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Land Structure in Colonial Portuguese America: The village of Campinas/ São Paulo in the light of the expansion of the sugar frontier (1790-1818) *

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Abstract

This article aims to analyze the land ownership structure in Campinas, Brazil, at the end of the expansion of its sugar economy, highlighting the influence of the sugar frontier as conceptualized by Jason W. Moore. The study uses historical land records and economic data between 1790 and 1818 to analyze the concentration of land ownership and its socio-economic implications. The data suggests that the expansion of the sugar industry led to a significant concentration of land in the hands of a few elites. The results show that the introduction of sugarcane cultivation led to a substantial increase in land concentration and the concentration of social hierarchies. This research contributes to understanding the local impacts of global capitalist expansion and enables a more detailed examination of ecological transformations and socio-economic inequalities in historical and contemporary contexts.

Keywords: Land Structure, Colonial Portuguese America, Sugar Frontier, Campinas/SP, Land concentration.

Estructura territorial en la América portuguesa colonial: la ciudad de Campinas/SP frente a la expansión de la frontera del azucar (1790-1818)

Resumen

Este artículo tiene como objetivo analizar la estructura de la propiedad de la tierra en Campinas (Brasil) al final de la expansión de su economía azucarera, subrayando la influencia de la frontera azucarera, conceptualizada por Jason W. Moore. El estudio emplea registros históricos de tierras y datos económicos desde 1790 hasta 1818 para examinar la concentración de la propiedad de la tierra y sus implicaciones socioeconómicas. La hipótesis sostiene que la expansión de la industria azucarera condujo a una concentración significativa de tierras en manos de unas pocas élites. Los resultados muestran que, efectivamente, la introducción del cultivo de caña de azúcar provocó un aumento considerable en la concentración de la tierra y en las jerarquías sociales. Esta investigación contribuye a la comprensión de los impactos locales de la expansión capitalista global y abre nuevas vías para estudios adicionales sobre las transformaciones ecológicas y las desigualdades socioeconómicas en contextos históricos y contemporáneos.

Palabras clave: Estructura agraria, América Portuguesa Colonial, Frontera mercantil del Azúcar, Campinas/SP, Concentración de tierras.

Introduction

According to García Rodríguez (2007), the history of the formation of a sugar complex cannot be complete without consideration of one of its fundamental elements: land ownership. The success of large rural properties producing commodities in America was largely dependent on the use of slave labor and the ability to acquire and manage it. However, having unoccupied land was a fundamental prerequisite for the installation of a sugar mill[1] and, at times, it led to significant disparities in the productive capacities of different units. The land ownership in the colonial era was not only considered synonymous with social prestige and fortune, but it was also a basic condition for the expansion of capitalism in America. As Moore (2000: 427) asserted, "the steady growth of the world sugar market throughout the early modern period meant that existing land under cultivation was overexploited and new lands were always needed, partly to replace worn-out lands, partly to expand production".

As Barickman (2003) observed, the relevance of studying land ownership in agricultural border zones is questionable, given the seemingly limitless supply of land and the fact that "the existence of a border undoubtedly diminished the value of land ownership" (Barickman, 2003: 176, my translation), both in economic and social terms. In the captaincy of São Paulo during the 18th century, its western borders implicated two challenges to those who invested in the territory: the first was the inevitable confrontation with indigenous people who resisted in the region; the second was the great distance from the port area of Santos. To argue the importance of investigating land ownership in the colonial period, it is essential to highlight two topics. The first to be noted is that all sugarcane plantations required a significant amount of land for their operation, which far exceeded the area utilized for manufacturing. This land was necessary for planting crops or even for forest reserves, whether for future plantations or for preparing firewood. Secondly, an investigation into sugar production for the international market must necessarily encompass the field of product transportation. The distance between the *engenhos de açúcar* (sugarcane plantations) and the port of Santos imposed constraints on the commodity frontier for the installation of sugar mills in São Paulo. This was particularly the case given the vulnerability of sugar to the environmental conditions during the 200 km journey on muleback. In light of these considerations, it becomes evident that despite the abundance of land in the captaincy of São Paulo and the subsequent establishment of extensive plantations until the end of the 19th century, the captaincy was constrained in its expansion due to its distance from the nearest port, which was crucial for trade with Europe. Furthermore, the extensive land requirements of the sugarcane plantations gave rise to conflicts, emphasizing the necessity to examine land ownership to comprehend the expansion of the sugar frontier in the captaincy of São Paulo between the 18th and 19th centuries.

[1] We understand that the use of the term "sugar mills" is metonymically employed to express what, in Portuguese, would be "Engenho", commonly used to refer to the property as a whole, as well as to the manufacturing part, in which the sugarcane is transformed into sugar. Here, we chose to use "sugarcane plantation" to refer to the property as a whole, including what meronymically composes it.

Nevertheless, this article aims to analyze how the land structure of Campinas, a village in the Captaincy of São Paulo, was organized in the final period of establishing its sugar complex, in 1818, when it was already fully integrated into the sugar frontier. Therefore, it is necessary to analyze the land division established in light of the different appropriations of the landowners in Campinas. To accomplish this objective, and considering the lack of other historical documents related to land ownership in Campinas, the nominative lists of inhabitants and the *Inventário dos Bens Rústicos* of 1818 of Campinas[2] we used as main historical sources. The central hypothesis of this work is that the land organization established by the expansion of the sugar frontier in Campinas was extremely unequal, with a high rate of land concentration in a few rural properties.

It is essential to clarify that the concept of the 'sugar frontier' is employed in this paper not merely as a straightforward reflection of the capitalist expansion across the Americas. As Moore has articulated, the "commodity chains and commodity frontiers – extending from Brazil to the Baltic and everywhere in between – are pivotal to the production of the capitalism Atlantic" (Moore, 2021: 746), in other words, "the *sugar commodity frontier*, in this rendering, was the grand arc of the sugar/slaving complex as it moved across the capitalist Atlantic" (Moore, 2021: 756).

