

State's action in the production of the informal city: a spatial analysis in Florianópolis

A atuação estatal na produção da cidade informal:
análise espacial em Florianópolis

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Abstract

The thesis that the Brazilian state tolerates and encourages urban squatting as a response to its own inability to provide popular housing and to guarantee jobs that enable the acquisition of housing in the real estate market is tested in this article through the case study of Florianópolis. We studied irregularity and two indications of municipal action in its consolidation in Florianópolis: implementation of community facilities and issuance of construction permits. We found that construction permits are limited only by registration restrictions, not by the existence or not of land ownership, and that the municipality works actively in the production of health, education, and transport facilities, but not of leisure facilities in these areas.

Keywords: irregular occupations; informal urban settlement; informality; community facilities; construction permits.

Resumo

A tese de que o estado brasileiro tolera e fomenta as ocupações urbanas irregulares como resposta à sua própria incapacidade de prover habitação popular e de garantir empregos que permitam a aquisição de habitação no mercado imobiliário é testada neste artigo, por meio do estudo do caso de Florianópolis. Estudou-se a irregularidade no município e dois indicativos de atuação municipal na sua consolidação: implementação de equipamentos comunitários e emissão de alvarás de construção. Verificou-se que os alvarás de construção em ocupações irregulares são limitados somente por restrições registrais, mas não pela existência ou não de propriedade da terra e que o município trabalha ativamente na produção de equipamentos de saúde, educação e transporte, mas não de lazer nessas áreas.

Palavras-chave: ocupações irregulares; NUI; informalidade; equipamentos comunitários; alvarás de construção.



Introduction

The role of the state in social dynamics has been a subject of debate among scholars who employ different approaches to explain it. When this topic is approached through a structural-functionalistic logic, which views a subject of study as fulfilling specific functions, it fails to address the contradictions and social conflicts within it. A positivist approach, focusing solely on the collection of empirical data, might overlook important factors because it considers only measurable and observable elements. Viewing the state from a neoliberal perspective, which emphasizes the primacy of the market, also suffers from similar shortcomings. Therefore, it is crucial that the theoretical approach to the role of the state be dialectical in nature: considering contradictions and opposing forces and treating the subject of study as a synthesis or resolution of a conflict between a thesis and an antithesis.

Under this approach, Lefebvre is a renowned author: while he uses terms such as 'castration,' 'crushing,' and 'stable center of societies and spaces' (2006, p. 45) to describe the state's role in the production of urban space, he acknowledges that these characteristics are essential for opposing forces to thrive in cities (p. 46). Therefore, the state is fundamentally shaped by contradictions, and as one of the primary agents in urban space production, these contradictions are replicated within cities.

These contradictions are also present in the logic of the fractured city, a term employed by Maricato (2009) to describe an implicit rule in the production of Brazilian urban space:

the division between the formal city and the informal city, or what is understood as cities produced within and outside urban legal regulations, respectively. In Brazil, informality is pronounced: the Informal Urban Nuclei (IUN) research conducted by Ipea (2022) in 157 municipalities surrounding Brasília, Belo Horizonte, Recife, Porto Alegre, Marabá, and Juazeiro do Norte, revealed the existence of 4,968 informal urban nuclei, housing 1,486,725 households, which corresponds to 27% of the total households in these municipalities. The high price of formal urban land might be at the heart of the problem; Smolka and Mullahy (2010) demonstrate how the price of urbanized land in Latin America can be prohibitively high in general.

In the outskirts of many Latin American cities, the price of one square meter of urban land developed by private entities can range between US\$32 and US\$172. In absolute terms, these values resemble those found in the developed world, where per capita income is usually 7 to 10 times higher. Even a family living above the poverty line and saving 20% of its monthly income (US\$200) needs to save for 12 to 15 years to acquire a developed plot of 150 square meters." (p. 172)

Maricato (2003) argues that the Brazilian state tolerates urban informality as a response to its own inability to provide affordable housing and ensure jobs with incomes that allow for housing acquisition in the real estate market (p. 157). Gonçalves, Bautès, and Maneiro (2018) go further, stating that the state's responsibility in the production of informal cities is not limited to passively

tolerating their production or being ineffective in producing popular housing. They contend that the state actively participates in the production of informal cities:

The State is not absent from these spaces; quite the opposite, in many cases, it is one of the main actors in the development and consolidation of these areas. [...] If many authors argue that informality is a grassroots phenomenon, one cannot overlook its intrinsic connection with localized structures of power." (Ibid., p. 16)

This action can be exemplified by data from the Demographic Census (IBGE, 2010), according to which, in the reference year, 88% of the slum households in Brazil had access to the public water supply, and 56% were connected to the sewerage system, despite lacking formal construction and land tenure. The Brazilian state, therefore, is effective in providing infrastructure and facilities to irregular settlements; in this specific example, basic sanitation infrastructure. At the same time, it is ineffective when it comes to regulating land prices or ensuring decent wages for the majority of its population. Therefore, the Brazilian state's responsibility in the production and consolidation of irregular settlements can be understood as the result of the combination of four factors:

- 1) inefficiency in ensuring formal properties at affordable prices;
- 2) inefficiency in lifting a significant portion of its population out of poverty;
- 3) tolerance towards the emergence of irregular settlements;
- 4) provision of urban and community facilities and public services to irregular settlements.

Therefore, items 3 and 4 are the state's response to items 1 and 2. This article aims to explore some specific aspects of item 4 in irregular settlements, using the municipality of Florianópolis-SC as a case study.

