005 and 2017. I call this the *governance* experiment because these measures form a comprehensive picture of the quality of municipal administration in Brazil. They also contribute a granular, in-depth analysis of institutional quality at the municipal-level, a significant improvement from country-wide measurements in cross-country studies. The results show that the joint implementation of active and passive transparency contributes to an improvement of 10.7 percentage points in the municipal human development index (HDI). To put this in perspective, this much gain in Brazil's country-wide HDI would move it from 72th to 36th place in the United Nations' 2019 Human Development Index Ranking – thus a substantial improvement. Passive transparency significantly improves all three outcomes, indicating an overall improvement in institutional quality, while active transparency only improves municipal administration performance. I explore the mechanisms behind these effects in the results section.

Since these transparency programs also had evaluation components, they allow for two additional, cross-effects experiments. First, the random audits produced objective measures of corruption (extensively discussed in Ferraz and Finan, 2008, 2011; Brollo et al., 2013; Zamboni and Litschig, 2018; Avis et al., 2018), such that I can compare municipalities audited before and after FOI to measure the effect of passive transparency on corruption (*corruption* experiment). Second, CGU also collected objective, FOI compliance measures between 2015 and 2017 for a subset of municipalities, such that I can compare audited and unaudited municipalities in this subsample to measure the effect of active transparency on information release (*information* experiment). Thus, I additionally contribute to the literature the analysis of (i) the effects of FOI on corruption and (ii) the effects of audits on FOI compliance. In the corruption experiment, I show significant negative effects of passive transparency. Enacting FOI legislation reduces acts of corruption in public spending by 22.3 percent. These results are not explained by differential corruption trends over time. In the information experiment, the effect of active transparency is even stronger. Audited municipalities almost always provide accurate and timely responses to FOI requests. Though only passive transparency has a consistent, direct effect on governance, both policies have substantial cross-effects and help prevent corruption and improve citizen accountability mechanisms.

The remaining of this paper is organized as follows: in section 2, I discuss the institutional design that allows for the causal identification of both active and passive transparency effects; section 3 suggests the theoretical mechanisms and hypotheses of behind the relationship between transparency on institutional quality; section 4 presents the data; section 5 outlines the empirical strategy (whose results are reported in section 6); finally, section 7 concludes.

2 Transparency Policies in Brazil

Transparency policies are the responsibility of the Brazilian Office of the Comptroller-General (CGU), which was established in 2003 to oversee the use of federal resources across the country. Its mission involved investigating and guaranteeing the proper allocation of resources not only across the federal executive, but also across all levels of executive government – states and municipalities

included. Over time, its attributions expanded from a purely monitoring function to rule-making and even the imposition of legal sanctions on state and municipal governments, public officials, and private parties contracted by the Brazilian government. Since its inception, CGU has been the most important anti-corruption agency in the country and, despite political changes, it has maintained its high-profile status as an autonomous oversight agency within the federal government.

CGU is responsible for a number of transparency programs. It processes FOI requests at the federal executive level; it hosts annual conferences on fighting corruption; it works jointly with other law enforcement (Federal Policy and the Office of the Prosecutor-General) to conduct investigations on misuse of public resources; it publishes civil servant wages – just to name a few of its responsibilities. One of its most recognized programs is the random audit of municipalities, which begun in 2003 and ended in 2015.[2] This program consisted of a short CGU visit, generally a week or two long, to a municipality for the investigation of the use of federal resources in public services. The central CGU office provided state teams with a list of inspection orders, covering transfers from the federal government to municipalities in the previous three to four years. The state team would check this list against the records provided by municipal officials. After the visit, auditors summarized their findings in a report which was then made available on CGU's website and forwarded to all prosecuting authorities, such as the Federal Police and local legislative branches, i.e. city councils and state legislative bodies.

The program has been successful since the beginning. In 2004, CGU fed the Federal Police evidence of a corruption scheme covering over 100 procurement contracts for the purchase of emergency vehicles in 119 municipalities between 2000 and 2002, with an estimated loss of $7 million (in 2002 dollars). In addition, the program's design has made it a prolific source of academic research. CGU randomly selected a given number of municipalities in each state and assigned teams of independent, highly-qualified bureaucrats to scrutinize all expenditures made by municipalities under each policy program. CGU officials are tenured civil servants who have been approved in national competitive exams and whose income is both independent of their audit findings and higher than the national average for professionals of same qualification. The audit reports contain detailed information about the program under investigation, the amount of funds that should have been spent, what goods or services should have been procured, etc. CGU officials used a low-medium-high severity scale to classify irregularities in program spending. These reports have been extensively used in the political science and economics literature, and some important studies are Ferraz and Finan (2008, 2011); Brollo et al. (2013); Zamboni and Litschig (2018). Thus, not only the random audit program is an excellent source of unbiased, objective measures of municipal corruption, but also constitutes an exogenous shock of active transparency imposed on a random sample of municipalities starting in 2003.

