

Land Grants in Colonial Brazil and Long-Term Effects on Development

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Abstract

Land access in Brazil has been a key political issue for the past century. The concentration of land in large estates that are often unproductive is argued to be a factor in the low social mobility and inequality of the rural population. However, restricted land access in Brazil has its roots in colonial times. Large plots of land were granted from 1530-1822 through land grants called *sesmarias*. These land grants were often given to people with substantial financial means, restricting land access to most of the population. I contribute to the understanding of colonial land tenure in Brazil by collecting a novel dataset on the location of these land grants alongside a matching procedure. Preliminary results indicate that the land grants had persistent effects on land concentration, tenure, and usage until the 20th century.

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1. Introduction

“In the *sesmarialismo*, thus, is the base to all of [Brazil’s] land evolution .”

- O Sistema Sesmarial no Brasil, Costa Porto (1979, p. 25)

Brazil has one of the highest levels of land inequality in the world, with “an estimated 1% of the population own[ing] 45% of all land” (USAID, 2016). This issue is compounded by the fact that large agricultural lands in Brazil are often unproductive, with the Brazilian agrarian reform agency indicating that in 2010 “72% of all land occupied by large holdings was considered unproductive” (Carlson, 2019). The combination of land concentration and low levels of utilization are spread through the economy as it depresses rural wages, keeping those people away from the consumer markets (Oliveira Andrade, 1980, p. 1). However, land inequality is something that has existed in Brazil ever since its colonization, as most of the more suitable land had been taken in large estates that were not intensely cultivated (Mueller, 1995, p. 53).

[This added to the lack of sharecropping or wage labor].

This paper analyzes the historical colonial causes of land inequality in Brazil, by exploiting geographical and economic variation in the request for land grants, called *sesmarias*. These land grants were often given to people with direct financial means, and were large in size.

I exploit the geographical, time, and economic variation of the grants to study their persistent effect in the economic development of

I first describe how the grants themselves were distributed and describe the process of learning that ...

I use a matching algorithm to show that the land grants in Brazil are associated with... . These effects are seen in 1872 and have persisted up to ...

I then turn to understand what are the mechanisms that are driving the results.

Given the prominence of land grants in colonial Brazil and the variation on why the land was granted, this paper studies the long-term effects of the role of colonial land assignment in long-term development. The paper provides a novel georeferenced dataset of colonial grants in Brazil. First, there are no empirical papers studying the direct causes of colonial land distribution in Brazil. Previous literature has found negative long-term effects of colonial land usage in Africa and South America (Dell, 2010; Lowes et al., 2021). However, there exists evidence that not all land regimes led to negative effects and instead led to economic development, with examples in India and Indonesia (Banerjee et al., 2005; Dell and Olken, 2019; Ratnoo, 2023). Other studies have analyzed the effect of land grants in the United States (Akee et al., 2014; Allen, 2019; C. Smith, 2023)

This paper also contributes to the understanding of the historical economic development of Brazil by

trying to explain the diverging paths in development in each region. The land regime and size in each region, as measured by the land grants could have differential impacts on development. [Wigton-Jones \(2020\)](#) studies the effects of 1920 agricultural census land inequality and how it still has persisted to the present. The literature has analyzed how different economic cycles and how immigration have led to differential educational outcomes in Brazil ([Musacchio et al., 2014](#); [Rocha et al., 2017](#)). Related literature has also analyzed the effect of the Spanish-Portuguese borders in South America, the role of sugarcane, and gold mining in Brazil ([Laudares et al., 2022](#); [Naritomi et al., 2012](#)).

[\(Dell, 2010\)](#) [\(Sokoloff et al., 2000\)](#)

[Ratnoo \(2023\)](#) [Paper about land tenure in India]

[Albertus et al. \(2018\)](#)

Lastly, this paper contributes by providing a novel georeferenced dataset describing historical colonial land grants in Brazil. Other papers such as [...] have studied and georeferenced datasets that study the effects in the United States, however, that data is lacking for Brazil. While, currently, the dataset does not have full coverage in all the states, it does contain most of the coastal states that were first colonized and are the most likely to have any effects of colonial land distribution.

2. Historical Background

2.1. Land Grant Implementation in Brazil

Portuguese presence in Brazil began in 1500, when [...].

Something about the capitaniias here [...]

Quote about how the captains had to give land grants.

Implementation in the following years.

Portugal tried to implement in Brazil a similar system of land distribution they had successfully done in the Azores and in Portugal. According to [T. L. Smith \(1944\)](#) the only way Portugal knew how to distribute the lands in Brazil, were through the large *sesmarias*. However, while the legislation for granting the land was the same two main issues differentiated on how they were applied in Portugal and Brazil. Portugal, as a smaller state, the *sesmarias* led to small properties. Meanwhile, in Brazil, by the need of colonization and the large area of the country, the implementation of the *sesmaria* system led to the creation of the large estates than the ones seen in portugal ([Costa Porto, 1979](#), p. 58-59; [Diffie, 1987](#), p. 28; [Panini, 1990](#), p. 23-24).

While technically anyone could apply to get a land grant, the requirement to develop the land often led

to people of great wealth to apply. In practice, that led to the applications being done only by a select few, those that had the money or political connections (Diffie, 1987, p 434) In the letter descriptions, the applicants would boast about their wealth and connections in order to be able to get a grant (Lima, 1954, p. 36). Those applicants that had the financial means to get a land grant would often get large estates, “customarily one to three leagues in extent (16.7 to 50.1 square miles)” (Dean, 1971). Lima (1954, p. 36) indicates how those people would become the “future sugar engine owners and farmers that would create the economic aristocracy of the colonial society”.¹ Further, those who did not have the means to get a land grant, would often be marginalized at the colonial society (Simonsen, 2005). Contemporary evidence from the French botanist Augustin Saint-Hilaire, describes how “the poor that couldn’t have titles, establish themselves in land that they don’t know if it is owned; they plant, build small houses, raise chickens, and when the least expected, a rich man appears with a title, expels them and enjoys the fruits of their labor” (Costa Porto, 1979, p. 143).²

(Carlson, 2019) “For many Latin American scholars seeking to explain their region’s backwardness in the first half of the twentieth century, the prevalence of latifundio-dominated agrarian structures was key. The latifundio was seen as a fundamental impediment to economic development due to its feudal-like social relations, its tendency for monocropping, and its negative impact on the formation of domestic markets. However, it was these scholars’ emphasis on the labor regimes that were characteristic of the latifundio that prevented them from fully grasping the nature of the problem.”

(Carlson, 2019) “Going back to colonial times, land in Latin America has often been acquired outside of market mechanisms. This typically occurred through massive land grants from the crown such as the merced, or the sesmaria in Brazil, or, after independence, through free or low-cost land concessions from national or local governments (Furtado 2003, 68–80).”

(Carlson, 2019) “Not only do extensive activities predominate, but land use statistics reveal the low-investment and low-productivity nature of these types of production. On grazing land, for example, if we divide the total number of animals on large farms by total hectares of pasture, Brazil’s large farms have only 0.65 animals per hectare of grazing land, while in Peru it is an incredibly low 0.06 animals per hectare (IBGE 2012; INEI 2012).”

3

¹ Additionally, Lima (1954, p. 47) states that the “The *sesmaria* is the large estate, inaccessible to the farmer without resources.”

² More evidence from the issues of squatting is further described in the letter by two grantees em 1702, who requested land alongside a river but claims people were living there without a *sesmaria* grant (Costa Porto, 1979, p. 142). In the interior of the Northeast when land was full of squatters or bandits they would often grant them away (Poppino, 1968, p. 88).

³ Some municipalities were directly created and first settled because of the land grants. For example, the municipality of Taipu in the state of Rio Grande do Norte is described as being “first settled because of a land grant in 1608”. In total 17 grants were given in this municipality, being a primary cause of its creation. More information is available at <https://www.taipu.rn.leg.br/a-cidade/>.

(Carlson, 2019) “As Edelman (1992, 22) explains: “the important point is that the dynamics of accumulation are radically different than those of classical capitalist development. Rather than investing heavily in improved technologies, employing productive human labor, attempting to capture increased market shares, or developing linkages with other production processes, latifundistas could become wealthy from harvesting natural and quasi-natural products of the land.””

Diégues Júnior (1959)

Oliveira Andrade (1980, p. 113) “Extensive cattle raising, with open grazing, did not require much attention or labor. For that reason, the number of slaves in the region was small”

Oliveira Andrade (1980, p. 119) “[The cotton] advantage was a stimulus to the large landowners of the region, since they could increase their profits without modifying their traditional economic activities, and without forsaking cattle raising. Even today one can see that in the Agreste and Sertao cattle raising is the economic activity most associated with the latifundia. The large landowners are always principally cattle raisers and only secondarily farmers. This pattern is broken in the wet areas where climatic conditions are less favorable to cattle raising and where land is almost always in small holdings”

This paper describes the history of land usage in Brazil and discusses the roles of the sesmarias in it (Reydon et al., 2015).

Oliveira Andrade (1980, p. 157) “Cattle raising is today, as in the past, the source of great wealth in the Sertao [...] The system of cattle raising on the large fazendas of the Sertao has changed little in recent years”

“The slaves in Brazil were at least partially integrated into society and possessed rights, quite a legal contrast to the plight of the slaves in the United States. Hence their transition from slave to freedman was facilitated. One paramount privilege the slaves enjoyed was their ability to purchase their own freedom. Blacks, taking advantage of the many Catholic holidays to work on their own, saved money for that purpose. They occasionally formed their own mutual aid societies to facilitate their purchase of freedom.”

2.2. End of the Land Grants and the 1850 Land Act

Land concentration in Brazil in the brink of Brazil’s independence in 1822, was high as a result from the land grants throughout its colonial period (T. L. Smith, 1972). Contemporaries describe that a key issue of the sesmaria system was a lot of the land had already been given which led to a lot of poor families which were not able to claim land (Lima, 1954, p. 42-43)

Between 1822 and 1850 there was no clear way on how to obtain lands in Brazil.

1850 Land Law allowed [...]

The first big land reform was in 1964 with the Land Act.

1985 National Agrarian Reform Plan was used.

Land grants were given until 1822, shortly before Brazil's independence.

<https://atlas.fgv.br/marcos/caminhos-do-gado/mapas/o-nordeste-da-cana-e-do-gado-no-século-17> [IV?]

<https://atlas.fgv.br/marcos/movimentos-e-conflitos-sociais/mapas/o-sertão-dos-cangaceiros-1877-1940> [Something About Historical Conflict]

Dutch Brazil ? ”dois fatores contribuíram para a penetração do gado para o interior nordestino. O primeiro reside na necessidade de abastecer as áreas açucareiras do litoral com animais para o transporte e de carne para as populações urbanas. O segundo fator foi a presença dos holandeses no século XVII levando os criadores a sair do litoral em direção ao interior devido o temor de perder seus alimentos para os invasores que os requisitavam. Ao fazer isso, os criadores passaram a se estabelecerem em extensões de terra doadas em sesmarias. Um outro fator que também não podemos esquecer é que nesse momento a economia voltava-se para a expansão da empresa comercial canavieira a ponto de a “Carta Régia” de 1701 chegar a proibir a criação de gado até dez léguas da costa”

“Além deste fator, o autor explicita um condicionante geográfico para a existência desses mercados, pois, as maiores feiras de gado existentes na região se localizam nas cidades que estão exatamente no contato entre o litoral e o sertão.” ([Galdino Dantas, 2008](#))

“A cana-de-açúcar foi plantada, de início, nas sesmarias e grandes propriedades doadas de 500 braças, até 50 e 200 léguas. Nos séculos XVI e XVII, com os altos preços alcançados pelo açúcar, verificou-se uma reação da pequena propriedade, de exploração agrícola limitada, que, entretanto, foi logo absorvida pelos latifúndios. Nos princípios do século XIX, o panorama da região açucareira apresenta-se diferente, com o regime da média propriedade, resultante do parcelamento dos latifúndios, doados pelo excesso de terras devolutas, pela escassez de colonizadores ou pela repartição entre os herdeiros. Foi a época em que os engenhos não possuíam mais do que léguas e meia ou duas léguas .” ([Geografía, 1970](#), p. 118)

“Nos sertões da Bahia, Pernambuco, Paraíba, Rio Grande do Norte, Ceará, Piauí, as primeiras estradas foram os caminhos das boiadas. Assim é que numerosas povoações - núcleos de futuras vilas e cidades - estabeleceram-15e às margens dos rios, nos lugares onde estes ofereciam passagem mais fácil aos anjinhos, e à beira dos caminhos, nos pontos em que as boiadas paravam para descansar.” ([Geografía, 1970](#), p. 164)

([Panini, 1990](#))

Maybe can combine the São Paulo ones with the immigration that happened there and contrast with data from ([Rocha et al., 2017](#)).