This article is organized as follows: the first part will present the main economic and demographic transformations of Campinas during the process of establishing its sugar complex, to understand the process of its incorporation into the European world economy, between 1790 and 1818, becoming the city with the largest sugar production in the captaincy of São Paulo. We chose this time frame because the period of the establishment of sugarcane plantations in Campinas can be understood as beginning in 1790 and reaching its peak in 1818 (Nicolette, 2022). The second part will present an analysis of the land structure of Campinas in 1818, based on the segmentation of properties into surface size categories (*Faixa de Tamanho de Superfície*) as proposed by the historian Breno Moreno (2022). Subsequently, the final considerations are presented, looking at interpretations that revisit the main results of the article and suggest new research possibilities.

The incorporation of Campinas into the sugar frontier

The colonization of the Americas occurred in different eras of land and labor exploitation. For a better understanding of the subject being discussed, it is necessary to mention that the captaincies of Bahia and Pernambuco were exploited in the 16th and 17th centuries, with the intent of producing thousands of tons of sugar on an almost annual basis to supply the European market (Barickman, 2003; Schwartz, 2011). In contrast, the captaincies further south in Portuguese America, such as São Paulo and Rio de Janeiro, were largely isolated from external

[2] The *Inventário dos Bens Rústicos* of Campinas (IBR) is transcribed and accompanied by a detailed commentary in Nicolette & Moreno (2021). This historical document can be translated as "Inventory of Rural Properties," and a detailed explanation of its function and purpose can be found later in this paper.

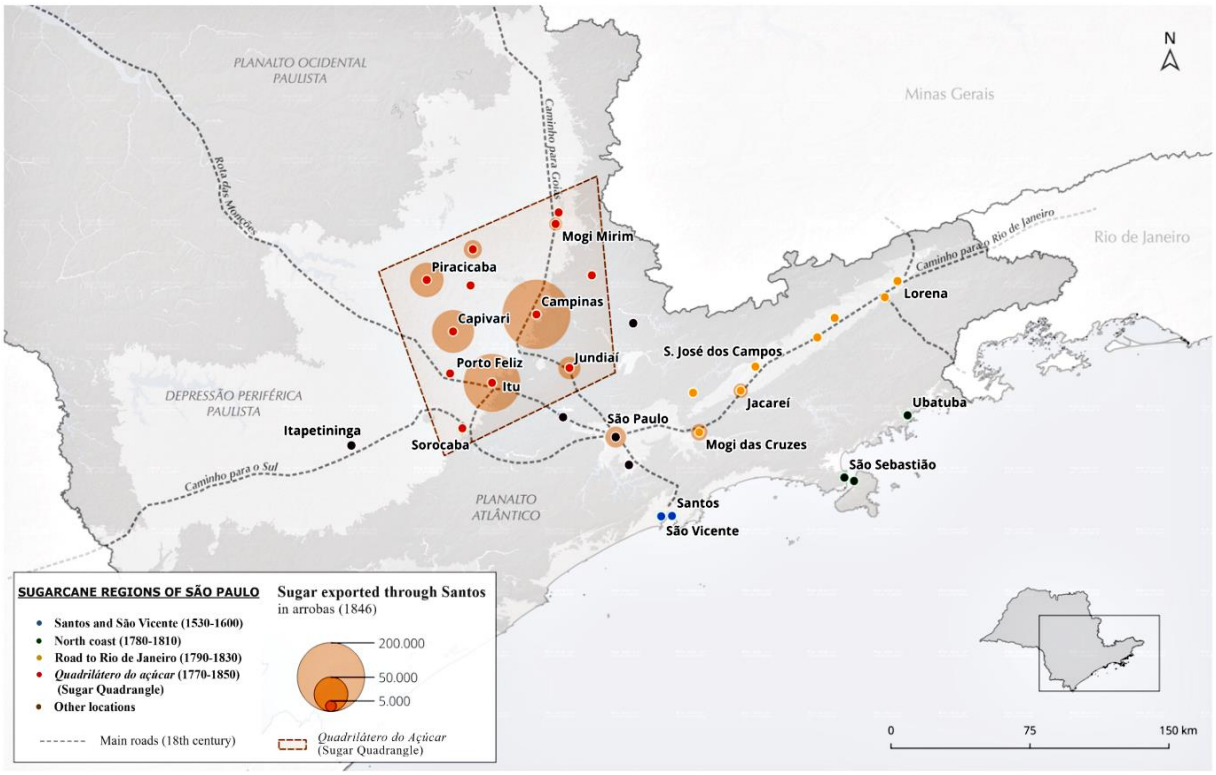
investment because of the lack of interest from the Portuguese elite (Luna; Klein, 2005; Arruda, 1980). Following the stages of capitalist expansion as proposed by Moore (2000; 2015), it can be argued that São Paulo and Rio de Janeiro were still situated in the surplus frontier stage of the European world economy during the 18th century. This stage would experience a transformation during the 18th century, particularly in response to the discovery of gold in the Minas Gerais region (Petrone, 1968; Marcílio, 2000).

To ensure the provision of supplies (such as rice, corn, cassava etc.) to Minas Gerais and other regions impacted by the phenomenon of the interiorization of Brazil, the supply economy experienced significant expansion in several captaincies situated near Minas Gerais. This scenario was also observed in São Paulo (Marcílio, 2000; Costa, 1967). The region that came to be known as *Oeste Paulista*[3] included several villages situated between the city of São Paulo and the contemporary state of Mato Grosso do Sul. It was one of the areas most significantly impacted by the production of supplies destined for the gold and silver mining regions. Throughout the 18th century, the residents of these villages experienced a process of economic growth and social mobility, particularly in Itu (approximately 100 kilometers from the city of São Paulo), where an elite class emerged with a vested interest in land ownership (Bacellar, 1997); and during the second half of the 18th century, residents of the captaincy of São Paulo began to convert their capital into sugarcane plantations effectively (Luna; Klein, 2005).