Firstly, it is essential to remember that studying or even classifying a specific urban occupation as formal or informal is not a settled matter in theory. The IBGE (*ibid.*), for example, uses objective rules to classify informality. The institute employs the term 'subnormal cluster,' which is defined as 'a group consisting of at least 51 housing units (shacks, houses, etc.) lacking, for the most part, essential public services, occupying or having occupied until a recent period, land owned by others (public or private) and being generally arranged in a disorderly and/or dense manner' (p.8). For inclusion in this classification, the IBGE observes the fulfillment of two criteria:

- a) Illegal occupation of land, meaning construction on plots owned by others (public or private) at the present moment or in the recent past (acquisition of land ownership title ten years ago or less); and
- b) Having at least one of the following characteristics:
 - urbanization outside current standards – reflected by narrow and irregularly aligned roads, unequal-sized and shaped lots, and constructions not regularized by public authorities;
 - precariousness of essential public services, such as electricity, garbage collection, and water and sewage networks." (IBGE, 2010, p. 8)

The objective methodology adopted by IBGE can be condensed into the combination of the three variables it employs: (1) land

occupation (whether legal or illegal); (2) urbanization (whether within or outside current standards); and (3) essential public services (whether present or absent/precarious). The first variable is an indispensable condition, and at least one of the other two must be present. Chart 1 illustrates the logic and outcome of each possible combination of variables.

According to the table analysis, whenever the occupation is legal, IBGE categorizes it as formal. Illegal occupations, if they are within current urbanization standards and have access to essential public services, are also not classified as 'subnormal clusters' (SNC). It is evident, therefore, that the primary variable adopted by IBGE is land ownership.

Another perspective is that of Federal Law No. 13,465/2017, which deals with rural and urban land regularization and also references land ownership to classify informality when it defines IUN in its Article 11, II:

Article 11, II – informal urban nucleus: one that is clandestine, irregular, or in which it was not possible, by any means, to grant land titles to its occupants, even if the applicable legislation at the time of its establishment or regularization was followed." (Brazil, 2017)

It is noteworthy that compliance with urban planning regulations (applicable legislation at the time of its establishment) is explicitly mentioned as irrelevant in this classification. In this case, there is no reference to the inadequacy of public facilities or urban infrastructure.

In addition to these, the IUN Survey conducted by Ipea (2022) also addressed the criteria adopted for classification. According to this research, two dimensions were used: one called 'physical-territorial' and another called 'legal-land ownership' (p. 16). In the first dimension, the research notes that 'to be

Chart 1– Criteria used by IBGE to classify a particular occupation as a subnormal cluster or not

Land occupation	Urbanization	Essential public services	Can be understood as a subnormal cluster?
legal/formal	within current standards	existing	no
legal/formal	outside current standards	existing	no
legal/formal	within current standards	non-existent/precarious	no
legal/formal	outside current standards	non-existent/precarious	no
illegal/informal	within current standards	existing	no
illegal/informal	outside current standards	existing	yes
illegal/informal	within current standards	non-existent/precarious	yes
illegal/informal	outside current standards	non-existent/precarious	yes

Source: Own elaboration. Data: IBGE (2010).

considered IUN, it is sufficient that, in addition to being occupied by low-income population [...] the settlement in question has some degree of precariousness, whether related to urbanization, infrastructure, or buildings' (*ibid.*). The second dimension considers any land occupation 'without a title that provides occupants with secure tenure' as IUN (*ibid.*). Therefore, the first dimension of the IUN survey considers, in addition to land ownership or possession, the urbanization standard, the existence of public facilities, the population's income, and the precariousness of existing buildings. The second dimension focuses solely on land ownership or secure possession. Chart 2 summarizes the criteria used in the classification of urban informality studied so far.

In a comparative analysis with Ipea (2022), IBGE data for SNC can serve as an initial reference for gathering IUN data, while Ipea's

data (*ibid.*) are more comprehensive as they do not use the number of residential units as a parameter. Therefore, Ipea's data includes remote settlements with some housing or urban precariousness. It is also evident that formal land ownership or possession is the only criterion present in all the classifications studied. The presence of infrastructure and facilities and the urbanization standard are seen in two of the four classifications discussed. Population income and the precariousness of buildings are criteria explored only by the physical-territorial dimension of Ipea's IUN Survey (*ibid.*), while the number of residential units is a criterion adopted only by IBGE (2010).

It is noted that the criteria listed above are indicators of urban informality and, therefore, not necessarily its cause but can also be a consequence or reflection. For this study, any urban occupation without formal land

Chart 2 – Comparison between IBGE, Federal Law n. 13,465/2017, and Ipea regarding the criteria used to classify urban irregular occupations

Types od criteria	IBGE (SNC, 2010)	Federal Law 13465/2017	Physical-territorial dimension of the IUN Research (Ipea, 2022)	Legal-land dimension of the IUN Research (Ipea, 2022)
Formal land ownership or possession	yes	yes	yes	yes
Urban infrastructure and facilities	yes	no	yes	no
Population income	no	no	yes	no
Urbanization standard	yes	no	yes	no
Precariousness of buildings	no	no	yes	no
Number of residential units	yes	no	no	no

Source: Own compilation, in 2023.

ownership or possession is considered as IUN, regardless of the existence of infrastructure, the precariousness of buildings, or any other criteria adopted by the references studied. Therefore, the same methodology as the legal-land ownership dimension of the IUN Survey conducted by Ipea and Federal Law No. 13,465/2017 will be adopted. This choice is justified for two reasons:

- 1) because it is the most comprehensive, it allows for studying the state's involvement in different types of IUN; and
- 2) because it is the method adopted by the Municipal Government of Florianópolis (PMF), the delineation of IUN already exists in the municipal database (see Figure 6).

It is hypothetically assumed that if the state's intervention in IUN aims to consolidate them as a solution to its own inefficiency in providing formal properties at affordable prices (either due to inefficiency in producing affordable housing or in regulating land prices) and its failure to ensure wages that enable low-income population to acquire properties, then the state's intervention should always be geared towards consolidation or even promotion of the occupation, rather than creating more opportunities for the residing population. Pragmatically, such intervention must, therefore, be guided by two aspects:

- 1) ensure secure tenure to prevent the residing population from being easily evicted and, consequently, becoming the responsibility of the public authorities again; and
- 2) ensure essential services whenever possible to prevent the residing population from abandoning the occupation due to lack of basic amenities, which, as proposed in the first point, would then become the responsibility of the public authorities again.