The second institutional feature making Brazil the perfect case for this research project is the passage of its FOI act in 2011, which came into force in May 2012. The law requires that government

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[2]The program still exists today but, instead of randomly selecting and auditing municipalities, CGU uses an internal risk score model to assign audits to municipalities most at risk of corruption.

offices at all levels, and their affiliated agencies, set up systems of access to public information. Its provisions are similar to that of other FOIAs across the world: all information is public unless expressed and justified by the agency responsible for the information; no agency can charge for use of government data; and any individual or company, national or foreign, can file a request for data. The nationwide scope, the immediate effect, and the standardized, mandatory rules established by FOI make it an exogenous and uniform shock of passive transparency across Brazil starting in May 2012.

While the random audit program both creates an exogenous shock of active transparency and a rich dataset of objective measures of corruption, the same is not true of FOI – which only imposes the passive transparency shock. CGU, however, implemented a random evaluation of FOI called *Transparent Brazil Scale* (EBT), which is the source for objective measures of FOI compliance. The EBT evaluation program ran from 2015 to 2017 and aimed at creating a national ranking of the quality of freedom of information systems across Brazilian states and municipalities. Every year, CGU randomly selected state and municipal governments across the country and sent them four information requests asking for progress on the implementation of FOI, and data on social, education, and health programs. The responses to these information requests were coded as binary variables indicating FOI compliance, both in terms of information accuracy and response time. I construct the FOI outcomes using a subset of the data generated by the EBT program, which I detail in section 4.[3]

3   Expected Effect of Transparency

(weak)

3.1   Active Transparency

I define active transparency as *any action initiated by government, or its affiliated entities, to release public information about government business.* Top-down monitoring of policies, governments, and officials are some ways of implementing active transparency. Monitoring can be anything from setting-up deliberative or investigative committees to auditing instruments. Though I focus on audits in this study, all of these initiatives aim at increasing the costs of illegal activities, following the criminal behavior models pioneered by Becker (1968); Becker and Stigler (1974); Rose-Ackerman (1975). According to these models, criminal behavior is the result of cost-benefit calculations of engaging in criminal activity; for instance, if governments audit the use of funds and communicate irregularities to law enforcement, the media, and the public, they increase the costs of illegal action by increasing the probability of crime detection and prosecution. Therefore, I can plausibly expect that active transparency improves governance, and results in better government performance, higher

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[3]Multiple studies have confirmed the quality of CGU programs. Yet, many of the documents detailing the random audit and the EBT initiatives are available online for further check. For instance, CGU published detailed guides on randomization strategy and outcome measurement for both programs, an initiative that lends additional support to the unbiased and thorough evaluation and implmentation of transparency programs.

human development, and more sanctions imposed for officials' misconduct. This reasoning forms hypothesis H_{A1}.

H_{A1}: *A municipal government that has experienced an active transparency intervention (audits) should see an improvement in governance, measured by performance, development, and sanctions outcomes.*

In addition to performance, I expect that audits positively impact FOI compliance. When local governments welcome a team of auditors and have to go through their program records in order to answer inspectors' questions, it is likely that they will learn from experience and improve information storage in response to increased scrutiny. Both the time it takes to process FOI requests and the accuracy with which these requests are reported would see improvements after an audit has taken place. Hypothesis H_{A2} captures this relationship.