Sugar production had already been established in the captaincy of São Paulo in earlier periods, but in modest quantities, serving only local demand. It was from the 1750s onward that the region known as *Quadrilátero do açúcar* (Sugar Quadrangle) was systematically explored to supply European markets, particularly the demand for sugar (Petrone, 1968; Marcondes; Oliveira, 2022; Bacellar, 2023). Map 1 delineates the geographic distribution of sugar production in São Paulo between the 16th and 19th centuries. The map identifies the region with the highest concentration of sugar production (*Quadrilátero do Açúcar*), which is centered around the village of Campinas.

[3] Oeste Paulista can be translated as Western region of São Paulo. In essence, this region is represented on the map 1 by the *Quadrilátero do Açúcar* region.

Figure 1. Map of sugarcane regions of São Paulo (1530-1860)



***Source*:** Adapted from Pelegrin (2022).

To accomplish the considerable distances of the commercial expeditions between the coast and the interior of the colony, it was necessary to make several rest stops, or landings, where travelers and their animals could rest and eat (Rosseto, 2006). This article focuses on Campinas, which was initially occupied by families who founded a "rest stop" on the route connecting the towns of Jundiaí and Mogi-Mirim during the early 18th century. The expansion of this road, undertaken at the beginning of the 18th century to explore the auriferous regions, gave rise to the emergence of landings, *sesmarias*[4], and rural properties. This period marked the establishment of Campinas: in 1774 it was formally recognized as a distinct parish within the town of Jundiaí. It subsequently achieved town status in 1797, effectively separating from Jundiaí (Eisenberg, 1989; Alfonso, 2018).

Until the early 1790s, despite the availability of extensive land in Campinas, the region remained relatively unoccupied by settlers engaged in agricultural production. In 1774, the population was composed of only 388 free individuals and 59 properties. By 1779, the population had increased to 445 individuals, residing in 66 households. By 1790, the population had reached 1,138 individuals and 177 households. In addition to land ownership, this society's primary source of capital was derived from the ownership of slaves. In addition to serving as a source of

[4] A *sesmaria* was a land concession provided by the Portuguese Empire to encourage the cultivation and occupation of territory, particularly during the colonization of Brazil (Nozoe, 2008).

labor for their owners, slaves represented a significant financial asset for certain individuals. In 1774, the number of captives listed in the parish was 87. By 1790, this figure had risen to 219, indicating a growth rate below that observed for the free population. The average age of captives within the 'prime working age'[5] was notably elevated relative to the period's standards, exhibiting a gradual decline following 1774. Nevertheless, the average age of slaves remained at approximately 27 in 1790 (Nicolette; Alfonso, 2018).

The exploitation of Campinas lands underwent significant transformations from the 1790s onwards, with the rapid establishment of sugarcane plantations. This phenomenon was motivated by three key factors: (i) the interest of large-scale merchants in converting capital acquired in trade into land and slaves; (ii) the significant increase in the price of sugar in European trade following the Saint-Domingue Slave Revolution in 1791; and (iii) the quality of the land in Campinas, which was conducive to the cultivation of sugarcane (Petrone, 1968; Eisenberg, 1989). Consequently, during the 1790s, the parish experienced a significant influx of migrants, resulting in a notable increase in population to 3,699 individuals by 1800, distributed into 453 households (*Arquivo Público do Estado de São Paulo*, Nominative List of Inhabitants, 1790, 1799, 1800). The number of enslaved individuals in Campinas increased from 219 in 1790 to 821 in 1799, representing a 375% growth rate. The number of free or freed people also experienced an increase, although at a lower rate. In 1790, there were 1,138 individuals, while nine years later this figure had risen to 2,078, representing an 82% increase. Moreover, it can be demonstrated that the concentration of slave labor changed significantly between 1790 and 1818, with a notable shift towards a centralized ownership structure comprising more than 19 enslaved individuals per property. Additionally, the average age of slaves within the 'prime working age' in Campinas decreased significantly, reaching 23 years in 1818 (APESP, Nominative List of Inhabitants, Campinas, 1790-1818). This indicates that slave owners in Campinas were increasingly dependent on the transatlantic slave market.

It should be noted that in 1793, there were only three limited-scale sugarcane plantations in Campinas. However, by 1818, a period of less than 30 years, there were 93 sugarcane plantations, representing a significant expansion of the agricultural landscape of Campinas (APESP, Nominative List of Inhabitants, Campinas, 1818; *Arquivo Histórico Ultramarino*, 1793-1798). The agrarian transformation of Campinas was of a considerable magnitude following the expansion of the sugar complex. This progress, as Petrone (1968) observed, was unparalleled in its scale and magnitude, even when compared to the traditional sugar economy of Itu. During the expansion of the capitalist world-economy, the "commodity frontiers were profoundly transformative of land and labor because they were often highly *industrial*" (Moore, 2000: 412). This phenomenon occurred while the village of Campinas was assimilated by the sugar frontier. This scenario occurred with remarkable swiftness between the 18th and 19th centuries, accompanied by a considerable influx of families intent on establishing sugarcane plantations.

[5] In this article, the 'prime working age' is defined as the period spanning from 15 to 49 years old. Accordingly, only enslaved individuals within this specified age range were included in the calculation of the average age.

This process was marked by the accelerated occupation of the land, as well as a significant rise in the number of enslaved Africans forced to work on these plantations (Nicolette, 2022).