2.3. Present Day System

Oliveira Andrade (1980, p. 1) “The agrarian problem is one of the most serious the country has, because of the great concentration of land ownership and the low level of utilization by the large and medium property owners. A majority of the rural population receives very low wages, which practically puts them outside the consumer market”

While a lot has changed about access to land, and land redistribution throughout the past century some of the effects can be traced to colonial times. Oliveira Andrade (1980, p. 36) states how in the Northeast “The concentration of landholdings [...] is a consequence of the essentially commercial character of agriculture there. This character has manifested itself since the start of colonization”.

Oliveira Andrade (1980, p. 34-35) argues that “one of the causes that most aggravate the problem [the considerable increase in population, without a corresponding increase in possibilities for employment, is much more a swelling than an orderly growth] is the system of land tenure, dominant since colonization. It tends to contribute to the concentration of property and the lack of guarantees, of written and respected contracts, that would give greater stability to the sharecroppers in the Agreste and the Sertao and to the agricultural workers in the Zona da Mata.”

Andrade (1980, p. 18) describes the actual system of land ownership in Brazil as “continuation of the colonial system, with the *sesmaria* becoming the [large private estates]”

Baer (2014, p. 16) describes largely negative effects of the sugar economy, especially in the Northeast, which led to the concentration of wealth and economic backwardness of the region.

Some of the same issues of large estates and poor utilization of land persist to the present. Carlson (2019) based on INCRA data indicates how even up to 2010 “more than 50 percent of all large landholdings and 72 percent of all land occupied by large holdings was considered ‘unproductive’ according to agency parameters”.

3. Data

3.1. Land Grant Dataset

Given the nature of the grant application, and the requirement of a letter to be sent to the governor and approved, a vast number of the letters were stored in archives throughout Brazil.

The main source of historical data comes from both a collaboration with the *Sesmarias of the Luso-Brazilian Empire Database* and my own work.⁴ The database uses archival data from state records, original

⁴Information on the content of the letters is available at <http://plataformasilb.cchla.ufrn.br/>. The georeferencing

manuscripts, or other historical data sources to obtain information on the historical concession of land grants in Brazil.⁵

When available in the text, information such as the year, the reason for the request, etc. are coded. The sesmarias are then georeferenced based on the geographical information present in the text, allowing us to trace them approximately to a geographical point measured as a latitude and longitude coordinate.^{6,7} [Figure 2](#) shows the geographical distribution of the land grants across the states from which I gathered information.

3.2. Other Sources

The main outcome economic variables come from a variety of different sources. To study the effects of the grants at an earlier period, I use the 1872 Brazilian Imperial census, which happened only 50 years after the formal ban of land grants in Brazil. Census data for 1872 is obtained from the Nucleus of Research in Economic and Geographic History from the Federal University of Minas Gerais.⁸ The 1872 Imperial Census contains demographic data at the municipality and parish level and was the last census taken before the abolition of slavery in Brazil. Additional work was done to get a novel database at a finer geographical level for the 1872 census. At that time, the lowest geographical unit at which the census was taken was at the parish level and each municipality included at least one parish. I then georeference the parishes, allowing me to study the effects with the 1872 census at a smaller geographical unit allowing for better precision of the estimates.^{9,10}. [Figure A.7](#) shows the geographical distribution of the parishes alongside their municipality boundaries.

To study the persistence of these effects I use data from other censuses from 1970-2010 are obtained from the IBGE ().¹¹

To study the effect of land usage and tenure I combine satellite data alongside Brazilian Agricultural Censuses. Land usage from 1985-2010 is obtained from Mapbiomas ([Souza et al., 2020](#))¹². Data for current land tenure in 2021 in Brazil is obtained from [Sparovek et al. \(2019\)](#).¹³. Data for the 1920 Agricultural

process was done in collaboration but as a separate project for this paper.

⁵An example of an original manuscript can be found in [Figure A.2](#), while an example of a transcribed manuscript published by the state archives is available at [Figure A.1](#).

⁶A more in-depth description on how the sources of the letters and how the sesmarias were georeferenced is available in [Appendix D](#)

⁷More information on the sources used for this project is available in [Appendix C](#).

⁸Available at <http://www.nphed.cedeplar.ufmg.br/>

⁹Distribution of the 1872 parishes alongside the municipality boundaries is available at [Figure A.7](#). For the sample used, I have 469 municipalities and 1,115 parishes. Information on how the parishes were georeferenced is available at [Appendix E](#)

¹⁰More information on the construction of the variables based on the 1872 census data is available on [Appendix G](#)

¹¹Microcensus is available through the IBGE but the data downloaded through the R package *censobr* from [Pereira and Barbosa \(2023\)](#)

¹²Available at <https://brasil.mapbiomas.org/en/>

¹³Available at <https://atlasagropecuario.imaflora.org/>

Census is originally from the IBGE.¹⁴

In addition, I obtain geographical characteristics and shapefiles at the municipality level from a variety of sources. Shapefiles for the coast of Brazil, municipality seats, and municipality boundaries from 1872-2010 are obtained from IBGE through Pereira and Goncalves (2023). Information on the slope comes from the European Environment Agency¹⁵, and elevation comes from Amatulli et al. (2018). Data on the maximum amount of calories based on pre-Columbian and post-Columbian crops are obtained from Galor and Özak (2016). Soil types in Brazil is obtained from EMBRAPA (Brazilian Agricultural Research Corporation). Terrain ruggedness comes from Nunn et al. (2012). Rivers and streams [...].¹⁶

Land conflict in Brazil comes from the CPT (Comissao Pastoral das Terras) from the years of 2014-2018.^{17,18}

(Klein Goldewijk et al., 2017)

4. Descriptive

4.1. Summary Statistics

Summary statistics for the 1872 censuses are available in Table 1. Overall, we can see that municipalities farther from the coast

5. Historical Selection of the Land Grants Location

5.1. Geographical Information on the Land Grants

[add here summary statistics of the land grants]

Following Lowes et al. (2021) I show balance on geographical characteristics at the 0.5 x 0.5 (55 x 55km) grid level in [reference to table here]. [add here summary statistics at the grid level]. Overall, some patterns seem to emerge When comparing

5.2. Challenges to Identification

Given the descriptives of the previous subsection, we see that the land grants were mainly located in [...]. The main concerns about the estimates deal with the endogeneity of the location of the grants.

¹⁴I would like to thank XXX for sharing this data with me.

¹⁵Available at <https://www.eea.europa.eu/data-and-maps/data/world-digital-elevation-model-etopo5>

¹⁶<https://metadados.snirh.gov.br/geonetwork/srv/api/records/a01764d3-4742-4f7d-b867-01bf544dde6d>

¹⁷Annual reports from 2015-2022 are available to download at .

¹⁸Geographical distribution of the conflicts on the selected states is Figure A.4.

6. Methodology

[probably cite ([Rocha et al., 2017](#)) and compare what he does to us.]

[Can also try the Piabiru for SP ([Barsanetti, 2021](#))]

[Or, indigenous tribes ([Barsanetti and Ferreira, 2023](#))] -*i*. Also has a very good way of explaining the threats to identification and how I'm dealing with them.

6.1. Matching

To study the effects of the land grants I use a propensity score matching procedure to select control municipalities that are similar in geographical characteristics to those that received at least one land grant. In the first step, I estimate the following:

$$LandGrant_m = X_{m,s} + \mu_s + \epsilon_{m,s} \quad (1)$$

The set of variables used to match are: latitude, longitude, mean elevation, mean slope, soil quality for food crops ([Galor and Özak, 2016](#)), potential sugarcane output from the FAO, and the distance to the coast.¹⁹ These variables are selected because they are proxies for agricultural output, geographical location, market access, and the main export of Brazil during the colonial times which was sugarcane. For each treated municipality I select one untreated municipality to be its control, which generates the matched sample.

For the matched sample I then estimate the following equation:

$$Y_{m,s} = LandGrant_m + X_{m,s} + \mu_s + \epsilon_{m,s} \quad (2)$$

The assumption for the matched sample is that conditional on the set of controls, the municipalities that received a land grant are as good as random since the control municipalities had similar geographical characteristics.

The results are found in tables X, Y, and Z. In each Panel, I consider whether the given municipality had any land grants, a land grant pre-1700 and a land grant only post-1700. The 1700 cutoff is chosen due to two historical factors: First, in 1698 it was imposed a limit on the size of the grants to be 3x1 leagues maximum [add citation here]. Additionally, in 1701 there was a ban on livestock grazing within 80km of the coast. The 1700 cutoff, therefore, chooses the combination of the two. Ideally, we would expect that the effects on land usage would change in favor to [add here] and [blah blah blah].

¹⁹In Appendix ? I show that the results are robust to a different set of control variable.

For the states in the Northeast, the results are available in ??

When exploring the heterogeneity by the economic activity of the request, we see that in [Table 4](#).

[Can do what ([Rocha et al., 2017](#)) did and create a pseudo-panel for variables that can be traced in time]

6.2. Bandeirantes Exploration

“Owing in large measure to the intrepid Paulistas of the seventeenth century, the menace of Indian attacks from the interior was largely eliminated, and the lands themselves were appropriated in extremely large tracts for the purposes of cattle raising” ([T. L. Smith, 1972](#), p. 320). [Figure 4](#) shows the geographical expansion of the Bandeiras, as they expanded from São Paulo, Minas Gerais, and Bahia.

Combine that with the ([Barsanetti and Ferreira, 2023](#)) paper on where

Lima ([1954](#), p. 44) indicates that at the time of independence, Gonçalves Chaves reported that [...]

First, I test whether or not we observe in the data the expansion of the land grants after the Bandeirantes exploration. Results can be found on ...

For this analysis, I select only the states of São Paulo and Minas Gerais the states which had Bandeirantes explorations.²⁰

The first-stage equation:

$$LandGrant_{m,s} = \delta \cdot ExplorersDist_{m,s} + X_{m,s} + \mu_s + \epsilon_{m,s} \quad (3)$$

The second-stage would be as follows:

$$Y_{m,s} = \beta \cdot \widehat{LandGrant}_{m,s} + X_{m,s} + \mu_s + \epsilon_{m,s} \quad (4)$$

6.3. Dutch Brazil

6.4. Coastal Ban on Livestock

In 1701, the Portuguese Crown enacted a ban on cattle ranching from 80km of the coast (10 leagues) ([Fausto et al., 2014](#), p .40; [Simonsen, 2005](#), p .198; [Bethell, 1984](#), p .460). The law went into effect after complaints from local farmers that cattle grazing was destroying the sugar plantations in the area. In effect that led to reserving the coast to be primarily an agricultural area and allowing the expansion of cattle towards the interiors of Brazil ([Júnior, 1967](#), p. 216). That led to “a clear specialization between the two

²⁰The focus of this section is on the Bandeiras Paulistas, which radiated from São Paulo. Expansion to the West on the other states was due to other factors, unlike the selected states in the Southeast in which Bandeirantes were looking for gold towards the center of Brazil.

activities” ([Ribeiro, 2012](#)).²¹

Historically, the size of landholdings in the interior of Brazil at this time was extensive. As Fausto et al. ([2014](#), p .41) indicates, the need for large lands to allow cattle to roam free led to the creation of large estates in the area, even bigger than those compared to the coast.²² Even with restrictions on the sizes of the land grants taking into effect in 1698, due to the lack of government oversight the “sesmarias on which cattle ranches were established sometimes exceeded hundreds of thousands of acres” ([Bethell, 1984](#)).

([Carlson, 2019](#)) “Extensive activities like cattle grazing continued to operate largely as before, as Bicalho and Hoefle (1990, 57) explain for northeast Brazil: “While the new system of cattle raising uses such technical innovations as planted pasture, pasture divisions with rotation of use, purchased animal feed, improved breeds and the greater use of vaccines, which together with the use of waged labour, satisfy the most demanding definitions of capitalized agriculture, the productivity per hectare has not increased significantly. Mere pseudo-modernisation has occurred. The ranches have all the trappings of being highly productive but the pastures only have one or two steers per hectare.””

([Boxer, 1962](#), p .)

“Cattle farming was to supply dry beef, leather, and carrying animals to the sugar mills and, later, to the villas that emerged around mining, but was not to mix itself geographically with these other two important export activities from the colonial period, nor with the coffee estates that emerged during the nineteenth century, when Brazil was already independent from Portugal.” ([Ribeiro, 2012](#)).

“It was there that farms measuring thousands of hectares emerged, where cattle found favourable environmental conditions for the multiplication of herds.” ([Ribeiro, 2012](#)).

Given the nature of this ban, I exploit the cutoff of 80 km to use a regression discontinuity design to measure the economic effects of this ban.

First, I provide evidence that [...] In the first-stage I check whether post-1701 we see an increasing number of land grants dedicated to livestock in municipalities farther than 80 km from the coast.