H_{A2}: *A municipal government that has experienced an active transparency intervention (audits) should see better FOI compliance, measured by how timely and accurate the information released is.*

3.2   Passive Transparency

There is no widely-accepted definition of passive transparency as it only recently became the subject of scholarly interest. To fill in the gap, I propose the definition of passive transparency as *any action initiated by government, or its affiliated entities, in which information is made available but released only upon request.* This definition focuses on the role of the government as responding to, rather than initiating, a transparency action. In actuality, passive transparency studies have mostly analyzed freedom of information legislation. FOI laws constitute dormant accountability measures which are activated when there is an explicit request from the public, the media, or any other non-governmental agent. An important concern with FOIs is whether they are inherently positive. As suggested by Prat (2005), transparency can lead to worse social outcomes if agents conform to a certain behavior that is detrimental to principals. For instance, officials can refrain from implementing utility-maximizing but risky policies to avoid FOI challenges. An additional concern comes from the effort required to meet FOI standards. Governments would scramble to organize their files and make sure all information is available at the expense of their core responsibilities. If, eventually, these data are not requested by anyone outside government, or if data are requested but there are no wrongdoings, then passive transparency has consumed resources and has not produced social benefits.[4] Thus, I adopt a skeptical approach and suggest a negative relationship between

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[4] The case where there are benefits of organizing information for active transparency is different in at least two dimensions. First, the former case is primarily concerned with the use of specific resources instead of all data on government activities. The benefits of investigating and correcting the use of funds are much more clear than that of making all municipal normative acts public; second, the costs of releasing information in active transparency are mostly borne by the external auditing agency.

passive transparency and both performance and corruption outcomes. These ideas are presented in hypotheses H$_{P1}$ and H$_{P2}$.

H$_{P1}$: *A municipal government that has experienced a passive transparency intervention (under scrutiny of FOI law) should see worse governance levels, measured by performance, development, and sanctions outcomes.*

H$_{P2}$: *A municipal government that has experienced a passive transparency intervention (under scrutiny of FOI law) should see worse corruption levels, measured by the number of corruption irregularities found in federal program spending.*

3.3 Active and Passive Transparency

The joint treatment of active and passive transparency (also called double transparency in this study) occurs when a government body has been audited in the past and when FOI is in force. In this case, government information has been revealed by a monitoring agency and additional information can be revealed upon request. Since I posited in subsections 3.1 and 3.2 opposing impact of active and passive transparency, the expected joint effect is ambiguous. They can partially or entirely offset each other. Suppose audits reveal corruption and make public officials wary of further investigations using FOI data. In this case, they can conform to group behavior to avoid risky, utility-increasing (or to hide utility-decreasing) actions. Active transparency is socially beneficial but passive transparency is not. The net effect depends on the magnitude of each independent intervention, and should be calculated empirically (hypothesis H$_{AP}$).

H$_{AP}$: *The effect of a joint active and passive transparency intervention (audits and FOI law) on performance, development, and sanctions is ambiguous.*

Unfortunately, I do not observe corruption and FOI compliance outcomes for all municipalities in the sample. These measures are only constructed from randomized evaluations conducted by CGU on a subsample of municipalities in Brazil. I summarize all hypotheses and expected effects in table 1.

4 Data

(weak) The data come from various sources and span over multiple years (2005-2017). I construct a repeated cross-section dataset of Brazilian municipalities with performance, development, sanction, corruption, and information outcomes. The outcomes are measured at the municipality-year level, totalling 7,149 observations for 4,316 unique municipalities. The independent variables of interest are audit (active) treatment, FOI (passive) treatment, and double (active and passive transparency) treatment. I construct all analyses with municipal covariates and linear time trends for all years under study.

I construct the performance, development, and sanctions measures from three sources. The performance outcome comes from the statistical profile of municipalities in Brazil, a dataset published every two or three years by the National Statistics Office (IBGE). One of the information they collect is whether municipalities have approved, or updated, their municipal urban development plan (MUDP). These plans lay out land use regulations and zoning laws that support (structured) spatial growth of municipalities. Since crafting such a plan requires inputs from all areas of local government, they are good proxies of performance because they indicate whether governments are good at coordinating efforts to implement policies. I build a dataset of MUDP adoption for all waves of the statistical profile published by IBGE and match them to municipalities included in this study's sample.

The development outcome comes from industry association FIRJAN, the second largest in the country. Its research team produces an annual report of municipal human development index (HDI) for all municipalities in Brazil, closely following the United Nations' HDI methodology. All underlying data in its municipal HDI come from the many economic and social research offices across the Brazilian government, such that there are no concerns about data quality.

Sanctions come from three datasets of law enforcement agencies in Brazil: (i) the Federal Police-CGU's dataset on corruption crackdown operations; (ii) CGU's dataset on enforcement operations conducted to seize evidence as mandated by judicial proceedings; (iii) National Council of Justice's dataset on convictions of public officials for misuse of public office. For all municipalities in the sample and all years, I construct binary variables on whether the municipality has been the target of a corruption crackdown operation, whether municipalities have had documents seized as evidence, and whether any of their public officials has been convicted for misuse of public office. I then create a binary sanctions variable taking up value one if any of these sanctioning actions has taken place for any given municipality-year pair.