A Critical Examination of Land Structure in Campinas: An Analysis of the 1818 *Inventário de Bens Rústicos* (IBR)[6]

In consequence of the Royal Decree of October 21, 1817, a land census was made between the years 1818 and 1819. This decree was proclaimed by D. João VI, then King of the United Kingdom of Portugal, Brazil, and the Algarves, and addressed to the Secretary of State for Foreign Affairs and War. It required all captaincies in Brazil to conduct a census of rural properties, detailing the provenance of these lands, and specifying whether they had been obtained through *sesmarias*, possessions, direct purchase, or inheritance. Furthermore, the census had to include the following information:

> (1) The ecclesiastical parish to which it belongs; (2) the name of the current owner; (3) the name of the property; (4) the size of the property; (5) whether or not the property is in use for agricultural purposes; (6) the number of slaves employed on the property is also to be indicated; (7) the residence of the owner is to be stated. It is sufficient for the commanders of the respective districts or the officers employed in this guard to inform the owner of the land in question, without requiring the presentation of titles or documents (Aguirra, 1935: 57-64, my translation).

In Portuguese America, a variety of land appropriation methods were observed, including the granting of *sesmarias*, direct purchase, and occupation. Each of these approaches presented unique challenges in terms of ensuring compliance with the legal and regulatory framework that was in place at the time (Mota, 2008). An example of land appropriation occurred when an individual claimed an area as their own, often by engaging in agricultural activities, without having purchased the land or received a *sesmaria* (Nozoe, 2008). This practice was common among small farmers who cultivated subsistence crops but had insufficient capital to purchase land or did not fulfill the requirements to apply for their own portion of land, which was typically limited in size. Another significant issue in land appropriation was the manipulation of the fundamental requirements for confirming donations. Furthermore, there were attempts to increase the original size of the lands conceded by the Portuguese Crown (Nozoe, 2008).

Some land appropriation practices that violated current legislation gained momentum in the late 18th century and throughout the 19th century. This growth was motivated by the expansion of agriculture and the unsustainable exploitation of natural resources by the slave plantations, which often resulted in the degradation of land and a permanent necessity to explore new territories (Petrone, 1968; Motta, 1998). The Campinas region exemplified this phenomenon,

[6] This is part of a broader discussion taken place in my master's. To read it in more detail, see Nicolette (2022).

exhibiting patterns of unequal land appropriation during the 18th and 19th centuries. The granting of *sesmarias* gave rise to numerous disputes between sesmeiros (owners of *sesmarias*) and non-owners (squatters) in Campinas (Fraccaro, 2018). In this context, the 1818 IBR had two main objectives. The first was to establish whether the minimum conditions for the continuity of *sesmarias* concessions were being maintained. The second one was to develop a more comprehensive knowledge of the distribution and dimensions of properties and agricultural borders, as an initial step to the implementation of strategies for the more extensive exploitation of land resources (Canabrava, 1972).

Although the measurements of the properties presented in the 1818 *Inventário de Bens Rústicos* should be interpreted as approximate estimates rather than precise measurements, they demonstrate a remarkable similarity with the properties of the time, assuming a mainly declaratory character (Canabrava, 1972). In other words, the landowners were not obliged to present documentation attesting to the acquisition of the lands. While the 1818 land registry was not regarded as definitive proof of ownership, it is crucial to acknowledge that "it represented a form of legitimization, conferring a degree of legal recognition upon the various modes of occupation or possession" (Canabrava, 1972: 79, my translation).

The royal decree signed by D. João VI was very precise in defining the characteristics to be collected for each property. However, the documentation at the end of the census revealed many discrepancies, mainly caused by the lack of explicit instructions on data formatting (Nozoe, 2008). The variation in records resulted in documents with different levels of detail. In Itu, for example, there was a detailed description of each type of agricultural commodity present in the properties, as well as the number of slaves employed. In Campinas, on the other hand, the records only indicated whether the land was cultivated or not. The properties were measured in two dimensions: *testada* (front) and *sertão* (length). The "front" referred to the measurement of the side facing the access route, whether a road or a river, while the "length" corresponded to the land that extended perpendicular to the front.

It is also important to emphasize that the 1818 *Inventário de Bens Rústicos*, which documented 289 rural properties in Campinas, provides a representative sample of the land area in the town of Campinas during that period. Since the 19th century, these lands have been subdivided into five additional municipalities. These include the cities of Americana, Cosmópolis, Paulínia, Sumaré, and Valinhos. As reported by the IBGE (2010), the combined area of the five municipalities that separate from Campinas was 1,523.9 km². The total area of Campinas in 1818, according to the IBR, was 1.232,7 km². Considering potential omissions and the limitations of measurement procedures, as well as the inclusion of urban areas and other unoccupied territories, the survey conducted at the beginning of the 19th century appears to be a highly representative illustration of the region's land extent[7].

The land structure of the Captaincy of São Paulo in 1818 has been extensively studied by different historians, who have emphasized the extreme inequality of land ownership, with high

[7] The areas of each city were as follows: Americana (133.912 km²); Campinas (794.571 km²); Cosmópolis (154.665 km²); Paulínia (138.777 km²); Sumaré (153.466 km²); Valinhos (148.538 km²).

rates of concentration in different regions of São Paulo. A total of 9,435 rural properties were identified in the 1818 Captaincy, divided by Canabrava (1972) into seven distinct regions: Metropolitan São Paulo, Periphery of Metropolitan São Paulo, Paraíba Valley, Central-North Coast, South Coast, Ranching Region, and Sugar Region. The villages of Itu, Porto Feliz and Campinas (all situated within the Sugar Region) followed different trajectories of land exploration. Itu, which was occupied since the second half of the 17th century, contrasts with Campinas, which began to be populated throughout the 18th century but did not experience significant growth until the beginning of the 19th century. Porto Feliz, on the other hand, was a district of Itu until 1797, when it became independent as a result of its sugar production. Together, the three villages represented approximately 99% of São Paulo's sugar exports in 1818, reflecting their importance in the sugarcane sector of São Paulo (Canabrava, 1972). The statistical data of rural properties (Table 1) show the inequality between the area and the number of properties in these villages, with Porto Feliz having an average of 190.4 hectares per property, in contrast to Itu (463.9 ha) and Campinas (427 ha). In conclusion, although Porto Feliz had a smaller area than its neighbors, its properties were of relatively similar size.