[Have to think this as an ITT, same with part of the land grants.]

Secondly, using the 1872 I analyze whether or not there were any effects of the coastal livestock ban on the demographics and economic activities at that time.

²³

[Mueller \(1995\)](#)

²¹An example of the effect can be seen in the Municipality of Ruy Barbosa and the state of Bahia and Caico in the state of Rio Grande do Norte. Both are described as being created by the cattle expansion that happened because of the 1701 Royal Decree. ([IBGE n.d.](#))

²²An example of this would be the d’Avila family which owned a large estate in the state of Bahia [...]

²³While this setting would be ideal for a Regression Discontinuity Design, the lack of sample size, especially for the early 1872 census results in noisier estimates. Estimations based on it can be found in Appendix ???

"Sesmarias remained the only way through which the Crown granted land apart from the tolerance of squatting"

"In Brazil land was abundant and did not represent a constraint for the production of sugar Any individual who possessed the capital and slaves to establish a sugar mill could readily obtain a sesmaria in which to do so In fact, in many instances it became necessary to have the means to establish a sugar mill in order to be granted a sesmaria"

"By squatting the settler risked being expelled as the frontier advanced, yet this was often far in the future Furthermore, increasingly through time, there was the possibility that through occupation and cultivation of the land the settler could acquire property rights, either through informal recognition of those rights or through the ex-post granting of a sesmaria"

Historically livestock-raising areas were [...]

With the standard errors being clustered at the municipality level.

Provision of Public goods is the cause for the effects on literacy in 1970 and onwards (?).

Other links:

http://historialuso.an.gov.br/index.php?option=com_content&view=article&id=6191:escravos-de-ganho&catid=2073&Itemid=121

<https://www.nexojornal.com.br/especial/2017/07/07/censo-de-1872-o-retrato-do-brasil-da-escravidao>

"Quando o senhor não tinha uma função para o escravo, ele deixava o escravo ao ganho", explica o historiador Diego Bissigo. "Ele ia para cidade buscar emprego e o senhor ficava com o salário que o escravo recebesse. É uma forma de uso para o escravo. Assim, ou alugando para outro senhor também."

"O termo jornaleiro, refere-se geralmente, a um trabalhador que trabalha à "jorna". Isto é, era contratado para trabalhos de pequena duração temporal, geralmente agrícolas, (vindimas, colheitas, poda...) e como tal, pago ao dia (jornada?)."

"Criado de servir era um termo mais aplicado aos empregados que trabalhavam na Casa ou em serviços mais ligados à Casa (Jardim, cavalos, recados, etc.) ."

(Oliveira Andrade, 1980, p. 142)

Or maybe, following Barsanetti (2021) do a differences-in-differences estimator where there are two sources of geographical variation: the 1701 law and where the grants themselves are located. Therefore, the estimating equation is as follows:

$$Y_{m,s} = \beta \cdot (Grant_m * More80km_m) + \beta \cdot (Grant_m * Less80km_m) + \delta \cdot Less80km_m + X_m + \mu_s + \epsilon_{m,s} \quad (5)$$

6.5. Comparison against Settlement Municipalities in Sao Paulo

Based on [Rocha et al. \(2017\)](#) I define municipalities that received a state-sponsored settlement. I estimate the following equation:

$$Y_m = \beta^g \cdot LandGrant_m + \beta^s \cdot Settlement_m + \beta_3 \cdot (LandGrant_m * Settlement_m) + X_m + \epsilon_m \quad (6)$$

6.6. Treaty of Tordesillas

In [Figure 5](#), I show the treaty line alongside the land grants in the states of Sao Paulo and Minas Gerais.²⁴

6.7. Other

7. Results

7.1. Land Inequality

7.2. Land Conflicts

7.3. Land Usage

8. Mechanisms

8.1. Human Capital Accumulation

Following [Galor, Moav, et al. \(2009\)](#) I test whether there are associated effects of land concentration on education and human capital accumulation [Something to test].

9. Heterogeneity

9.1. Regional Variation

The effects between the Northeast and Southeast of Brazil [...]

“Facil, assim, compreender por que houve tanto latifundio, sobretudo no Nordeste: areas imensas dadas de sesmaria ao mesmo morador” ([Costa Porto, 1979](#), p. 53)

²⁴Those states are selected, since out of my sample they are the only ones that have municipalities on both sides of the line.

In Table [...] I show that for the 1985 Agricultural census in the Northeast municipalities, the presence of a land grant is associated with an increase in [...]

In Table [...] the effects for the Southeastern states of Sao Paulo and Minas Gerais are [...]
(Mueller, 1995)

9.2. Economic Activity

10. Robustness

In this section explore the heterogeneity of the economic activity.

10.1. Coefficient Bounds

I use the methodology from to estimate how much unobservables could be impacting the main estimates Masten et al. (2022).

10.2. Randomization Inference

11. Conclusion

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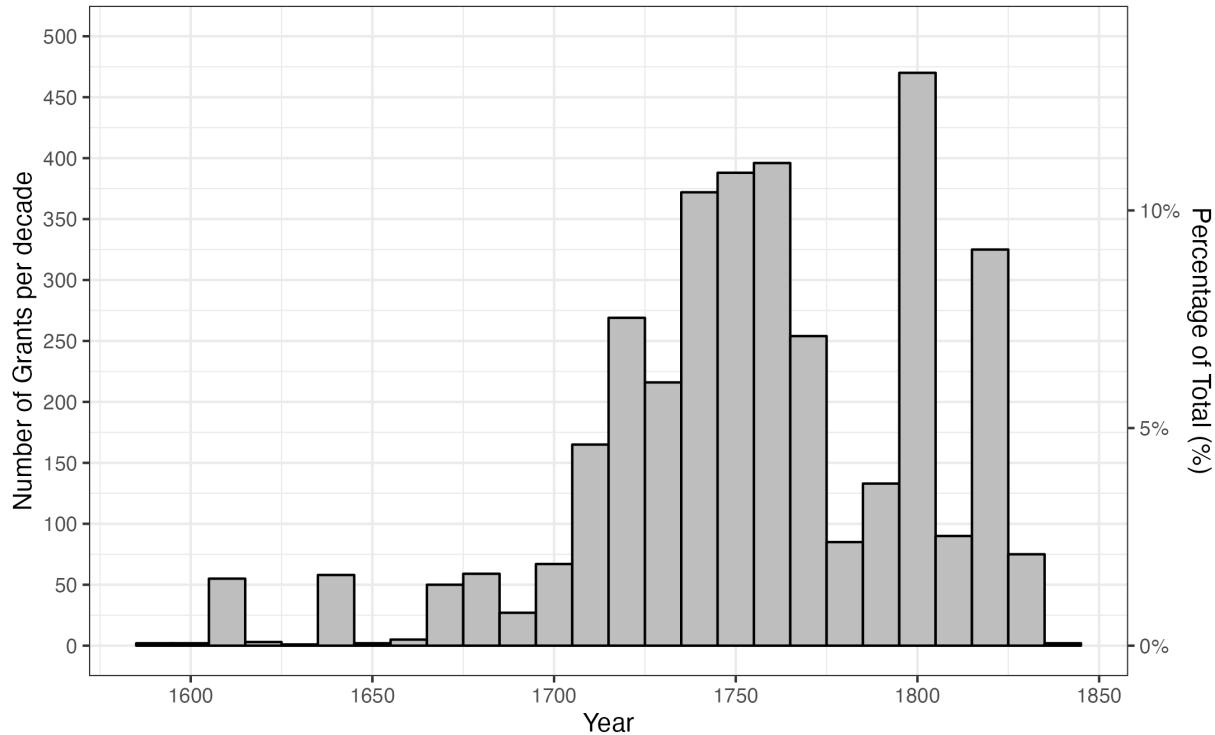
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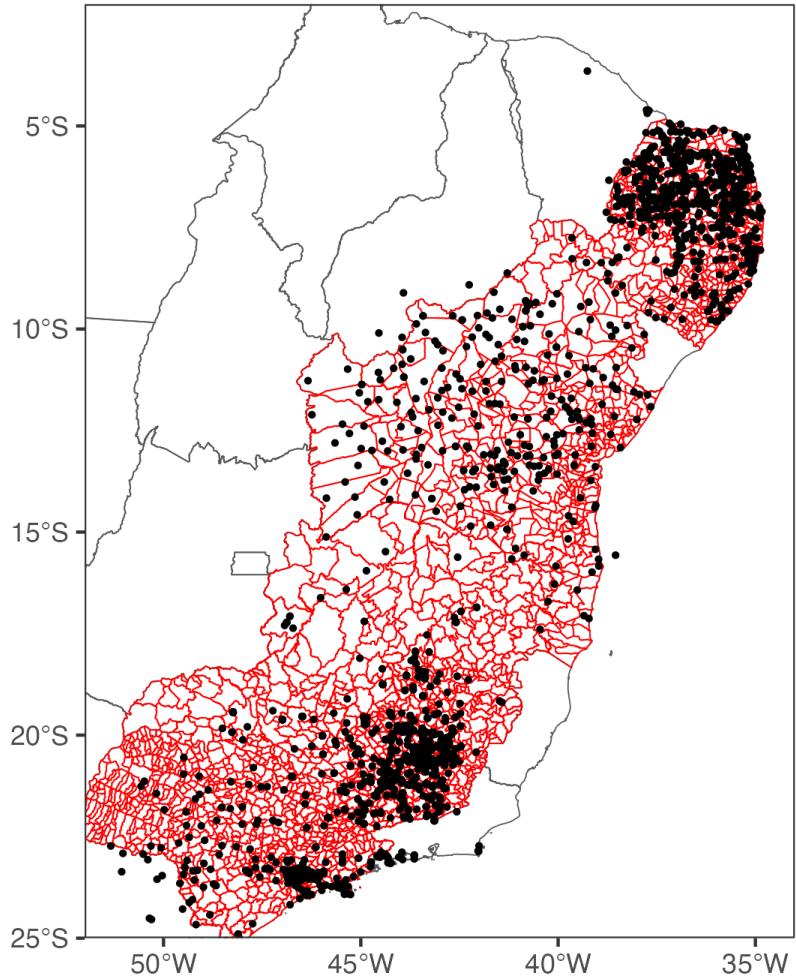
Figures

Figure 1: Land Grant Year Histogram



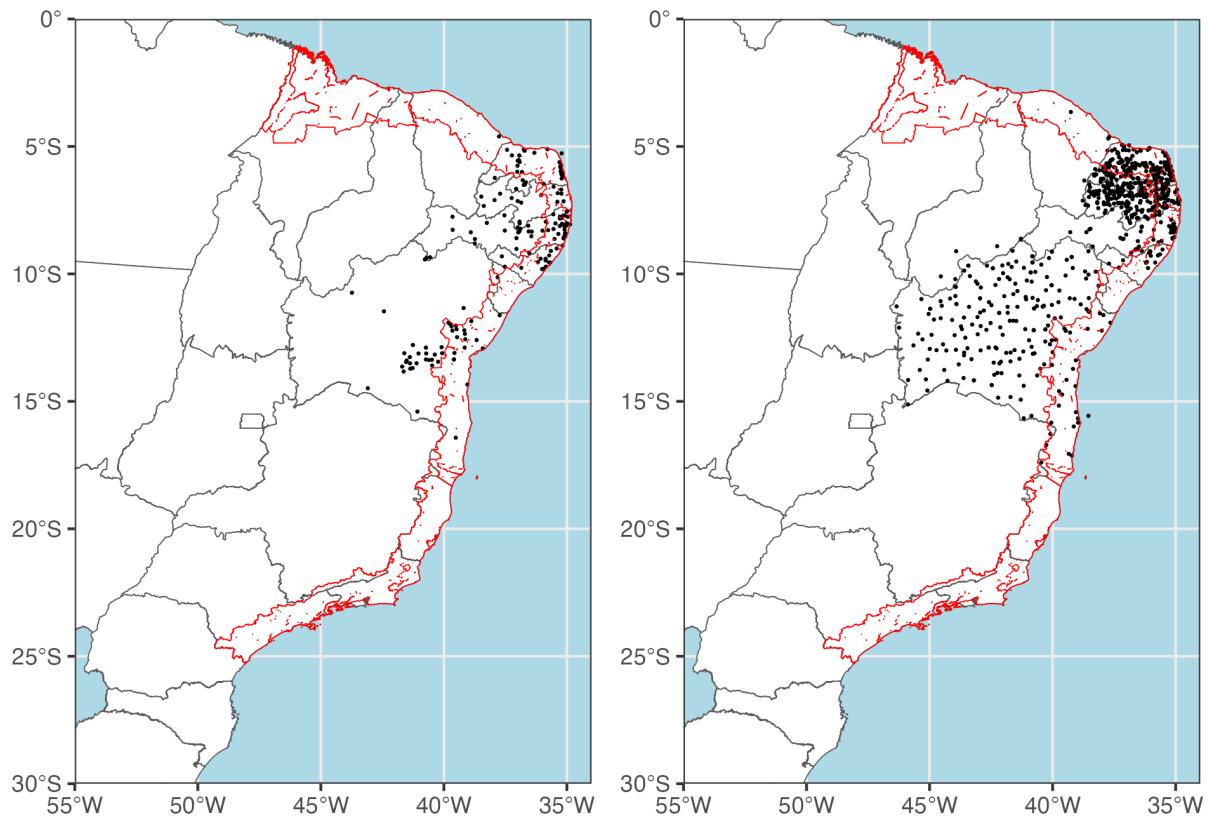
Notes: Histogram describing the yearly distribution of the land grants used in the dataset.