For corruption outcomes, I use CGU's random audit evaluation program, which ran until 2015. I use the same dataset as Avis et al. (2018), which is publicly available online as a response to a freedom of information request. It contains all investigation orders for municipalities randomly selected for audits since 2005, which is when CGU developed their standardized coding of corruption and mismanagement irregularities. The corruption, mismanagement, and number of irregularities outcomes are the same as Avis et al. (2018), i.e. the (logged) number of irregularities of each type. The level of observation is the municipality-lottery pair.[5]

FOI compliance outcomes come from CGU's FOI evaluation program EBT, which ran between 2015 and 2017. Specifically, I use four information requests sent to municipalities every year that EBT ran. These requests measured the quality of information on two dimensions: (i) whether the municipality reported back in the time mandated by LAI; (ii) whether the information provided was accurate. These requests covered four policy areas: health, education, social, and transparency programs. For the time dimension, I compute whether the municipality has responded to any of the

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[5]Between 2006 and 2015, there were between one and three lottery draws for inspection, which means that the municipality-lottery pair also fully identifies the year in which the audit took place. Therefore, all observations in our sample at measured at the municipality-year they occurred.

four requests within the deadline. For the accuracy dimension, I compute whether the municipality has provided correct answers to any of the four requests. A particularly important feature of EBT is that the information requests concerned programs whose implementation and evaluation were under CGU's responsibility. This means that CGU kept program records against which they could compare all FOI responses they received, further increasing data quality.

Municipal covariates come from the 2010 Census, so they are repeated across observations for different years. I include the share of urban population, the share of female population, the share of illiterate population, income per capita levels (logged), the Gini coefficient, the share of poor population, whether the municipality hosted a AM radio station, whether the municipal administration had set up both the health and education participatory councils, and whether the municipality was the seat of a judiciary branch unit. These variables control for observable differences in municipal conditions that could bias treatment results. I report their summary statistics in table 2. I show all treatment groups from figure 1 but omit the control group. For each treatment group, I report the group mean, the mean difference against all other groups, and the p-value of a t-test on the mean difference. In the bottom panel, I indicate which experiment uses which sample. According to table 2, differences across groups are small and statistically insignificant at p-value $= .05$. The only exception is the log of income per capita, which is statistically different across the double treatment, the active treatment, and their respective control groups. Since this is the only difference across groups, I am not concerned about baseline differences that would drive the results in this study. Nevertheless, I estimate all regressions controlling for all covariates to reduce even further the potential for bias in our parameters of interest.

5   Empirical Strategy

Though I do not manipulate the research environment, the unique joint implementation of active and passive transparency policies in Brazil is in many ways similar to a natural experiment. Audit treatment is randomly assigned across municipalities between 2006 and 2015, allowing for the experimental evaluation of outcomes across active treatment and control groups. In 2012, the Brazilian FOI law was enacted nationwide, serving as an exogenous shock of passive transparency across municipal governments. Therefore, I can also implement a difference-in-differences strategy comparing outcomes before and after FOI implementation. I call this analysis the *governance* experiment, for which the estimating equation (1) is:

$$y_{i,j} = \alpha + \gamma_1 \cdot audit_{i,j} + \gamma_2 \cdot FOI_{i,j} + \rho \cdot (audit_{i,j} \cdot FOI_{i,j})$$
$$+ \lambda_1 \cdot (audit_{i,j} \cdot FOI_{i,j} \cdot time) + \lambda_2 \cdot time + X\beta + \varepsilon_{i,j} \tag{1}$$

The dependent variable $y_{i,j}$ takes up the performance, development, and sanctions measures for municipality i in year j; $audit$ is a binary variable indicating if municipality i has been audited by year j, and γ_1 is the active treatment effect; FOI is a binary variable indicating if municipality i is under FOI law in year j, and γ_2 is the passive treatment effect; $audit_{i,j} \cdot FOI_{i,j}$ is the interaction

for joint treatment, whose effect is captured by ρ. λ_1, λ_2 summarize interactions of joint treatment and a linear time trend (*time*) controlling for differential treatment trends over time. I estimate models including and excluding the $X\beta$ matrix of municipal characteristics described in section 4; finally, $\varepsilon_{i,j}$ are the unobservable municipal characteristics.