Table 1. Land ownership statistical indicators of Campinas, Itu, and Porto Feliz (1818)

Indicators	Campinas	Itu	Porto Feliz
Total of properties	289	362	439
Total area (ha)	123.424	167.939	83.613
Average size (ha)	427	463,9	190,4
Standard deviation	463,5	2.254,20	444
Gini index	0,71	0,77	0,7

***Source*:** Arquivo Público do Estado de São Paulo (APESP), Inventário dos Bens Rústicos (IBR), Village of São Carlos (Campinas), 1818; Nozoe, 2008.

An analysis of land ownership in the three main sugar-producing towns of the Captaincy of São Paulo in the 19th century reveals a discrepancy between the standard deviation and the average size of the properties. In Itu, as Nozoe notes (Table 1), this discrepancy makes the average size of the properties less representative of the local land tenure reality. A high standard deviation indicates great variation between properties, meaning the average does not reflect most cases. In Porto Feliz and especially in Campinas, the data are more homogeneous, making the average 427 hectares more representative. However, according to the Gini index[8], all three villages

[8] Following Câmara (1949), the Gini Index must be classified according to the following scale: a) 0,100 or less: zero concentration; b) 0,101 to 0,250: low concentration; c) 0,251 a 0,500: low to medium concentration; d) 0,501 a 0,700: medium to high concentration; e) 0,701 a 0,900: high to very high concentration; f) 0,901 a 1,000: very high to absolute concentration.

showed significant inequalities in land ownership, which showed a medium to high concentration of land in Porto Feliz and a high to very high concentration in Campinas and Itu.

We observed that a higher number of registered properties were documented in 1818 in regions dedicated to sugar production, including Itu and Porto Feliz, where land occupation and the granting of *sesmarias* had occurred earlier in the 18th century, than in Campinas. This discrepancy occurs despite Porto Feliz and Itu having smaller areas than Campinas and the area of Itu not corresponding to a larger proportion of the total area. Two hypotheses can be proposed to explain these significant differences in land ownership among the sugar-producing villages of São Paulo, even though they all concentrate a considerable area of land in the control of a few owners.

The initial hypothesis to elucidate the previous question is based on the possibility of an inaccurate and incomplete census of properties, whereby some individuals who were considered landowners may have been omitted from the registry. The second hypothesis is related to the fact that there were areas of ancient occupation and land concentration, such as the villages of Itu and Porto Feliz. In these regions, due to the prolonged history of occupation, the lands were subjected to successive divisions over the generations through inheritance. In the early 19th century, this division process, along with the acquisition of lands by non-owners, contributed to an increase in the number of properties. In other words, many of the *sesmarias* in Campinas were only granted in the late 18th century, which suggests that many lands in Campinas had not yet been divided among heirs, since the initial owner still held possession. Consequently, the expansion of the sugar frontier not only engenders a profound transformation of agricultural landscapes through intensified production practices and resource allocation but also systematically reconfigures the dynamics of land ownership. These reconfigurations frequently manifest in the consolidation of property among a select group of landowners, thereby exacerbating inequalities and influencing local socio-economic structures (Moore, 2015).

While there was a lower concentration of land ownership in Campinas than in Itu, the former was not without extreme inequalities. As illustrated in Table 2, the 5% largest landowners exercised control over 41.8% of the total land area in Campinas. This group of 19 properties, all owned by 14 individuals, constituted a significant concentration of land ownership in the region. Nozoe notes that the 5% largest landowners were distributed across the six regions of São Paulo, with a concentration of 42.3% in the Periphery of Metropolitan São Paulo and an impressive 90.2% in the Ranching zone, while in the sugar region, they controlled 63.3% of the lands.

A detailed examination of Table 2 reveals two prominent characteristics of the largest landowners. Firstly, except for Ana de Arruda Campos and Rita de Camargo Penteado, all of the owners in question were male. Notwithstanding the division of assets these women received when their husbands died, these women retained ownership of the main lands and properties, as evidenced by historical documentation. Both women had recently become widowed. Ana had been the widow of Joaquim Pedroso de Barros since 1815, while Rita had been the widow of Antônio de Camargo Penteado since 1812. As evidenced by post-mortem inventories, both women inherited a portion of their respective husbands' land and sugarcane plantations. (Centro de Memória da Unicamp, *Inventário post-mortem* Joaquim, Pedroso de Barros, *Processo* 386;

Inventário post-mortem, Antônio de Camargo Penteado, *Processo* 280). The second main characteristic of the large landowners of Campinas is the correlation between the possession of large properties and the presence of at least one sugar plantation. Of the 14 largest landowners, only Capitão José Pedroso da Silva and Brigadeiro José Joaquim da Costa Gavião did not have production units on their lands. Their names do not appear in the lists of nominal inhabitants of the village (APESP, Nominative List of Inhabitants, Campinas, 1790-1818), which indicates the absence of productive exploitation of their properties. Could it be argued that Costa Gavião and José Pedro did not use their land for agricultural purposes? Considering the nominal lists of Campinas, it can be assumed that they did not exploit such large areas. These two cases could bring to light a case of speculation with rural properties, a phenomenon that was not allowed by the legislation in force, which required the use of the land for agricultural or ranching purposes (Nozoe, 2008).