To test the validity of this hypothesis, an attempt was made to understand the growth of informality in the municipality of Florianópolis through data analysis. Subsequently, a spatial analysis was conducted using the georeferenced vector database from the Municipal Government of Florianópolis. Spatial data regarding construction permits and existing urban and community facilities were sought, which would be overlaid on the map showing the IUN, as demonstrated in Figure 1. Within the state's intervention in the municipal territory, it was determined how much is allocated to the formal city and how much is shared with informality in each case.

Florianópolis

Historically, the first settlers in the municipality of Florianópolis date back to the pre-Columbian period. During the colonial period (until the 17th century), it served as a sheltered point in the Southern Atlantic, leading to the foundation of Nossa Senhora do Desterro (1660-1675). In the 18th century, it was utilized for defense and occupation of the Portuguese territory in southern Brazil, leading to the establishment of the village (1726) and the headquarters of the captaincy (1738), fortification, and the arrival of Azorean immigrants (1748-1756). During the Imperial era, urban expansion occurred beyond the boundaries of the founding nucleus, characterized by port, commercial, and administrative activities (1822-1889).

In the First Republic, Florianópolis strengthened its status as the state capital, marked by administrative and industrial

activities (1889-1950). During the Republic period, there was an increase in tertiary activities, including established administrative headquarters, commerce, and services. The construction of the Hercílio Luz Bridge in 1926 holds significant historical and cultural importance as it was the first road connection to Santa Catarina Island, marking a moment of profound political, economic, and social transformations in the state. Its inauguration changed circulation patterns, previously determined by navigation, bringing new urban vitality to the municipalities in the region and concentrating investments in the capital.

Thus, urban morphology in Florianópolis has ancient origins, with few restructurings over time. The dispersed and polycentric occupation is largely a reflection of the colonization initiated by Azorean families along

coastal paths and valleys on the island. They adapted to 'natural formations that created true geographical barriers to mobility' (Cocco, 2016, p. 50).

In the second half of the 20th century, IBGE data shows significant population growth in Florianópolis: the population reached the 100,000 mark in the early 1960s and increased considerably in the subsequent decades (Table 1). Between 1980 and 2022, the population more than tripled, with the largest increase occurring in the last decade, adding nearly 153,000 inhabitants (Figure 1).

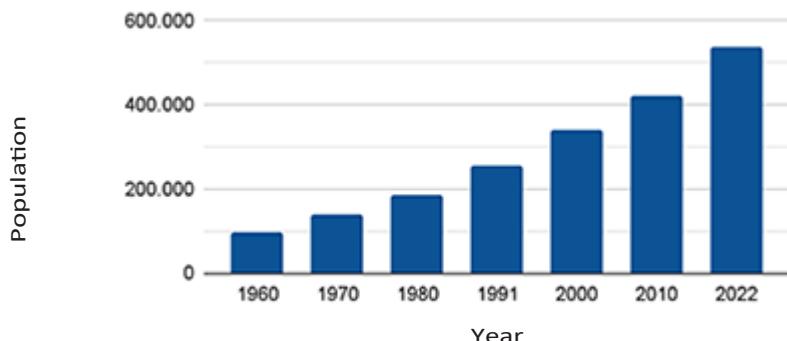
To understand the pattern of urban development, a district-level analysis will be employed based on the provisions outlined in the Law No. 736/2023 (Florianópolis-SC, 2023), which divides the territory into 18 districts, as depicted in Figure 2.

Table 1 – Population Growth in the Municipality of Florianópolis by Decade

Year	Resident population	Increase	Increase (%)
1960	97.827	–	–
1970	138.717	40.890	41,80
1980	187.871	49.154	35,43
1991	255.390	67.519	35,94
2000	342.315	86.925	34,04
2010	421.240	78.925	23,06
2022	537.213	115.973	27,53

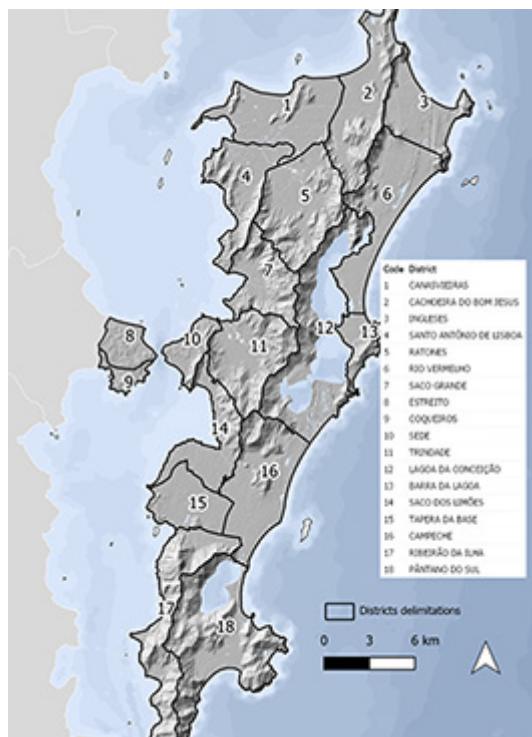
Source: IBGE (2022).

Figure 1 – Population growth in the municipality of Florianópolis by Decade



Source: IBGE (2022).