In addition to the governance experiment, I also conduct two additional analyses: the cross-effects of active (passive) transparency on FOI compliance (corruption) outcomes. These are the *information* and *corruption* experiments, which are made possible because of the simultaneous implementation of audits and FOI. In the post-FOI (after 2012) period, some municipalities were also randomly selected for audits; in the audited sample, some municipalities were only audited after 2012, when FOI had already been implemented. Figure 2 displays their visual representation. In the information experiment (figure 2a), the additional treatment is audits; in the corruption experiment (figure 2b), the additional treatment is FOI. Their estimating equations are:

$$FOIcompliance_{i,j} = \alpha + \rho \cdot audit_{i,j} + \lambda_1 \cdot (audit_{i,j} \cdot time) + \lambda_2 \cdot time + X\beta + \varepsilon_{i,j} \qquad (2a)$$

$$corruption_{i,j} = \alpha + \rho \cdot FOI_{i,j} + \lambda_1 \cdot (FOI_{i,j} \cdot time) + \lambda_2 \cdot time + X\beta + \varepsilon_{i,j} \qquad (2b)$$

Where the dependent variables are respectively FOI compliance and corruption outcomes for municipality i in year j. The treatment effects are ρ, which measure the additional impact of active (passive) transparency on a subsample where all observations had already been exposed to passive (active) transparency. This baseline treatment is included in each α intercept. The remaining terms are similar to equation (1), i.e. the interaction of time trends and treatments and the matrix of municipal covariates.[6]

5.1   Constructing the Control Group For the Governance Experiment

Since CGU conducted random evaluations of both transparency programs, it is relatively easy to construct the treated samples in this study. I assign indicator variables for each treatment to all municipalities evaluated by CGU. The municipalities selected for both programs form the joint transparency group, and selection to a single program forms each independent transparency group.

For the main governance experiment, however, I still lack a control group, formed by unaudited municipalities before the implementation of FOI. I thus artificially construct a control group by sampling municipalities from the complement set of treated municipalities. There are 5,568 municipalities in Brazil, out of which 2,930 participated in either transparency program. The complement sampling pool thus has 2,638 municipalities. For a 5 percent minimum detectable effect size, 90 percent power, and two-tail 5 percent significance level, the target sample size is 4,203 units. I require a minimum of 1,273 units for the control group to meet the desired power and detectable effect size. Therefore, I randomly sample 650 municipalities from each of three years of the cross-section for which I can recover all three pre-2012 governance outcomes. This process

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yields a control group of 1,363 unique municipalities (1,950 municipality-year pairs) for a sample of 4,316 unique observations (7,149 municipality-year pairs). This process guarantees randomization both at the sample selection and treatment assignment levels.

6 Results

6.1 Governance Experiment

I first present the results of the governance experiment in table 3. In the top row, I list all three outcomes summarizing governance at the municipal level. For each outcome, I estimate two models, including and excluding municipal controls. All models include time trends and their interactions with treatments. The rows on the left-hand side correspond to each treatment condition in the 2x2 factorial experiment.

There is no uniform effect of joint (active + passive) transparency on all governance outcomes. Though it positively impacts the adoption of an urban development plan (MUDP) in column 1, the inclusion of municipal covariates washes away this effect in column 2. In addition, there is no statistically significant effect of joint transparency on the number of sanctions imposed on public officials across Brazilian municipalities (columns 5 and 6). The most interesting result, however, is the improvement in the municipal human development index (HDI) (columns 3 and 4). Joint transparency increases HDI by 10.7 percentage points in the preferred specification in column 4, which includes municipal covariates. To put this in perspective, such a gain in the country-wide HDI would move Brazil up by 36 positions in the United Nation's HDI (from 72th to 36th place). No other study has investigated the joint effect of transparency on governance outcomes, thus this result is original evidence for claiming a positive relationship for hypothesis H_{AP}.

Next, I investigate the effect of active transparency (audits) on governance. Surprisingly, the only positive effect of active transparency is on MUDP adoption. Municipalities that have been under audit after the implementation of FOI are 15.1 percentage points more likely to adopt a MUDP. In section 3.1, I had posited that the effect of active transparency would be positive on all governance outcomes (H_{A1}). The mechanism behind H_{A1} is the reduction in corruption levels, which would positively contribute to improvement of social outcomes (Ferraz et al. (2012, show a reduction in primary school student's test scores)) and the application of sanctions on public officials (Avis et al., 2018, show an increase in sanctions when Brazilian municipal governments are audited repeated times). Differences in research design and timing might explain the result here: Ferraz et al. (2012) use pre-FOI data only and Avis et al. (2018)

1. paragraph on governance experiment.