Figure 2: Land Grant Distribution



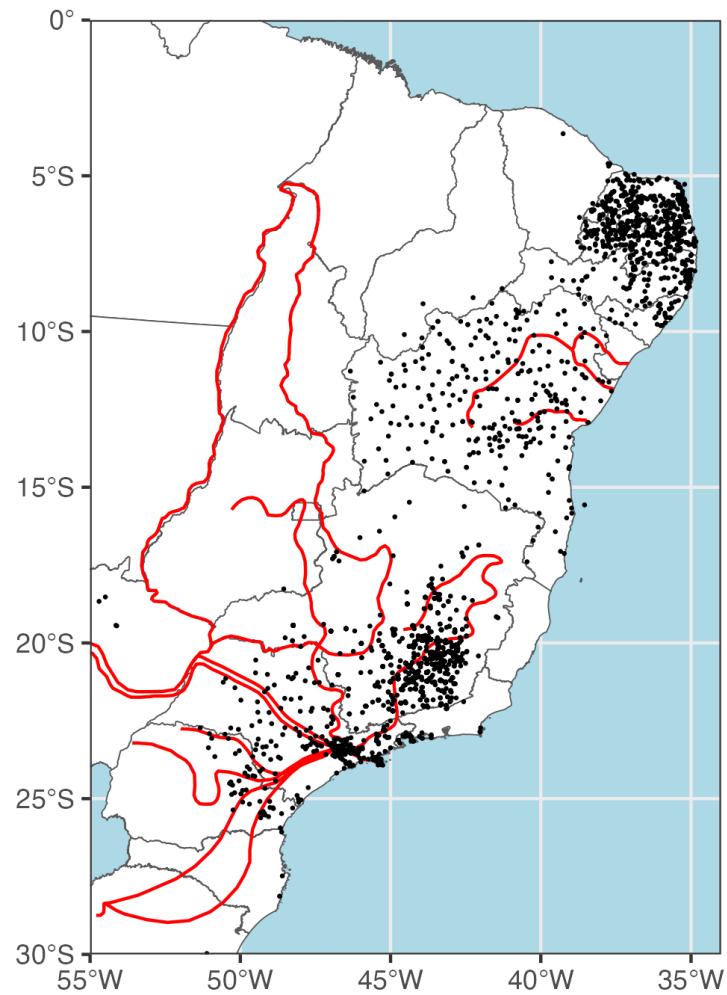
Notes: Geographical distribution of the land grants across the states. Municipalities for the 1991 census for the states which information on the land grants is available are highlighted in red. Each point indicates a unique land grant.

Figure 3: Distribution of Land Grants pre- and post- 1701



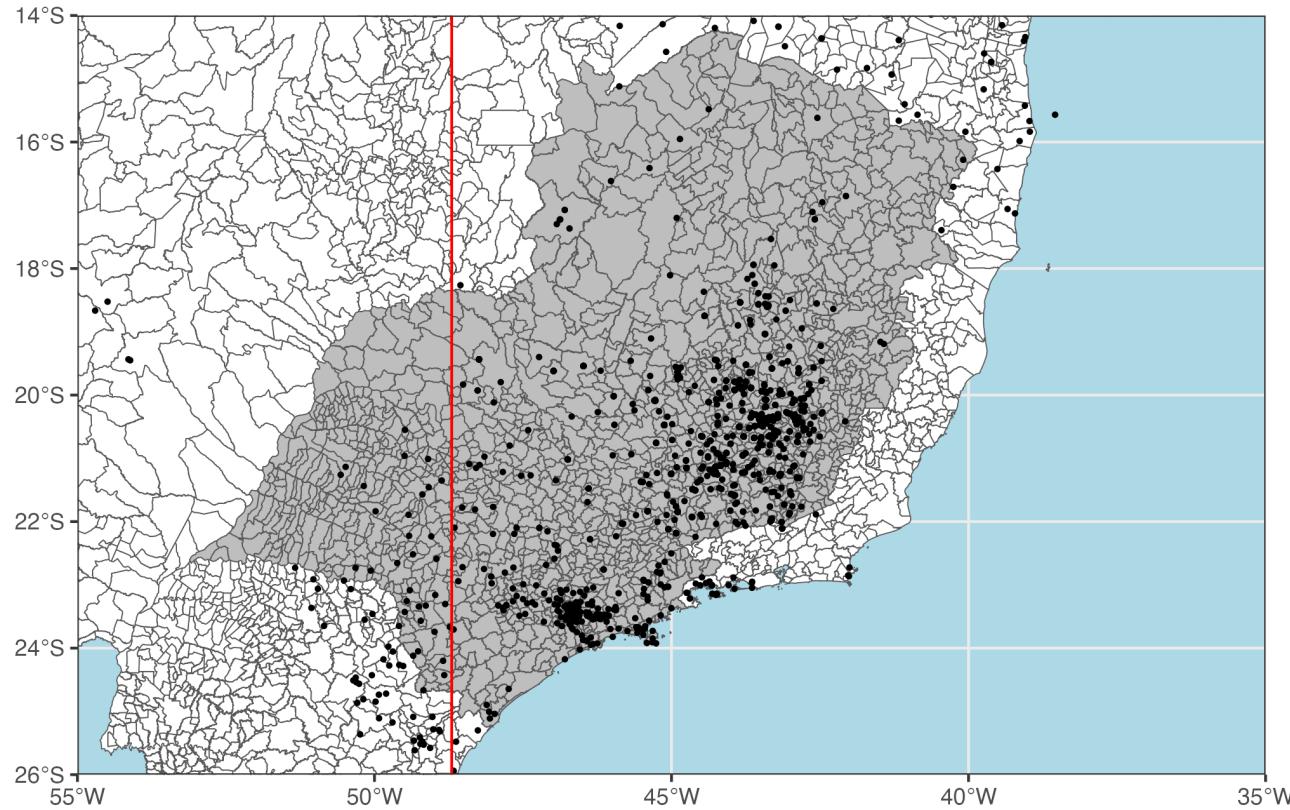
Notes: This figure considers whether or not any part of the municipality was within 80km of the coast.

Figure 4: Distribution of Land Grants alongside Bandeiras



Notes: This figure shows the distribution of the land grants alongside the *bandeiras* routes.

Figure 5: Distribution of Land Grants in Minas Gerais and Sao Paulo alongside the Treaty of Tordesillas line



Notes: This figure shows the distribution of land grants in the states of Minas Gerais and São Paulo alongside the Treaty of Tordesillas. The definition of the Treaty of Tordesillas line follows [Laudares et al. \(2022\)](#), being located at 48.7 W.

Tables

11.1. Summary Statistics

Table 1: Summary Statistics for variables in 1872

	Less than 80 km from the Coast (N=504)		More than 80 km from the Coast (N=611)		Diff. in Means	Std. Error
	Mean	Std. Dev.	Mean	Std. Dev.		
Education						
Literacy Rate (%)	25.1	17.0	18.1	10.7	-7.0**	0.9
Men Literacy Rate (%)	31.1	18.5	23.4	12.3	-7.7**	1.0
Women Literacy Rate (%)	19.1	16.9	12.7	10.4	-6.4**	0.9
Demographics						
Total Population	7839.9	5591.2	7089.6	4374.3	-750.4**	305.5
Proportion White (%)	43.3	18.9	47.4	16.8	4.1**	1.1
Proportion Black (%)	13.1	10.3	11.5	6.9	-1.7**	0.5
Proportion Pardo (%)	39.3	17.3	37.9	15.3	-1.5	1.0
Proportion Caboclo (%)	4.2	6.6	3.3	4.4	-1.0**	0.3
Proportion Slaves (%)	19.0	14.1	15.2	9.7	-3.8**	0.7
Labor						
Proportion in Agriculture (%)	33.1	15.0	28.4	11.6	-4.7**	0.8
Proportion in Raising Livestock (%)	0.6	1.6	1.0	2.7	0.4**	0.1
Proportion in Industry (%)	1.7	1.7	0.9	0.7	-0.8**	0.1
Proportion in Manual Work (%)	7.5	5.2	10.6	5.9	3.1**	0.3
Proportion in Liberal Professions (%)	0.9	1.2	0.4	0.6	-0.5**	0.1
Proportion in Other Jobs (%)	20.5	13.7	22.2	10.1	1.7**	0.7
Free Labor						
Proportion Free in Agriculture (%)	30.8	14.7	26.9	11.7	-3.8**	0.8
Proportion Free in Industry (%)	2.2	2.2	1.0	0.8	-1.1**	0.1
Proportion Free in Manual Work (%)	8.2	5.9	11.3	6.4	3.1**	0.4
Proportion Free in Liberal Professions (%)	1.1	1.4	0.5	0.7	-0.6**	0.1
Proportion Free in Other Jobs (%)	19.6	12.1	21.7	10.2	2.1**	0.7
Proportion Owners of Land (%)	0.4	0.9	0.5	0.9	0.0	0.1
Proportion Free Wage Earners (%)	4.7	5.3	7.2	6.0	2.4**	0.3
Enslaved Labor						
Proportion Enslaved in Agriculture (%)	41.5	22.7	35.7	17.0	-5.8**	1.2
Proportion Enslaved in Manual Work (%)	5.2	5.1	7.2	6.3	2.0**	0.3
Proportion Enslaved in Other Jobs (%)	25.2	20.9	26.0	14.1	0.8	1.1
Proportion Enslaved Domestic Work (%)	16.2	12.7	20.3	12.1	4.0**	0.7
Proportion Enslaved Wage Earners (%)	8.5	15.6	5.6	8.0	-2.9**	0.8

Table 2: Summary Statistics for variables in 1872 - Within 40 to 120km of the coast

	Less than 80 km from the Coast (N=139)		More than 80 km from the Coast (N=90)		Diff. in Means	Std. Error
	Mean	Std. Dev.	Mean	Std. Dev.		
Education						
Literacy Rate (%)	22.9	13.1	20.9	10.9	-2.1	1.6
Men Literacy Rate (%)	29.1	15.7	26.2	12.1	-2.9	1.8
Women Literacy Rate (%)	16.2	11.5	15.5	12.3	-0.8	1.6
Demographics						
Total Population	8909.7	6462.4	6503.7	4424.7	-2406.0**	719.7
Proportion White (%)	49.1	18.4	51.8	15.9	2.7	2.3
Proportion Black (%)	11.8	9.9	10.2	6.8	-1.5	1.1
Proportion Pardo (%)	35.0	16.9	33.9	14.2	-1.1	2.1
Proportion Caboclo (%)	4.1	4.0	4.1	7.0	0.0	0.8
Proportion Slaves (%)	19.5	16.3	19.5	13.0	0.0	1.9
Labor						
Proportion in Agriculture (%)	36.2	13.5	30.0	12.6	-6.2**	1.8
Proportion in Raising Livestock (%)	0.7	1.5	0.9	3.1	0.2	0.4
Proportion in Industry (%)	1.2	1.0	0.9	0.6	-0.3**	0.1
Proportion in Manual Work (%)	6.5	4.5	8.2	4.9	1.7**	0.6
Proportion in Liberal Professions (%)	0.5	0.5	0.5	0.5	-0.1	0.1
Proportion in Other Jobs (%)	18.6	12.6	21.1	10.7	2.6***	1.5
Free Labor						
Proportion Free in Agriculture (%)	33.1	13.0	27.8	12.8	-5.3**	1.7
Proportion Free in Industry (%)	1.6	1.4	1.2	0.8	-0.4**	0.1
Proportion Free in Manual Work (%)	7.0	4.9	9.0	5.3	2.0**	0.7
Proportion Free in Liberal Professions (%)	0.7	0.6	0.6	0.6	-0.1	0.1
Proportion Free in Other Jobs (%)	18.6	11.8	20.9	10.7	2.3	1.5
Proportion Owners of Land (%)	0.3	0.5	0.4	1.0	0.1	0.1
Proportion Free Wage Earners (%)	4.7	5.7	7.1	6.7	2.4**	0.9
Enslaved Labor						
Proportion Enslaved in Agriculture (%)	46.7	21.3	39.6	18.1	-7.1**	2.6
Proportion Enslaved in Manual Work (%)	4.9	4.9	5.7	6.7	0.9	0.8
Proportion Enslaved in Other Jobs (%)	20.1	15.9	23.9	16.2	3.8***	2.2
Proportion Enslaved Domestic Work (%)	14.3	11.1	17.7	12.4	3.4**	1.6
Proportion Enslaved Wage Earners (%)	5.6	11.3	6.1	10.1	0.4	1.4