Table 2. The largest landowners in Campinas (1818)

Landowner's name	Property name	Property area (ha)	Owner's Total Area (ha)	Slaves
Brigadeiro José Joaquim da Costa Gavião	Engenho da Conceição	-	9.194	7
Nicolau Gonçalves da Silva	Barra	-	7.986	26
Francisco Pinto Ferraz	Mato dentro	3.267	4.901	51
	Cachoeira	1.634		15
Alexandre Barbosa de Almeida	Cachoeira	-	4.901	47
Joaquim Ferreira da Silva	Ribeirão de Joaquim	-	4.901	35
Antônio da Silva Leme	Pouso Alegre	-	3.739	47
Brigadeiro Luís Antônio de Sousa Queirós	Atibaia	680	3.402	40
	Tapera	1.089		59
	Santo Antônio	272		30
	Monjolinho	272		60
	Quilombo	1.089		40
Inácio Caetano Leme	-	272	2.615	21
	Duas pontes	2.342		21
José Rodrigues Ferraz	-	-	2.575	55
Ana de Arruda Campos	Ponte alta	-	2.450	36
Rita de Camargo Penteado	Monte alegre	-	2.450	20
Manuel Teixeira Vilela	Boa vista	605	2.347	26
	Invernada	1.742		3
Francisco Antônio de Sousa Queirós	Morro Grande	-	2.178	83
José Pedroso da Silva	Barra	-	2.178	7

Source: APESP, IBR, Village of São Carlos (Campinas), 1818.

Although not predominant, we observed the phenomenon of a second property per owner in the Campinas land area, especially among the 5% of the largest landowners. Of the seven individuals who owned at least a second agricultural property listed in the *Inventário dos Bens Rústicos*, four belong to this group. Brigadeiro Luís Antônio was a large merchant, probably the richest man in the Captaincy of São Paulo in 1818, and he did not lived in any of his properties in Campinas, but in a large house in the city of São Paulo (Nicolette, 2024). He was the only one who had three or more properties in Campinas, a total of five (each of them had a distinct sugar mill). In this case, it is necessary to note that the Brigadeiro Luis Antônio would not figure among the largest landowners in Campinas if his properties were considered individually, since his two largest, Tapera and Quilombo, totaled 1,089 hectares (Table 2). Even if these lands were contiguous, they could have had separate titles or been listed separately in the census because of the different production units since each had at least one sugar plantation.

In her study of Campinas, Fraccaro (2008) identifies a correlation between the ownership of captives and the size of the property in question. The author posits that the relationship between capital and land is inextricably linked. The proportion of landowners in the IBR who did not own any slaves was approximately 50%. However, they owned less than 20% of all registered land. Furthermore, as slavery expanded in Campinas during the 19th century, Fraccaro (2018) observed that the increase in the number of landowners with larger areas of land was notable. To analyze the land structure of Campinas, it is necessary to investigate land ownership based on a classification of property size. This can be accomplished by organizing the properties into categories or surface size range that are capable of establishing a hierarchy of possession. We decided to use the classification of rural properties by surface size range (*Faixa de Tamanho de Superfície*), as devised by Moreno (2022). This classification was formulated essentially with a focus on the socio-economic profile of rural landowners. By cross-referencing the information available in the Inventário dos Bens Rústicos (1819) with the Nominative List of Inhabitants of Bananal (1817), São Paulo, the author listed a number of characteristics of rural properties, including "1) the area of the rural property; 2) the existence (or not) of slaves and the number of slaves in the possession of each owner; 3) the participation (or not) of family labour in agricultural activities; 4) the main occupation of the owner (type and volume of production); 5) the diversity (or not) of productive activities; 6) the life cycle (age) of the owner" (Moreno, 2022: 64, my translation). The final classification of the properties was divided by Moreno into six ranges: (a) 19 bushels or less; (b) 20 to 47 bushels; (c) 48 to 99 bushels; (d) 100 to 235 bushels; (e) 236 to 505 bushels; and (f) above 506 bushels.

To facilitate reading and comparison with other academic research, we decided that this paper would exclusively utilize the metric system. This required the conversion of bushels to hectares[9]. The method is straightforward: each bushel was multiplied by 4.84 to be turned into hectares. The resulting numbers were not all integers; thus, rounding to the nearest whole number was necessary. To exemplify, the initial category was transformed into 91.96 hectares, which was rounded up to encompass properties with less than 92 hectares. We decided that the

[9] The measurement of one bushel is 48,400 m² or 4.84 ha.

ranges used here would be as follows: (a) 92 hectares or less; (b) 93 to 227 hectares; (c) 228 to 479 hectares; (d) 480 to 1,137 hectares; (e) 1,138 to 2,444 hectares; and (f) above 2,445 hectares.[10] Table 3 indicates the structure of Campinas properties by surface size range (FTS).

Table 3. Classification of properties by Surface Size Range (FTS), Campinas (1818)

Categories	**Properties**		**Area (ha)**		**Average area (ha)**
FTS (in hectares)	N	%	N	%	N
(a) Below 92	122	42,2	4.801	3,9	39
(b) 93 to 227	45	15,5	6.374	5,2	142
(c) 228 to 479	54	18,7	16.058	13,1	297
(d) 480 to 1.137	50	17,3	37.466	30,8	748
(e) 1.138 to 2.444	11	3,8	20.456	16,8	1.860
(f) Above 2.445	7	2,4	36.521	30	5.223
Total	289	100	121.716	100	421

Source: APESP, IBR, Village of São Carlos (Campinas), 1818.