   (a) active transparency is only positive in MUDP. Contrary to H_{A1}.

   (b) passive transparency is significant on all. Contrary to H_{P1}.

2. paragraph on compare and contrast with literature.

(a) expected result on performance (less corruption makes urban development better).

(b) passive transparency results are awesome. a surprise improvement in governance.

(c) performance improves as a result of better organization;

(d) sanctions somewhat expected. takes forever to prosecute somebody even in the presence of FOI data.

6.2 Corruption Experiment

1. paragraph on corruption results.

(a) it reduces corruption. Contrary to H_{P2}.

(b) contrast with foi studies who show decreasing corruption and why this is an amazing contribution;

6.3 Information Experiment

1. paragraph on information results.

(a) it almost entirely correlates with FOI compliance. aligns with Contrary to H_{A2}.

(b) huge spill-overs of audits to other areas of government;

(c) but somewhat less important outcome;

(d) there are no similar studies.

6.4 Composition of Transparency Effects Over Time

7 Conclusion

References

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Tables and Figures

Figure 1: Experimental Conditions

	Pre-FOI	Post-FOI
No Audit	Control Group [1,950; 1,363]	Passive Treatment [3,513; 1,816]
Audit	Active Treatment [1,320; 897]	Active + Passive Treatment [366; 217]

Note: The first number in squared brackets is the total number of observations in each group; the second number is the number of unique observations in each group.

## Table 1: Expected Effects of Treatments on Outcomes

Outcomes:	Active + Passive Transparency	Active Transparency	Passive Transparency
1. Performance, Development, Sanctions	? (H_{AP})	+ (H_{A1})	− (H_{P1})
2. FOI compliance		+ (H_{A2})	
3. Corruption			− (H_{P2})

Table 2: Summary Statistics Across Experimental Groups

	Active + Passive Transparency ($n = 217$)			Active Transparency ($n = 897$)			Passive Transparency ($n = 1,816$)		
	Mean	Diff.	*p*-value	Mean	Diff.	*p*-value	Mean	Diff.	*p*-value
Share Urban (Pop.)	.626	−.008	.585	.627	−.005	.743	.636	.005	.771
Share Female (Pop.)	.506	.001	.699	.505	.000	.895	.505	.001	.556
Share Illiterate	.183	.009	.174	.179	.007	.342	.168	−.004	.549
Income Per Capita (ln)	9.044	−.105**	.021	9.052	−.113**	.017	9.167	.002	.960
Gini Coefficient	.508	.000	.986	.512	−.004	.364	.510	−.006	.186
Share Poor (Pop.)	.265	.010	.412	.269	.003	.787	.246	−.020	.138
Presence of AM Radio	.190	−.011	.685	.201	−.009	.750	.212	.002	.945
Presence of Health Council	.787	.012	.667	.760	.032	.274	.760	.032	.299
Presence of Education Council	.958	−.010	.462	.970	−.009	.513	.972	−.007	.630
Seat of Judiciary Branch	.517	.048	.169	.488	.022	.532	.512	.046	.222

Sample Included in Experiment?	Active + Passive Transparency	Active Transparency	Passive Transparency
Governance Experiment	Yes	Yes	Yes
Information Experiment	Yes	-	Yes
Corruption Experiment	Yes	Yes	-

Note: This table displays means for all covariates for observations in each treatment condition (column 1 in each group). Column 2 is the mean difference between observations in the treatment group vs. each control group. For the active and passive transparency intervention, the control group is composed of unaudited municipalities before 2012 ($n = 1,363$); for the active transparency intervention, the control group are unaudited municipalities after 2012 ($n = 1,816$); for the passive transparency intervention, the control group are the audited municipalities before 2012 ($n = 897$). Column 3 displays the *p*-values from *t*-tests performed on these variables across samples.