Figure 2 – Division into districts across the territory of the municipality of Florianópolis

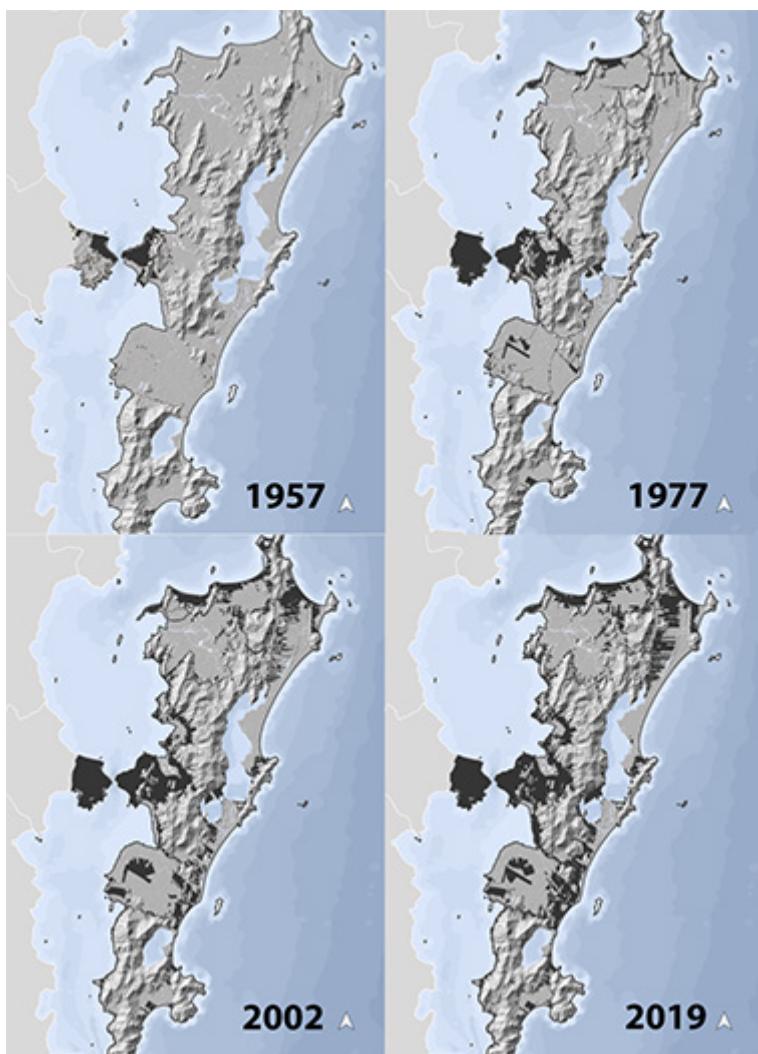


Source: Author's own work, 2023. Data: PMF (2023).

The maps depicted in Figure 3 reveal that such population growth occurred in a scattered manner according to data from the Municipality of Florianópolis (2023a). Until the 1960s, the population was mainly concentrated in the Estreito and Sede districts. In the

1970s, it expanded to the North region of the Island and the districts of Coqueiros, Lagoa da Conceição, and Trindade. The images for the years 2002 and 2019 (Figure 3) show that urban sprawl reached the districts of Tapera, Campeche, Ingleses, and Rio Vermelho last.

Figure 3 – Urban expansion over time

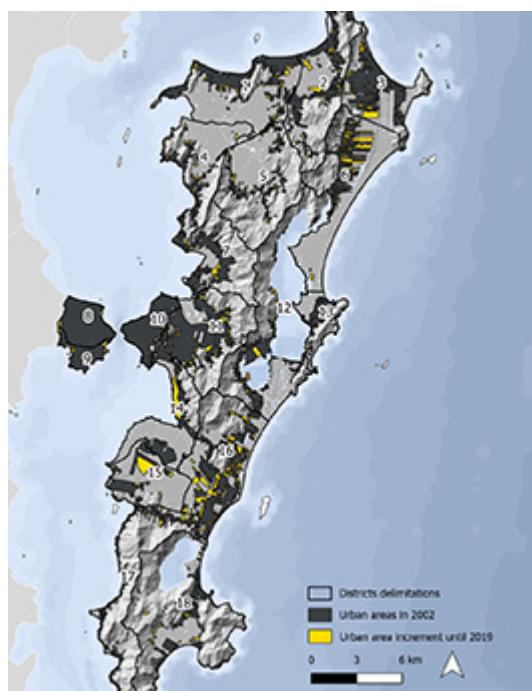


Source: Author's own work, 2023. Data: PMF (2023a).

In summary, the municipality of Florianópolis has experienced significant expansion of urban areas in recent decades, following a dispersed pattern with low density and limited integration of the road network. The measurement of urban expansion from 2002 to 2019 (Figure 4) revealed an increase of

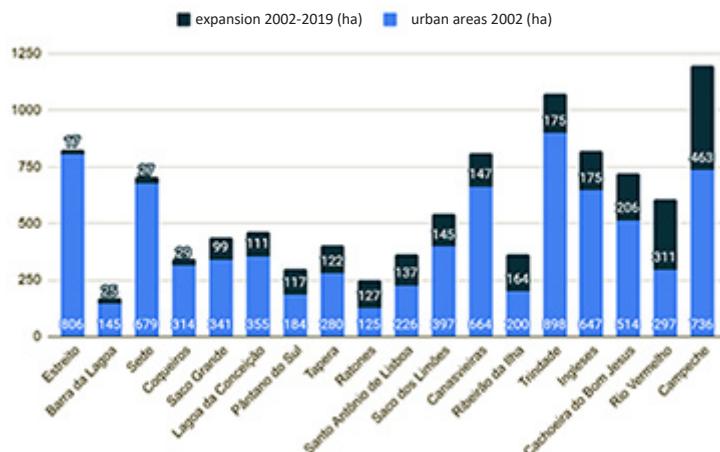
more than 33%, expanding from just over 7,800 hectares to 10,400 hectares. Horizontal growth occurred predominantly in less infrastructure areas, marked by informal settlements and situated farther away from well-established urban centers, as depicted in Figure 5.

Figure 4 – Comparison of Urban Expansion in 2002 and 2019 in Florianópolis



Source: Author's own work, 2023. Data: PMF (2023a).