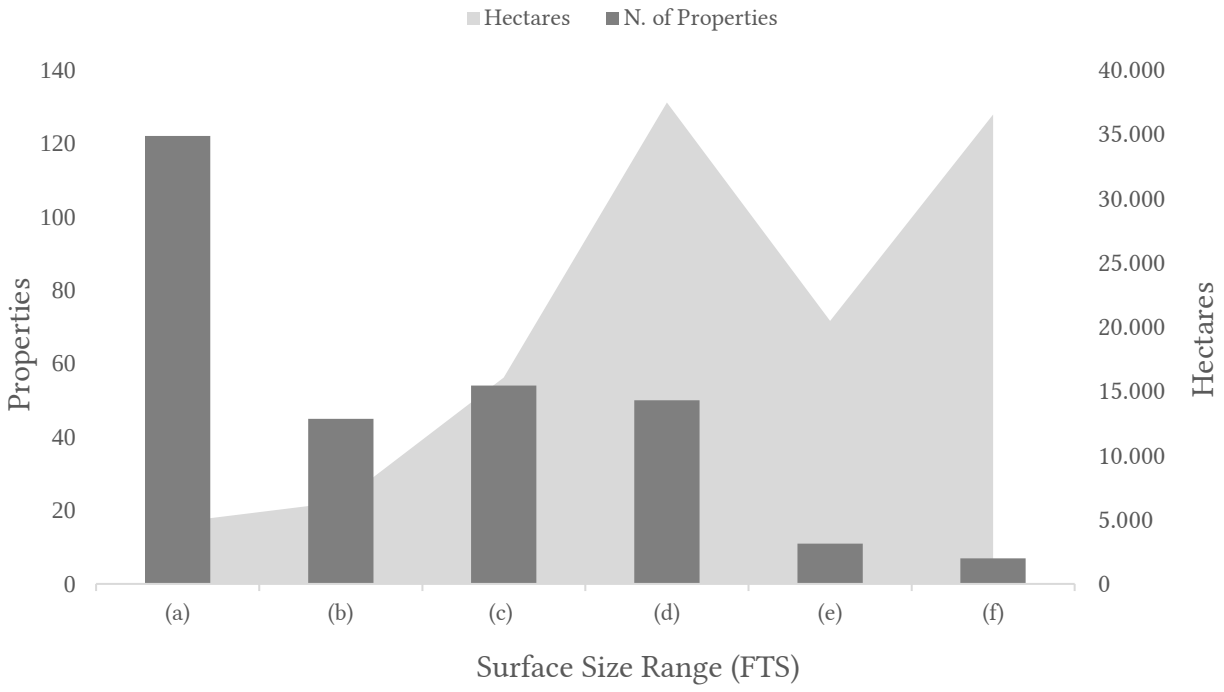
As is evident from Table 3, the distribution of properties across the six ranges reveals that more than half (57.5%) are situated in the first two ranges (a) and (b), mainly in the first range, with properties of less than 92 hectares. These properties are considerably smaller than the village average of 427 hectares, making them poorly qualified for agricultural production. Although they represent the majority of the land structure in Campinas, these ranges account for only 9,1% of the total territory.

The subsequent ranges, despite exhibiting a concentration of land ownership in a limited number of properties, presented a different configuration than initially hypothesized, which was to identify the owners of the last range with the largest land ownership. In contrast to the results observed in the Bananal district, which is located in the Paraíba Valley region of São Paulo, Moreno (2022) found an increase in land concentration with increasing land area. This phenomenon was not observed in Campinas. Range (d), consisting of properties with an area between 480 and 1,137 hectares, occupied the largest area, comprising 37,466 hectares (30.8%) of the total. This was followed by those properties above 2,445 hectares, which encompassed 36,521 hectares (30%). However, in light of the possibility of imprecise data in the *Inventário de Bens Rústicos* of Campinas, it can be postulated that the properties of these areas (ranges d and f) are in control of equivalent parcels of land, which constitute 60.8% despite representing only 19.7% of the properties. This phenomenon is corroborated by the analysis of Graph 1.

[10] As indicated by Nozoe, a *légua* of *sesmaria* was equivalent to 3,000 *braças*, with each *braça* measuring 2.2 meters. These dimensions were utilized for conversion in the present article.

The data of Graph 1 elucidates the discrepancy between the number of properties per FTS and the total area they occupy, revealing two peaks in ranges (d) and (f). In part, this phenomenon can be attributed to the relatively small number of properties observed in range (e), where the expected area was greater than that of the previous range. However, Moreno's (2022) definition of the range limit at 1,137 hectares is consistent with one of the most prevalent property sizes observed in the village, measuring 1,089 hectares. This indicates that 30% of the properties in range (d), or 43.6% of the total area, are situated at the margin of transition to the subsequent band, concentrated in only seven properties. The prevalence of properties in the Campinas land registry with a size of 1,089 hectares can be attributed to some factors. Firstly, 1,089 hectares is precisely equivalent to one-quarter of a square league, the most common size of *sesmaria* granted in the region. A square league was defined as one league in front and one league in depth, resulting in a total area of 4,353 hectares. A second significant factor is that *sesmarias* were frequently apportioned to four or six individuals. However, it remains unclear whether these lands were distributed equally or whether portions were sold to other individuals. As a consequence of the late and extensive distribution of *sesmarias* in Campinas during the late 18th century, numerous substantial landowners retained possession of their one-quarter league of land by 1818. Finally, the fragmentation of *sesmarias* became a prevalent means of land acquisition, facilitating the purchase of properties of this magnitude by individuals who were not *sesmeiros*, as evidenced by the case of Brigadeiro Luís Antônio, who owned two properties with 1,089 hectares each.

Graph 1. Area and number of properties by Surface Size Range (FTS), Campinas (1818)



Source: APESP, IBR, Village of São Carlos (Campinas), 1818.