Figure 2: Information and Corruption sub-experiments

(a) Information Experiment   **(b)** Corruption Experiment
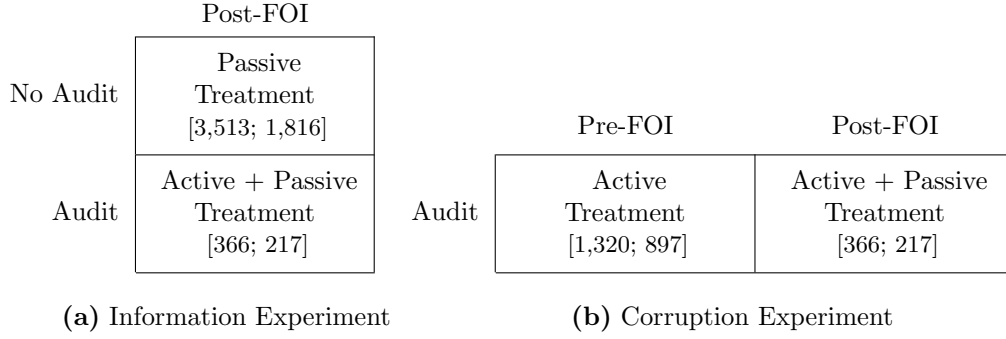
Note: In square brackets, I respectively report the total number of observations (municipality-year pair) and the number of unique municipalities in each group.

Table 3: The Effect of Transparency Policies on Governance

	MUDP Adoption		Municipal Human Development Index (HDI)		Sanctions Imposed	
	(1)	(2)	(3)	(4)	(5)	(6)
Active + Passive Transparency	.419*	.323	.093*	.107***	−.121	−.133
	(.241)	(.246)	(.048)	(.033)	(.103)	(.119)
Active Transparency	.130***	.151***	−.044***	−.009	−.015	−.017
	(.033)	(.036)	(.009)	(.006)	(.012)	(.017)
Passive Transparency	.143	.207**	.073***	.037***	.278***	.285***
	(.141)	(.091)	(.028)	(.013)	(.068)	(.078)
Time Trend Interactions	Yes	Yes	Yes	Yes	Yes	Yes
Municipal Controls	-	Yes	-	Yes	-	Yes
Observations	7,149	7,149	7,149	7,149	7,149	7,149
F-stat	44.9***	156.3***	107.2***	1037.6***	7.5***	29.1***

Note: The regressions here estimate the effect of each transparency condition on three municipal outcomes: whether the administration adopts an urban development plan, their human development score, and whether the mayor or anyone in their team has been sanctioned by law enforcement authorities. Columns 1, 3, and 5 estimate the models without covariates. Columns 2, 4, and 6 include municipal covariates and time trends interactions to control for observable differences across municipalities that could simultaneously explain the outcomes. All standard errors are clustered at the municipality level. A municipality could have been audited or sampled to form the artificial control group more than once, thus the sample size (7,149) is larger than the number of unique municipalities in the study (4,316). *p<0.1; **p<0.05; ***p<0.01.

Table 4: The Effect of Passive Transparency on Corruption

	Acts of Mismanagement (ln)		Acts of Corruption (ln)		Number of Irregularities (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)
Passive Transparency	.114	.104	−.228***	−.223***	−.218***	−.215***
	(.092)	(.116)	(.058)	(.062)	(.054)	(.060)
Time Trend Interactions	Yes	Yes	Yes	Yes	Yes	Yes
Municipal Controls	-	Yes	-	Yes	-	Yes
Observations	1,686	1,686	1,686	1,686	1,686	1,686
F-stat	38.7***	10.5***	10.1***	43.1***	8.7***	36.4***

Note: The regressions here estimate the effect of passive transparency (FOI laws implemented across Brazil) on three corruption outcomes: whether the municipal administration has mismanage public funds, engaged in corruption, and the number of violations to sound spending according to federal law. Columns 1, 3, and 5 estimate the models without covariates. Columns 2, 4, and 6 include municipal covariates and time trends interactions to control for observable differences across municipalities that could simultaneously explain the outcomes. All standard errors are clustered at the municipality level. A municipality could have been audited more than once, thus the sample size (1,686) is larger than the number of unique municipalities in the study (1,114). *p<0.1; **p<0.05; ***p<0.01.