11.2. Matching

Table 3: OLS and Matching Estimates on 1995 Agricultural Census

	Farms over 2000ha (%)			Occupied Land (%)			Leased Land (%)			Area Used for Livestock (%)		
	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching
<i>Panel A (Any Grants)</i>												
Any Land Grants	9.907*** (2.207)	7.438*** (1.542)	7.286*** (1.596)	9.573 (10.885)	11.291 (11.304)	7.112 (8.780)	7.722 (6.971)	15.074* (8.960)	8.263 (7.577)	-1.399 (1.612)	1.249 (1.663)	2.365 (1.673)
N	2372	2372	1472	2372	2372	1472	2372	2372	1472	2372	2372	1472
Geographical Controls		✓	✓		✓	✓		✓	✓		✓	✓
Control Mean	9.2	9.2	8.2	9.6	9.6	9.3	9.4	9.4	10.9	46.1	46.1	43.1
R ²	0.11	0.38	0.44	0.01	0.03	0.06	0.00	0.04	0.08	0.05	0.17	0.14
<i>Panel B (Pre 1700 Grants)</i>												
Grants Pre-1700	-4.624* (2.585)	0.392 (3.043)	1.430 (2.859)	-3.389*** (1.229)	-1.529 (2.216)	-1.815 (2.059)	21.829 (20.745)	22.222 (19.370)	36.473 (22.392)	-0.079 (2.507)	1.582 (2.474)	0.153 (3.561)
N	2372	2372	292	2372	2372	292	2372	2372	292	2372	2372	292
R ²	0.07	0.36	0.20	0.00	0.02	0.03	0.01	0.04	0.16	0.05	0.17	0.37
<i>Panel C (Post 1700 Grants)</i>												
Geographical Controls		✓	✓		✓	✓		✓	✓		✓	✓
Control Mean	9.8	9.8	6.9	9.3	9.3	9.1	9.7	9.7	3.8	47.1	47.1	40.5
Grants Post-1700	10.879*** (2.389)	7.467*** (1.596)	7.900*** (1.683)	10.328 (11.131)	12.206 (11.680)	10.944 (10.359)	8.590 (7.085)	16.722* (9.373)	13.613* (7.486)	-1.578 (1.710)	0.831 (1.738)	2.825 (1.717)
Geographical Controls		✓	✓		✓	✓		✓	✓		✓	✓
Control Mean	9.3	9.3	8.7	9.4	9.4	6.6	9.6	9.6	10.7	45.9	45.9	43.4
N	2372	2372	1300	2372	2372	1300	2372	2372	1300	2372	2372	1300
R ²	0.12	0.38	0.48	0.01	0.03	0.06	0.00	0.04	0.08	0.05	0.17	0.14

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

^a All regressions include state fixed effects. Geographical controls include latitude, longitude, average slope, average elevation, distance to the nearest navigable river, distance to the coast, maximum caloric output from pre-Columbian and post-Columbian crops, and whether or not the municipality contains four different types of soils.

11.3. Region Heterogeneity

	Farms over 2000ha (%)			Occupied Land (%)			Leased Land (%)			Area Used for Livestock (%)		
	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching
<i>Panel A (Any Grants)</i>												
Any Land Grants	9.907*** (2.207)	7.438*** (1.542)	7.286*** (1.596)	9.573 (10.885)	11.291 (11.304)	7.112 (8.780)	7.722 (6.971)	15.074* (8.960)	8.263 (7.577)	-1.399 (1.612)	1.249 (1.663)	2.365 (1.673)
N	2372	2372	1472	2372	2372	1472	2372	2372	1472	2372	2372	1472
R ²	0.11	0.38	0.44	0.01	0.03	0.06	0.00	0.04	0.08	0.05	0.17	0.14
<i>Panel B (Pre 1700 Grants)</i>												
Grants Pre-1700	-4.624* (2.585)	0.392 (3.043)	1.430 (2.859)	-3.389*** (1.229)	-1.529 (2.216)	-1.815 (2.059)	21.829 (20.745)	22.222 (19.370)	36.473 (22.392)	-0.079 (2.507)	1.582 (2.474)	0.153 (3.561)
N	2372	2372	292	2372	2372	292	2372	2372	292	2372	2372	292
R ²	0.07	0.36	0.20	0.00	0.02	0.03	0.01	0.04	0.16	0.05	0.17	0.37
<i>Panel C (Post 1700 Grants)</i>												
Grants Post-1700	10.879*** (2.389)	7.467*** (1.596)	7.900*** (1.683)	10.328 (11.131)	12.206 (11.680)	10.944 (10.359)	8.590 (7.085)	16.722* (9.373)	13.613* (7.486)	-1.578 (1.710)	0.831 (1.738)	2.825 (1.717)
N	2372	2372	1300	2372	2372	1300	2372	2372	1300	2372	2372	1300
R ²	0.12	0.38	0.48	0.01	0.03	0.06	0.00	0.04	0.08	0.05	0.17	0.14

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

	Farms over 2000ha (%)			Occupied Land (%)			Leased Land (%)			Area Used for Livestock (%)		
	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching	OLS	OLS	Matching
<i>Panel A (Any Grants)</i>												
Any Land Grants	17.495*** (3.167)	8.315*** (1.647)	8.880*** (1.740)	-0.436 (1.968)	0.961 (2.689)	1.196 (2.464)	-0.167 (7.616)	10.300 (10.612)	8.326 (10.069)	5.005** (2.466)	7.819*** (2.201)	6.979*** (2.141)
N	1007	1007	842	1007	1007	842	1007	1007	842	1007	1007	842
R ²	0.21	0.55	0.56	0.00	0.01	0.01	0.00	0.04	0.05	0.05	0.17	0.17
<i>Panel B (Pre 1700 Grants)</i>												
Grants Pre-1700	-4.777 (3.010)	2.408 (3.527)	7.266** (2.878)	-1.831* (1.041)	-3.219 (2.050)	-0.737 (0.613)	26.033 (25.041)	20.355 (21.678)	21.000 (26.580)	0.992 (2.844)	0.039 (2.413)	7.151** (3.207)
N	1007	1007	220	1007	1007	220	1007	1007	220	1007	1007	220
R ²	0.10	0.53	0.21	0.00	0.01	0.40	0.01	0.04	0.13	0.05	0.16	0.49
<i>Panel C (Post 1700 Grants)</i>												
Grants Post-1700	18.802*** (3.493)	7.958*** (1.767)	7.630*** (1.857)	0.077 (2.078)	2.097 (3.300)	2.171 (3.116)	1.009 (7.558)	16.255 (13.014)	16.306 (11.695)	4.760* (2.668)	8.508*** (2.382)	7.853*** (2.044)
N	1007	1007	716	1007	1007	716	1007	1007	716	1007	1007	716
R ²	0.23	0.55	0.59	0.00	0.01	0.01	0.00	0.04	0.06	0.05	0.18	0.19

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

Table 4: OLS and Matching Results for the 1995 Agricultural Census for the Northeastern states - Heterogeneity by Economic Acitivity

	Area Used for Livestock (%)		Farms over 2000ha (%)		Occupied Land (%)		Leased Land (%)	
	OLS	Matching	OLS	Matching	OLS	Matching	OLS	Matching
<i>Panel A (Livestock Grants Pre-1701)</i>								
Livestock Pre-1700	1.961 (3.604)	0.875 (4.557)	8.819*** (2.643)	6.985** (3.436)	-1.951 (1.460)	-1.536 (1.085)	32.459 (21.838)	24.887 (22.744)
N	1007	110	1007	110	1007	110	1007	110
R ²	0.04	0.23	0.15	0.10	0.01	0.36	0.02	0.06
Control Mean	47.3	46.5	9.7	9.1	7.1	6.9	14.7	9.8
<i>Panel B (Livestock Grants Post-1701)</i>								
Livestock Post-1700	11.314*** (4.092)	11.265*** (3.088)	5.347*** (1.155)	5.645*** (1.292)	-2.875 (1.789)	-2.263 (2.574)	-0.513 (5.840)	-0.879 (6.003)
N	1007	584	1007	584	1007	584	1007	584
R ²	0.06	0.10	0.15	0.20	0.01	0.01	0.01	0.02
Control Mean	42.9	43.3	7.4	7.6	7.5	7.4	9.1	12.5
<i>Panel C (Non-Livestock Grants)</i>								
Non-Livestock Grants	-0.670 (2.156)	-2.658 (4.012)	2.091 (1.309)	1.717 (1.675)	1.937 (4.064)	3.392 (3.782)	5.401 (7.248)	7.558 (8.499)
N	1007	384	1007	384	1007	384	1007	384
R ²	0.04	0.07	0.13	0.11	0.01	0.01	0.01	0.03
Control Mean	49.1	46.8	10.3	8.9	4.9	6.5	8.9	10.7

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

	Sugarcane Workers (%)		Livestock Workers (%)		Sharecroppers (%)	
	OLS	Matching	OLS	Matching	OLS	Matching
<i>Panel A (Any Grants)</i>						
Any Land Grants	1.118*** (0.305)	1.054*** (0.290)	-1.503*** (0.481)	-1.511*** (0.488)	-0.296 (0.251)	-0.315 (0.260)
N	915	820	915	820	915	820
R ²	0.24	0.21	0.22	0.22	0.42	0.42
Control Mean	1.3	1.9	23.4	23.1	2.9	2.6
<i>Panel B (Pre 1700 Grants)</i>						
Grants Pre-1700	1.411*** (0.545)	1.066 (0.680)	-2.097*** (0.777)	-2.555** (1.012)	-0.387 (0.326)	-0.550 (0.403)
N	915	228	915	228	915	228
R ²	0.23	0.30	0.22	0.25	0.42	0.40
Control Mean	2.3	1.6	22.4	23.1	2.7	3.1
<i>Panel C (Post 1700 Grants)</i>						
Grants Post-1700	1.040*** (0.305)	0.858*** (0.272)	-1.559*** (0.504)	-1.297** (0.523)	-0.657** (0.274)	-0.715** (0.295)
N	915	694	915	694	915	694
R ²	0.23	0.20	0.22	0.24	0.42	0.42
Control Mean	1.1	2	23.3	22.9	3.5	2.6

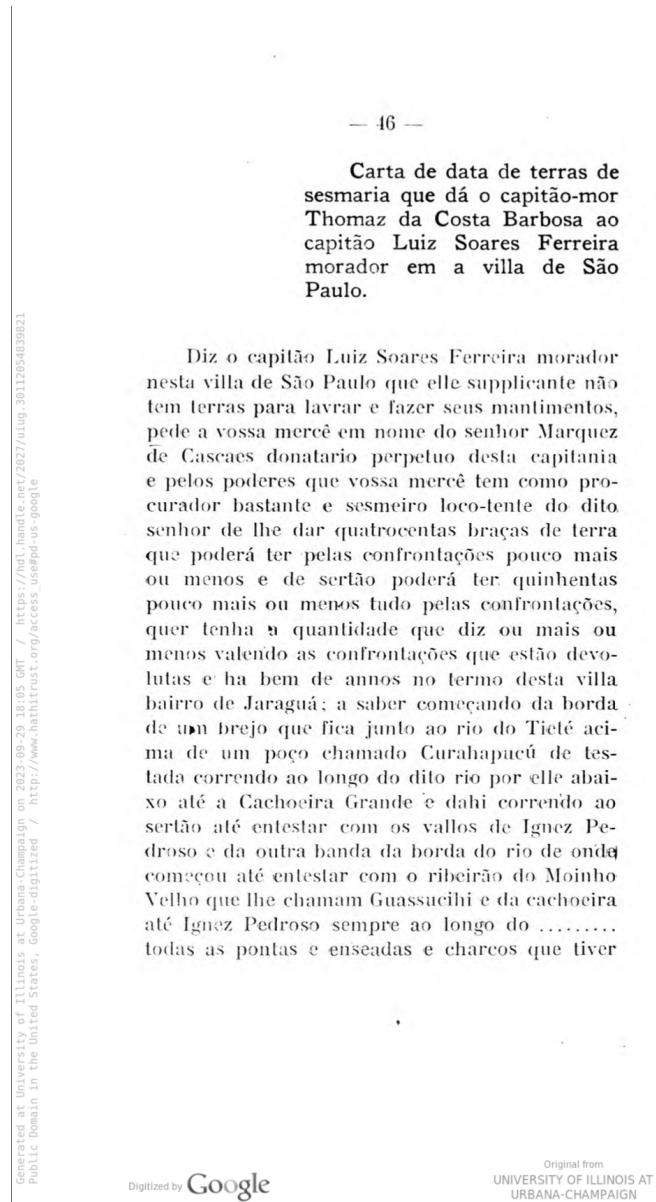
* p < 0.1, ** p < 0.05, *** p < 0.01

	Sugarcane Area (%)		Pasture Area (%)		Urban Area (%)	
	OLS	Matching	OLS	Matching	OLS	Matching
<i>Panel A (Any Grants)</i>						
Any Land Grants	1.099*** (0.295)	1.004*** (0.289)	0.597 (0.981)	0.632 (1.178)	0.612*** (0.183)	0.648*** (0.164)
N	6747	1334	6747	1334	6747	1334
R ²	0.22	0.29	0.34	0.20	0.03	0.05
Control Mean	0.9	0.7	30.1	28.6	0.2	0.2
<i>Panel B (Pre 1700 Grants)</i>						
Grants Pre-1700	2.739*** (0.883)	1.927* (1.145)	-6.423*** (2.367)	-9.338*** (3.034)	2.370*** (0.762)	2.324*** (0.793)
N	6747	258	6747	258	6747	258
R ²	0.22	0.34	0.34	0.26	0.05	0.13
Control Mean	3.1	0.8	40.6	28.7	0.5	0.3
<i>Panel C (Post 1700 Grants)</i>						
Grants Post-1700	0.775*** (0.291)	0.577* (0.301)	1.705* (1.024)	2.778** (1.243)	0.236** (0.108)	0.345*** (0.130)
N	6747	1122	6747	1122	6747	1122
R ²	0.22	0.35	0.34	0.23	0.03	0.04
Control Mean	1.2	0.8	28	28.7	0.3	0.3