Figure 5 – Urban expansion in Florianópolis
by district between 2002 and 2019



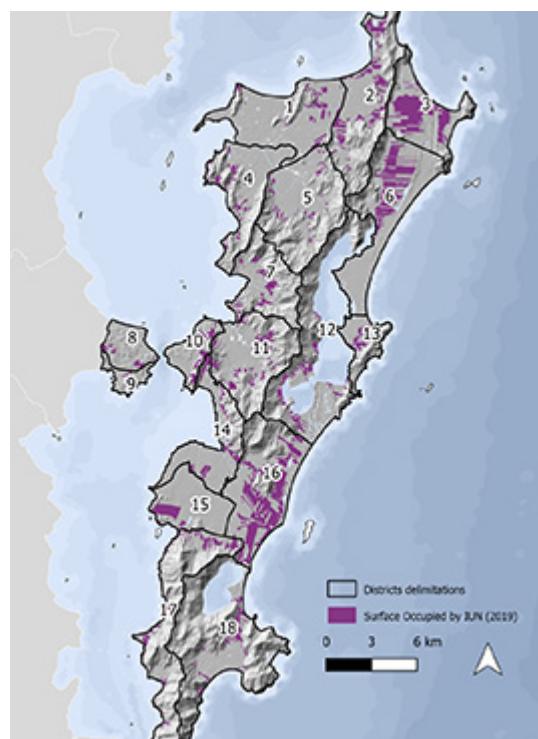
Source: Author's own work, 2023. Data: PMF (2023a).

Analysis of the state's role in Informal urban space production and consolidation in Florianópolis, SC

As a consequence of the significant population growth and extensive urban sprawl in Florianópolis, the prevalence of informality in land subdivisions arises, leading to a lack of complete infrastructure, public spaces, and central facilities in these areas. According to data from the Municipality of Florianópolis (2023b), in 2019, the municipal territory had an area of 3971.26 hectares occupied by Informal Urban Nuclei (IUN), spread across all 18 districts, as shown in Figure 6.

A brief visit to some of the IUN in the municipality of Florianópolis reveals the semblance of formality in their treatment by the public authorities: wide roads, road pavement, pedestrian sidewalks, water distribution, urban drainage, household waste collection, public lighting, electricity distribution, and traffic signs are some of the facilities that are practically standard in many IUNs in the municipality, as depicted in Figure 7. This semblance becomes even more apparent when analyzing certain municipal data: address and building numbering, property registration, taxation, and even the issuance of construction permits are services commonly provided to informal settlements in Florianópolis, SC.

Figure 6 – Surface occupied by Informal Urban Nuclei (IUN) in the municipality of Florianópolis and administrative districts delimitation



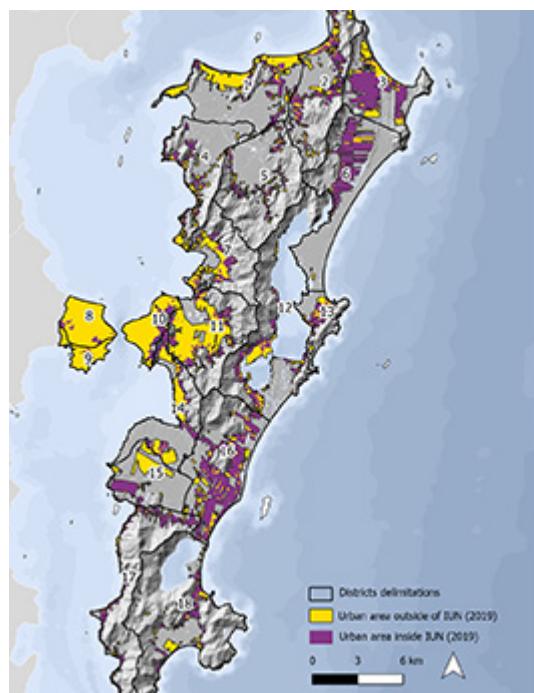
Source: Author's own work, 2023. Data: PMF (2023b).

Figure 7 – Tomás José Oliveira Lane, located in an Informal Urban Nucleus in the Rio Vermelho district, Florianópolis, SC



Source: Google Street View, 2023.

Figure 8 – Urban area outside of IUN and inside IUN in Florianópolis by district in the year 2019



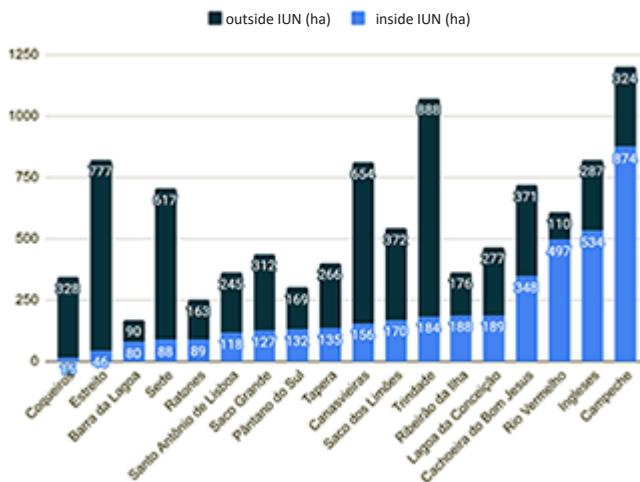
Source: Author's own work, 2023.

Informality is prevalent in the municipality, and in some districts, the majority of existing urbanization is in the informal sector. Figure 8 depicts the overlay of the municipal urban area with the coverage of informal urban nuclei, by district, in Florianópolis, SC. Following that, Figure 9 provides district-wise data on the total area (in hectares), the surface area of the urban patch (in hectares),

the surface area of the urban patch in relation to the district area (in percentage), the surface area of IUN (in hectares), and the surface area of IUN in relation to the urban patch of the district (in percentage).

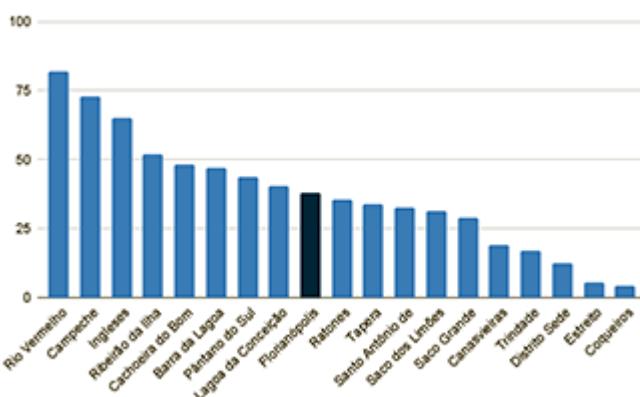
The Figure 10 displays the districts to scale, with the surface area of IUN in relation to the urban area within each of them.