Table 5: The Effect of Active Transparency on Information

	FOI Request (time)		FOI Request (accuracy)	
	(1)	(2)	(3)	(4)
Active Transparency	.943***	.963***	1.100***	1.117***
	(.146)	(.150)	(.146)	(.151)
Time Trend Interactions	Yes	Yes	Yes	Yes
Municipal Controls	-	Yes	-	Yes
Observations	3,879	3,879	3,879	3,879
F-stat	45.0***	47.5***	55.1***	47.5***

Note: The regressions here estimate the effect of active transparency (random audits of public spending) on two FOI outcomes: the probability of the municipal administration responding to FOI requests in timely and accurately manner. Columns 1 and 3 estimate the models without covariates. Columns 2 and 4 include municipal covariates and time trend interactions to control for observable differences across municipalities that could simultaneously explain the outcomes. All standard errors are clustered at the municipality level. The information outcomes were collected in three waves, for the same municipalities, so the sample size (3,879) is larger than the number of unique municipalities in the study (2,033). *p<0.1; **p<0.05; ***p<0.01.
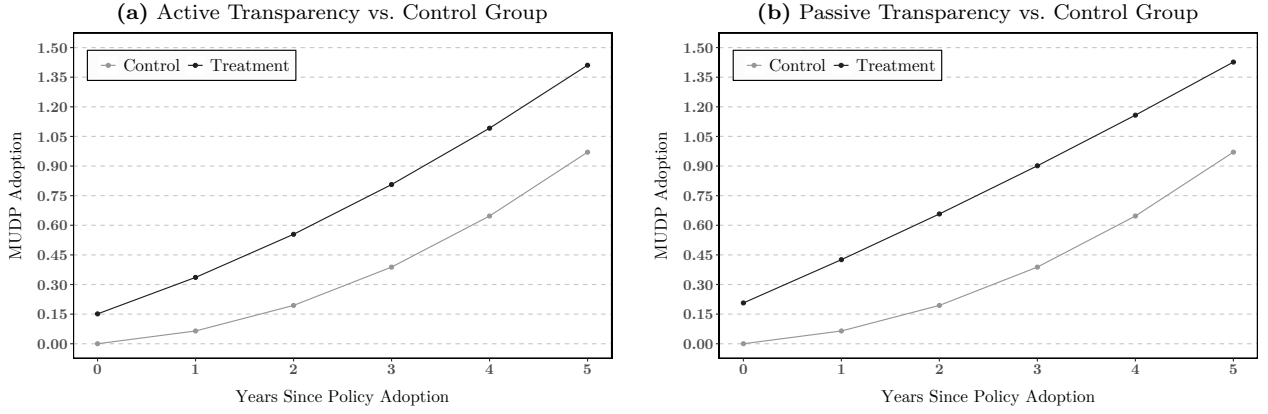
Figure 3: Performance Improvement Trends

(a) Active Transparency vs. Control Group

(b) Passive Transparency vs. Control Group

Figure 4: Development Improvement Trends

(a) Double Transparency vs. Control Group
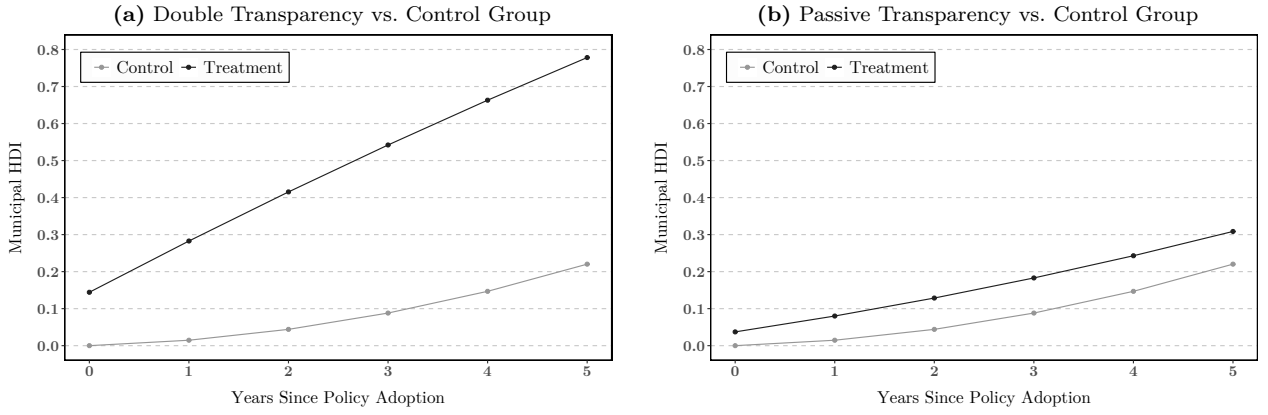
(b) Passive Transparency vs. Control Group

Figure 5: Corruption and Information Improvement Trends

Corruption Experiment:
(a) Passive Transparency vs. Control Group

Information Experiment:
(b) Active Transparency vs. Control Group

16