In 1818, the land structure of Campinas was marked by inequality in land ownership, reflecting the reality of neighboring cities in São Paulo, such as Itu and Porto Feliz, as well as other sugar-producing areas in Brazil (Nozoe, 2008; Schwartz, 2011). An analysis of the distribution of property sizes reveals a notable concentration in areas ranging from 480 to 1,137 hectares. During the historical period under examination, Campinas was a region offering opportunities for impoverished families seeking to cultivate land for subsistence purposes. This is corroborated by the prevalence of modest properties situated within the indicated ranges (a) and (b), as previously discussed. The nominative lists of the village also corroborate this phenomenon, indicating that the majority of residences were not included in the IBR. This indicates that they did not possess the ownership of the land. These families, attracted by unoccupied land, engaged in agricultural labor on other individuals' properties or accepted wages in exchange for their labor.

In light of the unequal land ownership structure in Campinas during the development of the sugar economy, it is crucial to examine the land ownership of sugarcane farmers. This topic has been largely understudied in the historiography of sugarcane in São Paulo. The majority of research in this area has focused on the Northeast of Brazil, as evidenced by the works of Ferlini (1968) and Barickman (2003). These limitations are a consequence of the inherent constraints of the historical sources utilized, such as post-mortem inventories and land sales contracts. Notably, these documents frequently cite the existence of land properties with imprecise physical landmarks, such as rivers, trees, and hills. Table 4, based on the IBR of 1818, reveals that sugarcane plantations constituted a significant component of land concentration, occupying 58.8% of the rural area of Campinas (72,632 hectares). The six largest sugarcane plantations, each exceeding 2,506 hectares, collectively encompassed 37.7% of this total. The dominance of more than half of the agricultural landscape by 72 sugar farms in Campinas demonstrates the extreme inequality in the distribution of land tenure in the process of consolidation of the sugar frontier.

Table 4. Classification of sugarcane plantations by Surface Size Range (FTS), Campinas (1818)

Categories	**Properties**		**Area (ha)**		**Average Area (ha)**
FTS (in hectares)	N	%	N	%	N
(a) Below 92	5	6,9	240	0,3	48
(b) 93 to 227	4	5,6	630	0,9	158
(c) 228 to 479	22	30,6	6.995	9,6	318
(d) 480 to 1.137	26	36,1	19.622	27,1	755
(e) 1.138 to 2.444	9	12,5	17.629	24,4	1.975
(f) Above 2.445	6	8,3	27.368	37,7	5.223
Total	72	100	72.632	100	1.008

Source: APESP, IBR, Village of São Carlos (Campinas), 1818.

Table 4 demonstrates the remarkable concentration of land ownership among sugar farms in Campinas. In 1818, only nine properties with an area of below 227 hectares were involved in the production of sugar, while the larger "sugarcane giants" dominated the region. A total of 72 sugar farms were responsible for controlling 58.8% of the land. The appropriation of land in Campinas, whether through *sesmarias*, purchases, or inheritance, during the early 19th century, was motivated by the need to meet the demands of the sugar economy. However, 41.2% of the land was held by two groups: those who did not utilize their land for agricultural purposes, such as Joaquim José da Costa Gavião, and small landowners who, although controlling a limited area, cultivated foodstuffs, primarily corn, for sale of surplus.

Therefore, despite the sugar mill owners' control over half of the village's area and their influence within the village's political bodies, they were unable to restrict the possession and use of land by other farmers at that historical moment. Nevertheless, it can be argued that the most prominent sugarcane planters exercised control over the most attractive lands and possessed the capacity to transform the landscape, largely as a result of their ownership of a considerable number of slaves (Nicolette, 2022). The concentration of ownership of more than half of the agricultural land in Campinas by 72 sugarcane plantations is an indication of the significant disparities in land distribution. This is consistent with the perspective that sugar production was a significant factor in reshaping the dynamics of land ownership, resulting to the concentration of land ownership in the hands of a few individuals while marginalizing impoverished agricultural workers.

Conclusion

This article examined the land structure of Campinas at the culmination of the sugarcane plantation period, illuminating a scenario characterized by inequality and land concentration. These attributes were largely influenced by the region's integration into the sugar frontier. The village of Campinas experienced a notable expansion of its sugarcane production, motivated by international demand and internal dynamics influencing land appropriation and utilization. The analytical examination of the data indicated that the land structure of the region was predominantly characterized by a small number of extensive properties, particularly sugarcane plantations, in contrast to a considerable proportion of smaller lands belonging to farmers with limited resources. The expansion of sugar production not only intensified this concentration but also consolidated the economic and social power of a small number of large landowners.

Moore (2000; 2015) proposes that the commodity frontier is not merely a line of economic expansion; rather, it is a process of ecological and social transformation that gives rise to new dynamics of capital accumulation. In Campinas, the introduction of sugarcane cultivation and the formation of plantations with slave labor evidenced this transformation, as the natural environment was reconfigured to meet the needs of the global sugar market. Therefore, when considering the results of this study in light of the sugar frontier, it can be concluded that the

experience of Campinas in the early 19th century exemplifies the impact of global capitalist forces at the local level.

The objective of this paper was not to provide an exhaustive analysis of the land structure of Campinas; it was rather to initiate a discussion concerning the concept of the sugar frontier as proposed by Moore to study the expansion of the sugar economy in Brazil. Further research is required to obtain a deeper understanding of the expansion of the early modern world-economy into Latin American lands. It would be of interest to explore the dynamics of land expansion and sugar production in *Oeste Paulista* in comparison with other regions of Brazil and the Caribbean that also participated in the sugar frontier. Such comparisons could elucidate the nuances of regional responses to global sugar demand, as well as their social and economic implications. Furthermore, an interdisciplinary approach could facilitate a better understanding of the impact of ecological transformations on the quotidian lives of local populations, including slaves, free laborers, and small landowners, such an approach could also contribute to the examination of the crises associated with ecological transformation and social conflict.

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