Figure 9 – Urban area in IUN and outside IUN by district in Florianópolis in the year 2019



Source: Author's own work, 2023. Data: PMF (2023b)

Figure 10 – IUN in relation to the urbanized area, by district, in Florianópolis in the year 2019

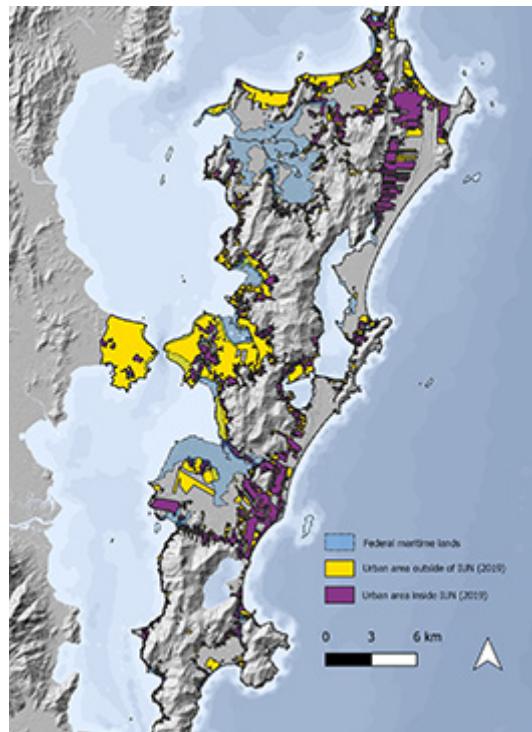


Source: Author's own work, 2023. Data: PMF (2023b)

The municipality's insular condition is important to highlight, with 97.23% of its territory being on an island according to IBGE. Figure 11 and Table 2 present the relationship between the urban area, federal maritime

areas, and IUN. It can be observed that just over 10% of the urbanized area is located on federal maritime lands, and the majority of these (82.45%) are outside the IUN.

Figure 11 – IUN in relation to the urban area and federal maritime lands in Florianópolis (2019)



Source: Author's own work, 2023. Data: PMF (2023b).

Table 2 – IUN in relation to the urban area and federal maritime lands in Florianópolis (2019)

	Area (ha)	(%)
Federal maritime lands (total)	5.657,09	–
Urbanized areas	10.399,16	100,00
IUN	3.971,26	35,43
Federal maritime lands in urbanized areas	1.067,67	10,27
Federal maritime lands in IUN	187,34	01,80

Source: Source: Author's own work, 2023. Data: PMF (2023b).

Therefore, despite the predominantly insular nature of the territory, there doesn't seem to be, at first analysis, a connection between public property ownership and informal settlements.

In 2019, informal settlements in Florianópolis represented more than 80% of the urban occupied area in the Rio Vermelho district, over 70% in Campeche, and more than 65% in Ingleses – areas that also experienced the largest increases in urban expansion in recent years, as observed in Figures 4 and 5. It can be assumed that horizontal urban expansion in Florianópolis mainly occurs informally. This observation is reinforced by the fact that the districts with higher levels of consolidation, where the urban area covers approximately 90% or more of their territory – Coqueiros, Estreito, and Sede – are also the three districts where the contribution of informal settlements to the urban area is lower.

To understand the role of the public entity in the production and consolidation of informal settlements, two aspects were analyzed for which data was available. The first aspect examined was the issuance of building permits in informal settlements. In a second phase, the implementation of community facilities such as education, health, leisure, and public transportation in the same areas was studied.

a) Building permits

The licensing of construction through the issuance of building permits is a treatment that is expected to be given only to formally approved lots. However, in the case of Florianópolis, it is also given to lots in the informal market, provided that the owner presents a declaration of possession, the model of which can be found on the website of the Municipal Secretariat of Housing and Urban Development (2023c) (Figure 12).

Figure 12 – Ownership declaration model required by the municipality for licensing of construction, in case of absence of formal property documents

DECLARAÇÃO

O Sr. [Nome], [Estado Civil],
carteira de identidade, nº [Número], emitida por [Município] de
[Profissão], com C.P.F. de nº [Número],
residente e domiciliado à [Endereço], na cidade de [Cidade], declara
para o fisco, que sou [Proprietário/possuidor]
de um terreno à [Endereço], nº [Número],
no bairro de [Bairro], pertencente à [Educação]
é ocupado para [Uso] com as seguintes características e conformações:
Área de _____ metros;
Frontal com _____ metros;
Fundos com _____ metros;
Lateral direita com _____ metros;
Lateral esquerda com _____ metros.
Nº de Vizinhança: [Listagem]

A presente declaração é expressão da verdade.
Florianópolis, _____ de _____ de 20____.

(Assinatura/proprietário)
Assinatura com firma reconhecida em cartório

Source: PMF (2023c).

For this research, we obtained the list of construction permits issued between 2002 and 2021 from the Municipal Department of Urban Development (Florianópolis 2023d) and the spatialized cadastral database from the Urban Planning Institute of Florianópolis (Ipuf, 2023). The permits were spatialized by directly matching the cadastral registration numbers listed in the permits with the

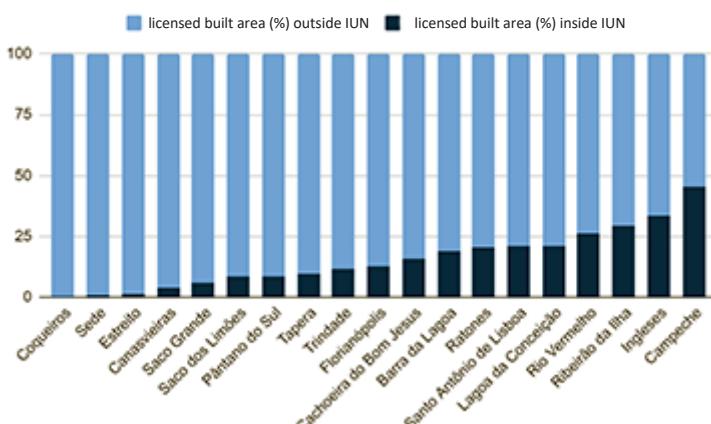
cadastral database. In cases where no match was found, geocoding was performed based on the addresses listed in the permits using the Google Maps platform. The data resulting from the spatial overlay of the permits with the informal urban areas are presented in Table 3 and Figure 13. The evolution of these permits over the years is shown in Figures 14 and 15.