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

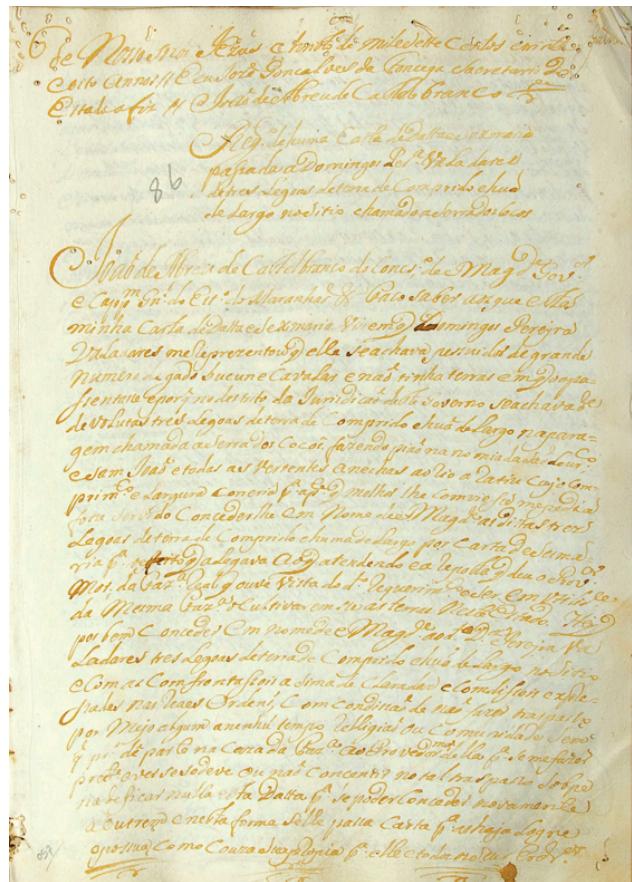
A. Figures

Figure A.1: Example letter from *Sesmarias; documentos do Archivo do Estado de São Paulo* (1921)



Notes: Example letter for the state of São Paulo, obtained from *Sesmarias; documentos do Archivo do Estado de São Paulo* (1921, p. 47). Based on the letter we extract information on the geographical location, alongside year of concession, economic activity, and etc. This letter extends another page which includes more information.

Figure A.2: Example original letter alongside its transcribed version



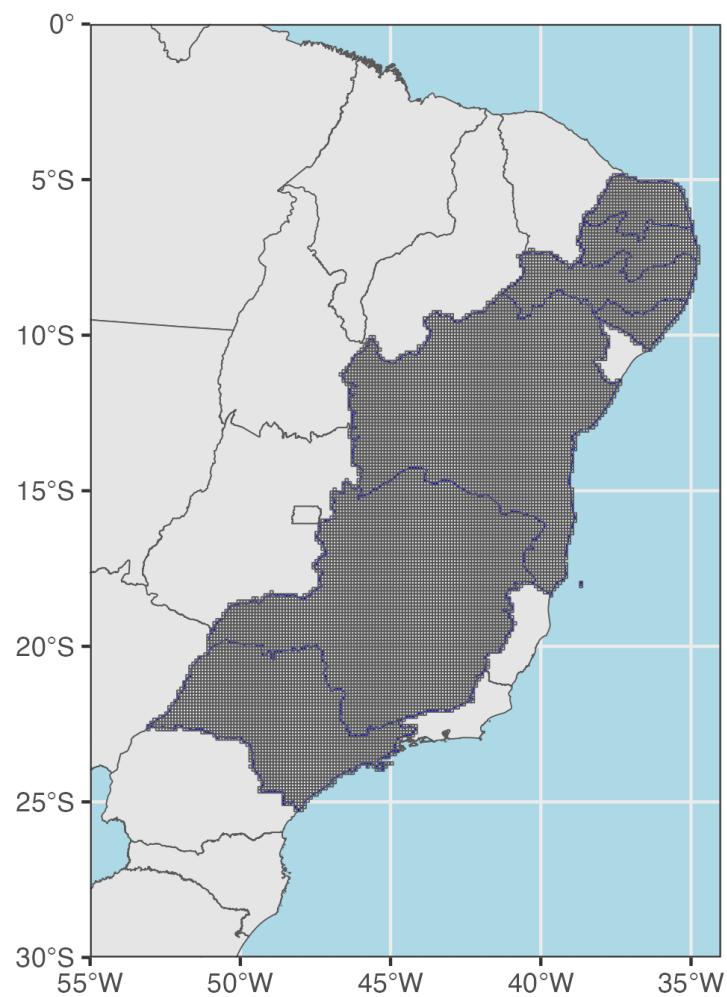
PA 0001
Carta de concessão a Domingos Pereira Valadares - 19/06/1738

Registro de uma carta de data e sesmaria passada a Domingos Pereira Valadares de 3 léguas de terra de comprido e uma de largura, no sítio chamado a Serra dos Cocos.

João de Abreu Castelo Branco, do Conselho de Sua Majestade, governador e capitão-general do estado do Maranhão, etc. Faço saber, aos que esta minha carta de data e sesmaria virem, que Domingos Pereira Valadares me representou que ele se achava possuidor de grande número de gado vacum e cavalar, e não tinha terras em que apascentasse, e porque no distrito da jurisdição deste governo se achavam devolutas 3 léguas de terra de comprido e uma de largo, na paragem chamada a Serra dos Cocos, fazendo piã na nomeada São Lourenço e São João, e todas as vertentes anexas ao Rio Araticu, cujo comprimento e largura correria para a parte que melhor lhe conviesse; me pedia fosse servido conceder-lhe, em nome de Sua Majestade, as ditas 3 léguas de terra de comprido e uma de largo, por carta de sesmaria, para efeito que alegava; ao que atendendo, e a a resposta que deu o provedor-mor da Fazenda Real, que houve vista do dito requerimento, e ser em utilidade da mesma Fazenda o cultivarem-se as terras neste estado. Hei, por bem, conceder, em nome de Sua Majestade, ao dito Domingos Pereira Valadares, 3 léguas de terra de comprido e uma de largo, no sítio e com as confrontações acima declaradas e condições expressadas nas Reais Ordens, com condição de não fazer trespassse, por meio algum, em nenhum tempo, religião ou comunidade, sem que primeiro dé parte na Casa da Fazenda ao provedor-mor dela, para se me fazer presente e ver se se deve ou não consentir no tal trespassse, sob pena de ficar nula esta data para se poder conceder novamente a outrem. E, nesta forma, se lhe passa carta para as haja, logre e possua como coisa sua própria, para ele e todos os seus herdeiros, ascendentes e descendentes, sem pensão, nem tributo algum mais que o dízimo a Deus, Nossa Senhor, dos frutos que nelas tiver, a qual concessão lhe faço não prejudicando a terceiro nem a Sua Majestade, se no dito sítio quiser mandar fundar alguma vila, reservando os pais Reais que nelas houver para embarcações, com declaração que mandará confirmar esta data por Sua Majestade dentro de 3 anos primeiros seguintes, e cultivará as ditas terras de maneira que dê fruto; e dará caminhos públicos e particulares aonde forem necessários para pontes, fontes, portos e pedreiras; e se demarcará, ao tempo da posse, por rumo de corda e braças craveiras, como é estilo e o dito senhor ordena. E, outrrossim, não sucederá nelas religiões ou pessoas eclesiásticas por nenhum título; e, acontecendo, possuí-las será com o encargo de pagar delas dízimos a Deus como se fossem possuídas por seculares; e, faltando a qualquer destas cláusulas, se haverão por devolutas e se darão a quem denunciar. Pelo que mando ao provedor-mor da Fazenda Real, e mais ministros e pessoas a que tocar, que, na forma referida, deixem ter e possuir ao dito Domingos Pereira Valadares as ditas terras, para ele e todos os seus herdeiros, ascendentes e descendentes, como coisa sua própria. Cumpram e guardem esta carta de data e sesmaria tão inteiramente como nela se contém, a qual lhe mandei passar por mim assinada e selada com o sinete de minhas armas, que se registrará aonde tocar e se passou por duas vias. Dada na cidade de São Luís do Maranhão, aos 19 dias do mês de junho do ano do nascimento de Nosso Senhor Jesus Cristo de 1738. E eu, José Gonçalves da Fonseca, secretário do estado, a fiz // João de Abreu Castelo branco//.

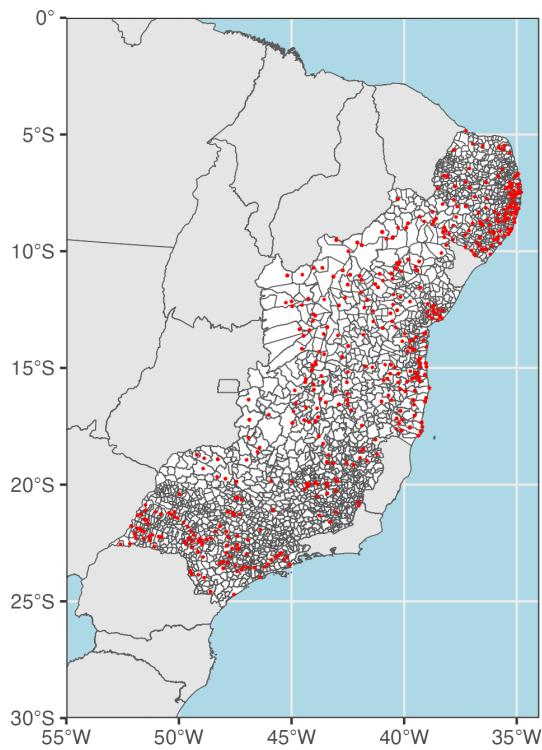
Notes: Example of an original manuscript and its transcribed version. Obtained from SILB with the original source being from ...