Table 3 – Building permits issued by the municipality of Florianópolis between 2002 and 2021 inside and outside informal urban areas (IUN)

	Inside IUN	Outside IUN
Number of permits	4.872 (26,61%)	13.437 (73,39%)
Total licensed area	213 ha (12,92%)	1.436 ha (87,08%)
Average licensed area per constructio	475,98m ²	1.148,09m ²

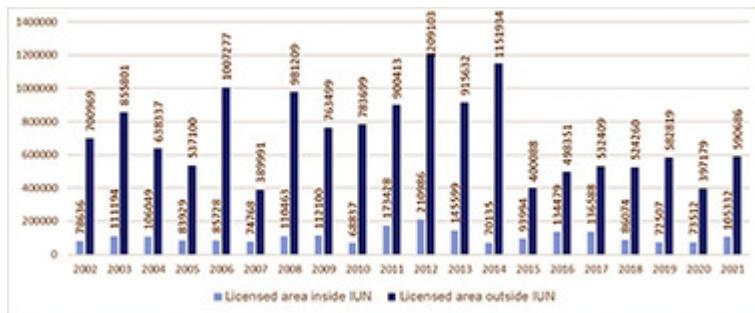
Source: Author's own work, 2023. Data: PMF (2023b), PMF (2023d).

Figure 13 – Percentage of licensed built area by the municipality of Florianópolis between 2002 and 2021 inside and outside the IUN by district



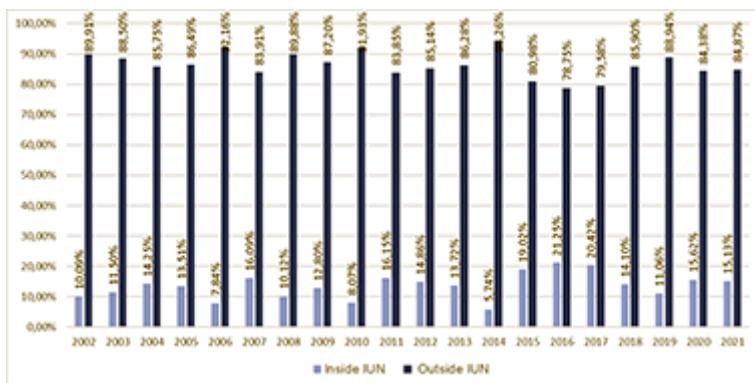
Source: author's own work, 2023. Data: PMF (2023b), PMF (2023d).

Figure 14 – Volume in square meters (SQM) licensed through building permits issued by the municipality of Florianópolis between the years 2002 and 2021 inside and outside the IUN



Source: author's own work, 2023. Data: PMF (2023b), PMH (2023d).

Figure 15 – Percentage of licensed construction through building permits issued by the municipality of Florianópolis between the years 2002 and 2021 inside and outside the IUN



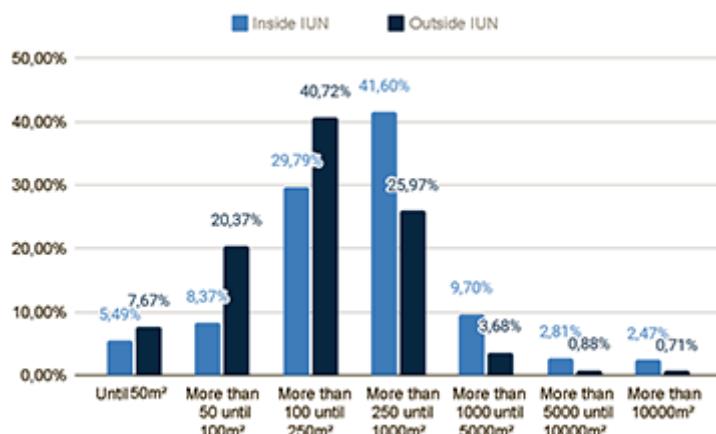
Source: author's own work, 2023. Data: PMF (2023b), PMF (2023d).

According to these data, between 2002 and 2021, one out of every four building permits issued by the municipality was for constructions in areas without urban regularization, and nearly 13% of the entire licensed construction volume during that period occurred in these areas. Data segregation by year revealed that this practice is consistent and recurrent over the last two decades: in almost every year studied, the licensed volume on irregular areas ranged between 7% and 20%, with no significant specific trends in any particular time frame.

The analysis of the size of buildings covered by construction permits in the municipality of Florianópolis (Figure 16), grouping permits issued for properties located

within Informal Urban Nuclei (NUI) and those issued for properties outside NUIs, reveals that among permits in informal areas, those up to 250m² are more prominent. In contrast, among permits in formal areas, those exceeding 250m² are more significant. The explanation for this could lie in the restrictions imposed by informality: properties without proper registration cannot be the subject of real estate incorporation and, consequently, financing. Therefore, construction costs must be borne directly by the owner, and the establishment of potential residential or commercial unit condominiums lacks legal basis. Consequently, the trend is for constructions to be single-family, and their built-up area is limited.