Figure A.3: Gridded Dataset for the Selected States



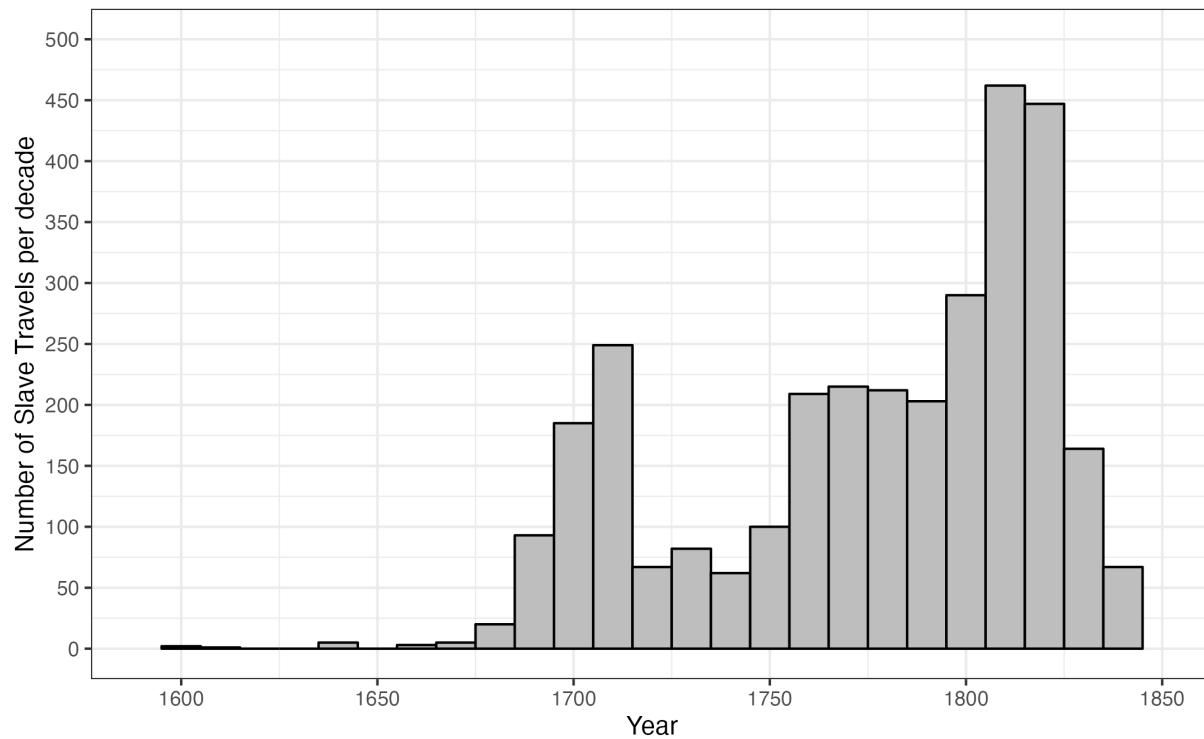
Notes: Gridded dataset. Each square represents 0.1×0.1 degrees, which is approximately 10×10 km.

Figure A.4: Geographical distribution of Land Conflicts in Brazil



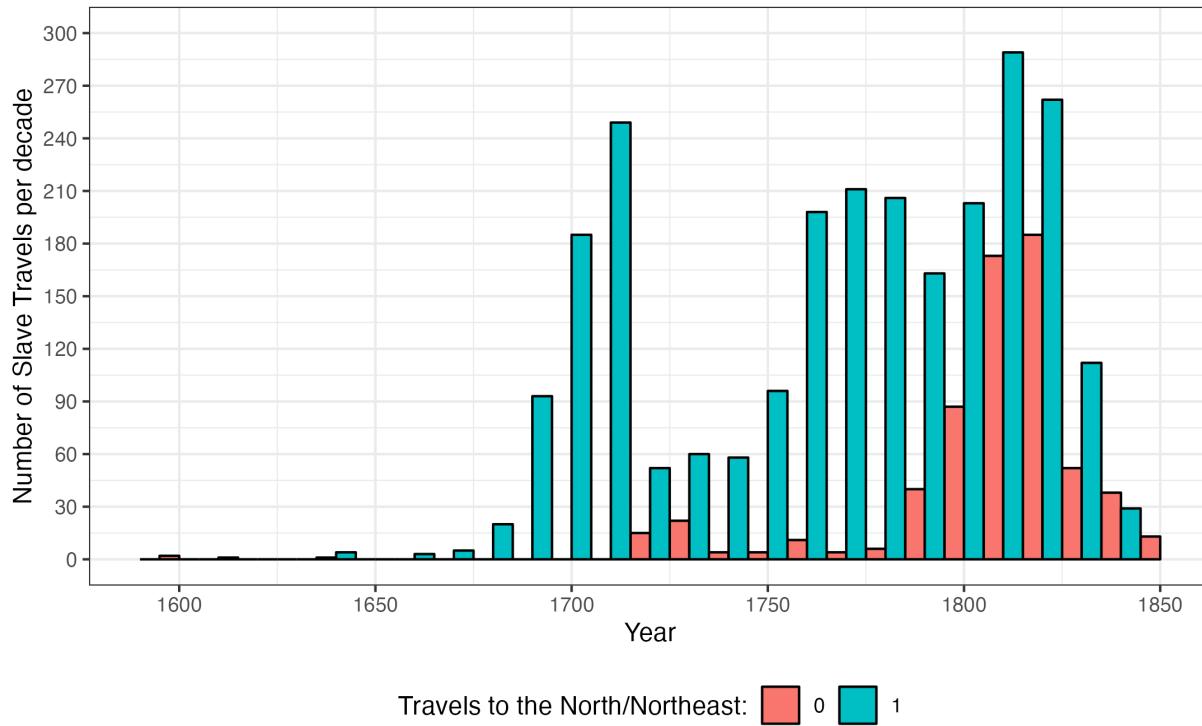
Notes: Geographical distribution of Land Conflicts in Brazil from 2014-2018 from [add source here]. Red dots indicate a conflict as reported on [add source here] alongside with 2010 municipality boundaries.

Figure A.5: Land Grant Year Histogram



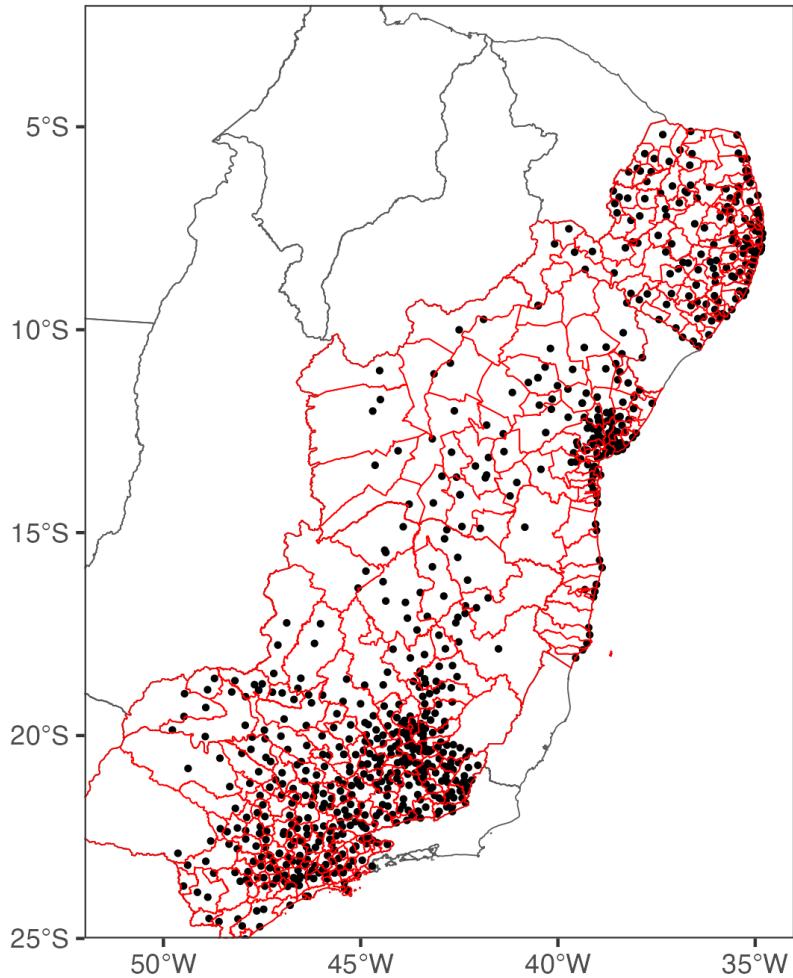
Notes: Histogram describing the yearly distribution of slave arrival ships from [add source here].

Figure A.6: Land Grant Year Histogram



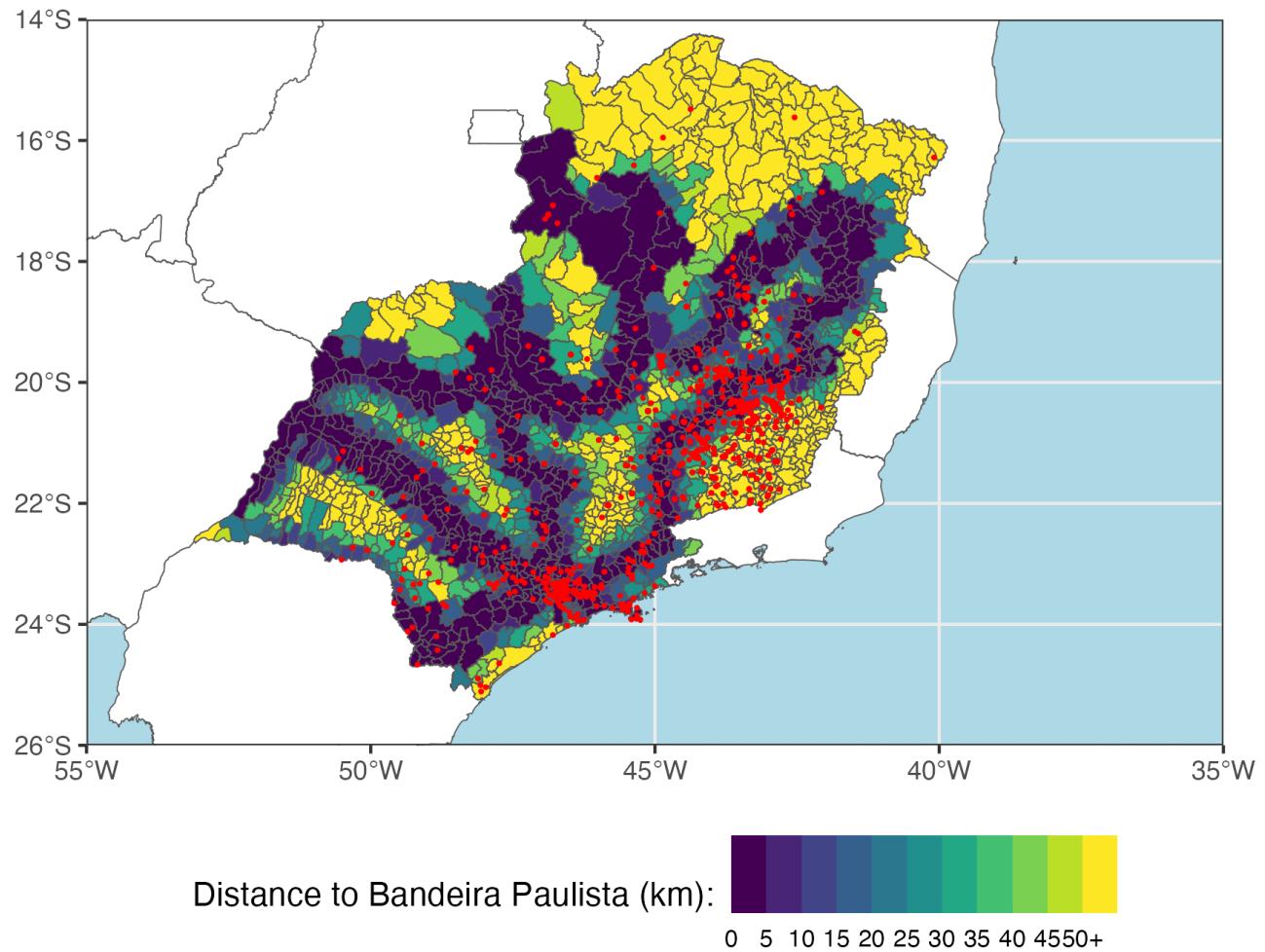
Notes: Histogram describing the yearly distribution of slave arrival ships from [add source here].

Figure A.7: 1872 Municipalities and Parish Locations



Notes: Geographical distribution of 1872 parishes alongside 1872 municipality and state boundaries. The states to which I have information on the land grants are highlighted in red. This map shows that several municipalities, especially in the Southeastern states have more than one parish per municipality. The sample increases by using parish-level information instead of municipalities from 337 to 815.

Figure A.8: *Bandeira* Routes and 2010 Municipalities



Notes: Proximity to a *Bandeira* route and 2010 municipalities boundaries in the states of São Paulo and Minas Gerais. Red dots indicate the grants in those two states.

B. Matching Descriptives

Figure A.9: Example original letter alongside its transcribed version

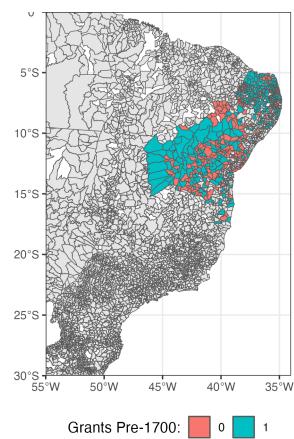
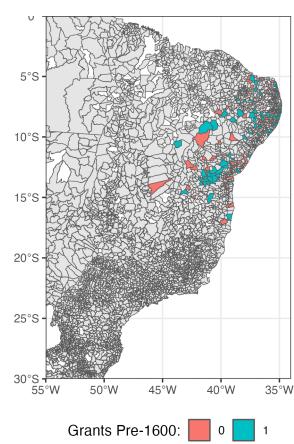
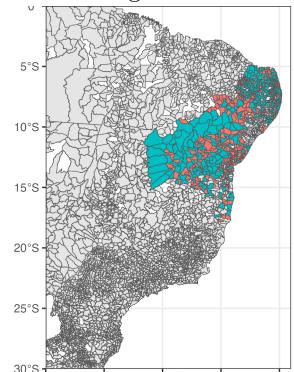
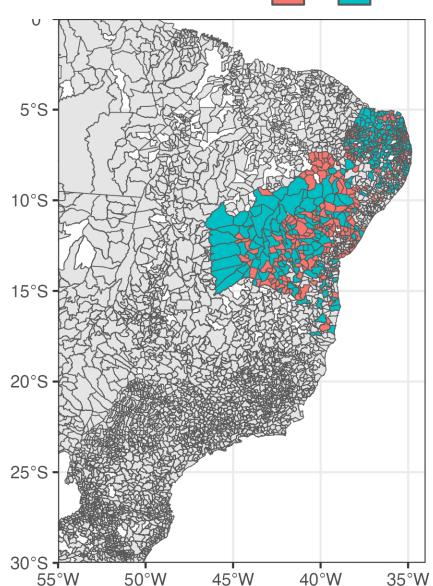
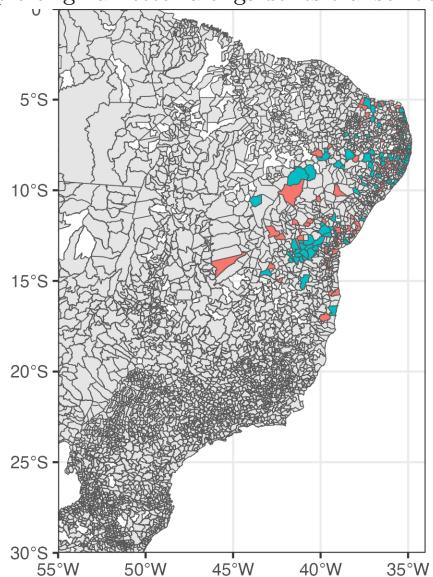


Figure A.10: Example original letter alongside its transcribed version



Grants Pre-1700: 0 1

Notes: Propensity Score Matching municipality selection for the 1995 Agricultural census. Blue municipalities represent municipalities that had at least one land grant within its boundaries, red represents the control municipalities.

C. Data Source Appendix

Below I describe the sources to which the land grants were compiled from. The states with a * indicate that the works was done by the researchers at SILB.

Pernambuco*

- Documentação Histórica Pernambucana. Recife: Imprensa Oficial, 1954. Vol. 1-2
- Documentação Histórica Pernambucana: sesmarias. Recife: Secretaria de Educação e Cultura. Biblioteca Pública, 1959. Vol. 1-4
- Coleção Documentos Históricos Biblioteca Nacional do Rio de Janeiro. Vol. 20-22
- Arquivo Nacional do Rio de Janeiro. Códice 427
- Arquivo Nacional do Rio de Janeiro. Códice 155
- Livro do Tombo do Mosteiro de São Bento de Olinda, Imprensa Oficial - Recife, 1948
- Livros do Tombo de São Bento. Book 1-3
- Revista do Instituto Arqueológico, Histórico e Geográfico Pernambucano, 1896.
- Revista do Instituto Histórico de Goiana, 1871.

Rio Grande do Norte*

- O Treslado do auto e mais diligências que se fizeram sobre as datas de terras da capitania do Rio Grande, que se tinham dado. Fortaleza: Revista do Instituto do Ceará, 1909, Ano XXIII.
- IHGRN - Fundo Sesmarias - Books 1-9
- Documentos Históricos da Biblioteca Nacional do Rio de Janeiro..Vol. 23
- Documentos Históricos da Biblioteca Nacional do Rio de Janeiro..Vol. 24 Arquivo Nacional Rio de Janeiro, Códice 427

Bahia*

- Códice 427 - Rio de Janeiro
- FREIRE, Felisbelo. História territorial do Brasil. Salvador: Secretaria da Cultura e Turismo, Instituto Geográfico e Histórico da Bahia, 1998

- DHBN - cartas publicadas na coleção Documentos Históricos da Biblioteca Nacional - DHBN, volumes 13 a 22
- Anais do Arquivo Público do Estado da Bahia - Publicação dos anais do APEB - Anais do Arquivo Público do Estado da Bahia. Volumes 3 e 11
- Códice 155 - Rio de Janeiro
- Mosteiro de São Bento - Cartas publicadas nos Livros do Tombo do Mosteiro de São Bento

Paraíba*

- British Library: Livro 1 (Land Grants (sesmarias) / Land Registers, 1757 - 1764); Livro 2: (Plots of Land 1722-1727 / Land Grants (sesmarias) 1722-1727); Livro 3: (Land Grants (sesmarias), 1785 -1787); Livro 4: (Land Grants (sesmarias), 1728 -1738); Livro 5: (Land Grants (sesmarias), 1816 - 1824); Livro 6: (Land Grants (sesmarias), 1747 - 1755); Livro 7: (Land Grants (sesmarias), 1789 - 1808); Livro 8: (Plots of Land - 1714-1717 / Land grants (sesmarias); Livro 9: (Land Grant - Various Parishes, 1768 - 1776); Livro 10: (Land Grants 1704-1722 / Sesmarias 1704-1722)
- TAVARES, João de Lira. Apontamentos para a História territorial da Parahyba. ed. Facsimilar. Brasília: Senado Federal, 1982. vol. CCXLV.
- Documentação Histórica Pernambucana: sesmarias. Recife:
- SECRETARIA DE EDUCAÇÃO E CULTURA BIBLIOTECA PÚBLICA, 1959
- Documentos Históricos da Biblioteca Nacional (DHBN): DHBN, V. 23. P.402-405.
- Códice 427 - Arquivo Nacional - Rio de Janeiro PUBLICAÇÕES DO ARCHIVO NACIONAL. VOL XXVII RIO DE JANEIRO Officinas Graphicas do ARCHIVO NACIONAL 1931. (Códice 155)
- Biblioteca Pública do Estado de Pernambuco (BPE) - Recife

Sao Paulo

- *Sesmarias; documentos do Archivo do Estado de São Paulo (1921)* Vols. 1-3
- *Instituto Histórico e Geográfico de São Paulo (1928)*

Minas Gerais

- Revista do Arquivo Publico Mineiro - Inventory of the sesmarias letters on the Public Archive Codex - Volume 37 (1988)
- Revista do Arquivo Publico Mineiro - Volumes 10-24 (1905-1933).

D. Description of Letters and Georeferencing

Below is a description on how the process used to georeference the land grants.

1. Based on the letter information, since a location was required in order for the land to be granted, the geographical information on where the land was requested and who it was their neighbors is extracted.
2. For example, the sesmaria of
3. It is also possible to georeference based on who the neighbors of the person were.
 - (a) For example, the sesmaria of Matheus Ferndandes Ramos which was granted in 1698, is described as being close to the sesmaria of Lucas Pedroso which was granted in 1638.
4. When not possible to georeference based on the above, the location is approximated at the municipality level.
 - (a) For example, in Minas Gerais, [...]

E. Parish Level Georeferencing

The 1872 census was conducted at the parish level. For the 1872 census, the seven states that had a total of X municipalities, I georeferenced the information at the parish level for that census increasing the total sample size to X.

Below is a description of how the georeferencing was done:

1. If the municipalities only had one parish, then the parish location is the same as the municipality seat.
 - (a) The municipality of Serpa in Amazonas has only one parish, “Nossa Senhora do Rosário de Serpa”, therefore it is georeferenced to the municipality seat of Serpa.
2. If a municipality has more than one parish, first I checked based on the name whether or not the parish level can be traced to a present-day city.
 - (a) The municipality of Vigia in Para has three parishes: “Nossa Senhora de Nazaré da Vigia”, “Nossa Senhora do Rosário de Collares”, and “São Caetano de Odivellas”.
 - (b) All of these parishes can be traced down to present-day cities, “Nossa Senhora de Nazaré da Vigia” is the present-day municipality of Vigia, “Nossa Senhora do Rosário de Collares” is the present-day municipality of Collares, and “São Caetano de Odivellas” is the present-day municipality of São Caetano de Odivellas
3. If the parish cannot be traced down based on the name to a present-day municipality then I took a look at other sources.²⁵
 - (a) For example, the parish of [...] in the state of RJ cannot be traced by name to a present-day municipality, however, the church of the same name remains in the same place.
 - (b) Other maps such as [add the historical minas one here] were also used to identify old names of places.

²⁵ <https://cidades.ibge.gov.br/> includes information on historical names for municipalities, based on their history.

F. Coastal RDD - Results

Given the setting of the coastal ban I estimate the following set of equations:

$$Y_{m,s} = \beta \cdot CoastDist_{m,s} + f(D_{m,s}) + \mu_s + X_{m,s} + \epsilon_{m,s} \quad (7)$$

For the 1970-2010 census, given that I have information at the individual level I estimate:

$$Y_{i,m,s} = \beta \cdot CoastDist_m + f(D_m) + \mu_s + X_{i,m,s} + \epsilon_{i,m,s} \quad (8)$$

G. Data Appendix - 1872

Below are the definitions of the variables measured for the 1872 census and how they were constructed. Some of the variables are already defined in the census:

G.1. Base Variables, available by gender and free vs. enslaved:

1. Number of Literate People
2. Number of People 6-15 Attending/Not Attending/No Information on Schooling
3. Demographic Information on Race
 - (a) Number of Enslaved People
 - (b) Number of Pardos
 - (c) Number of Whites
 - (d) Number of Blacks
 - (e) Number of Caboclos
4. Number of People not born in the state based on origin: Within Brazil or from another country.
5. Number of people on types of jobs: Liberal/Manual/Agricultural/Industry/Other Jobs/No Jobs
 - (a) Liberal: Religious men/women, judges, lawyers, notaries, attorneys, justice officials, medics, surgeons, pharmacists, midwives, teachers, public officials, and artists.
 - (b) Manual or Mechanical:
 - (c) Agricultural: Farmers and livestock breeders.
 - (d) Industry: Manufacturers and merchants.
 - (e) Other: Military officers, mariners, fishermen, capitalists/owners, *jornaleiros* (workers that are paid based on a working day), domestic workers, and no information
6. Number of people by age group.

G.2. Constructed Variables:

1. Number of Free People Above the Age of 15

$$\sum \# \text{ Of Free People Above 15}$$

2. Literacy Rates, following [Rocha et al. \(2017\)](#):

$$100 \times \frac{\# \text{ of Literate Free People}}{\# \text{ of Free People Above the Age of 15}}$$

3. Men Literacy Rates:

$$100 \times \frac{\# \text{ of Literate Free Men}}{\# \text{ of Free Men Above the Age of 15}}$$

4. Women Literacy Rates:

$$100 \times \frac{\# \text{ of Literate Free Women}}{\# \text{ of Free Women Above the Age of 15}}$$

5. Total number of children between 6-15

$$\begin{aligned} & \# \text{ of Free People between the ages 6-15 who attend school} + \\ & \# \text{ of Free People between the ages 6-15 who do not attend school} + \\ & \# \text{ of Free People between the ages 6-15 with no information on schooling} \end{aligned}$$

6. Percentage of Children between age 6-15 who are attending school:

$$100 \times \frac{\# \text{ of Free People between the ages 6-15 who attend school}}{\text{Total } \# \text{ of Free Children between 6-15}}$$

7. Percentage of Boys between age 6-15 who are attending school:

$$100 \times \frac{\# \text{ of Free Boys between the ages 6-15 who attend school}}{\text{Total } \# \text{ of Free Boys between 6-15}}$$

8. Percentage of Girls between age 6-15 who are attending school:

$$100 \times \frac{\# \text{ of Free Girls between the ages 6-15 who attend school}}{\text{Total } \# \text{ of Free Girls between 6-15}}$$

9. Proportion of Slaves to Free Population:

$$100 \times \frac{\# \text{ of Enslaved People}}{\# \text{ of Free People}}$$

10. Proportion of White/Caboclo/Black/Pardo:

$$100 \times \frac{\# \text{ of Free People of Certain Race}}{\# \text{ of Free People}}$$

11. Proportion of Internal/Foreign Immigrants:

$$100 \times \frac{\# \text{ of Free People of Certain Immigration Category}}{\# \text{ of Free People}}$$

12. Proportion of Teachers per 10,000:

$$10000 \times \frac{\# \text{ of Free People working as Teacher}}{\# \text{ of Free People}}$$

13. Proportion of Workers by Labor Market characteristics (as described in the data above):

$$100 \times \frac{\# \text{ of Total People in Certain Job}}{\# \text{ of Total People}}$$