Figure 16 – Size of buildings (m²) covered by construction permits in Florianópolis, Santa Catarina – inside and outside IUN



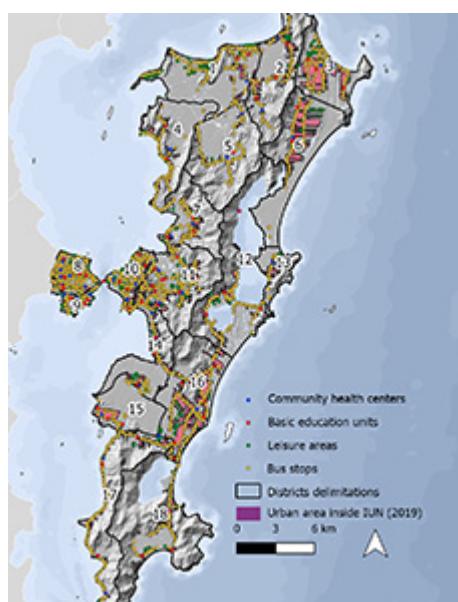
Source: author's own work, 2023. Data: PMF (2023b), PMF (2023d).

b) *Community and leisure facilities*

The analysis of the state's involvement in providing community and leisure urban facilities focused on four areas as a sample selection: education, health, leisure, and public transportation. For education, the location of all public municipal and state educational institutions was obtained from PMF (2023e), and only basic education units were selected as the sample. For health, only municipal health centers were sourced from PMF. In the leisure

areas, the location and polygonal boundaries of all consolidated public leisure areas – those equipped with leisure facilities – were identified. The available leisure area was calculated within each polygon and converted into a point, located at the centroid of each polygon. For public transportation, the locations of municipal bus stops were obtained from the municipality. In all four studies, equipment availability was verified by administrative district and for the IUN by administrative district, as shown in Figure 17.

Figure 17 – Distribution of community health centers, basic education units, and leisure facilities across the districts and Informal Urban Nuclei (NUIs) in Florianópolis, Santa Catarina



Source: author's own work, 2023. Data: PMF (2023b), PMF (2023e).

If the hypothesis posited, suggesting that the state's involvement in IUN aims to consolidate irregular occupations, is correct, then one would expect leisure facilities to be the least prevalent in NIUs. This is because their usage is neither daily like education and

transportation facilities, nor fundamental like healthcare facilities. The presence of leisure facilities does not have the same capacity to consolidate an occupation as the other types of facilities. The results presented in Figures 18 to 25 confirmed the expected hypothesis.

Figure 18 – Municipal health centers per district inside and outside IUN

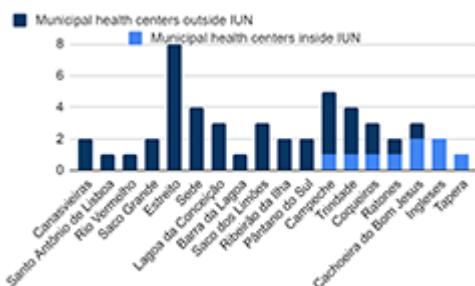


Figure 19 – Municipal health centers inside and outside IUN in Florianópolis

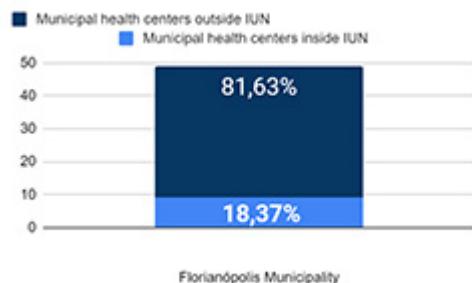


Figure 20 – Municipal and state basic education units per district inside and outside IUN in Florianópolis

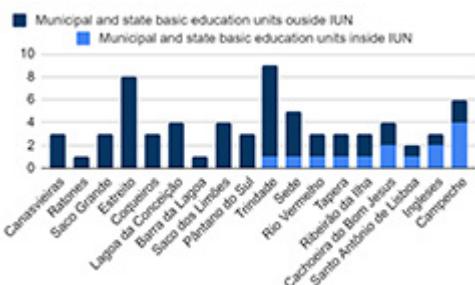


Figure 21 – Municipal and state basic education units inside and outside IUN in Florianópolis

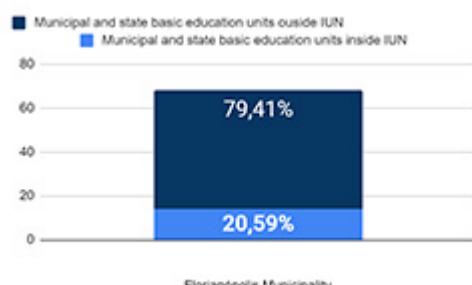


Figure 22 – Hectares of consolidated leisure area per district inside and outside IUN

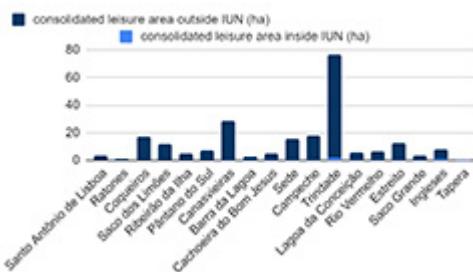


Figure 23 – Hectares of consolidated leisure area inside and outside IUN in Florianópolis

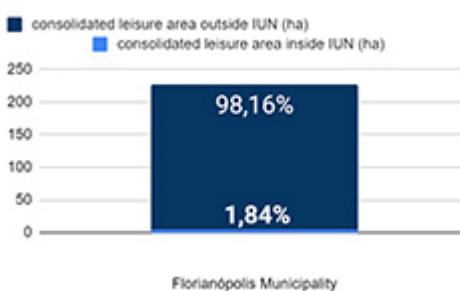


Figure 24 – Bus stops per district inside and outside IUN

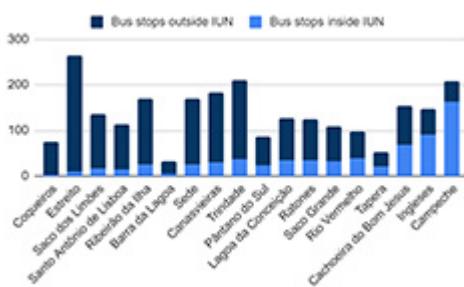
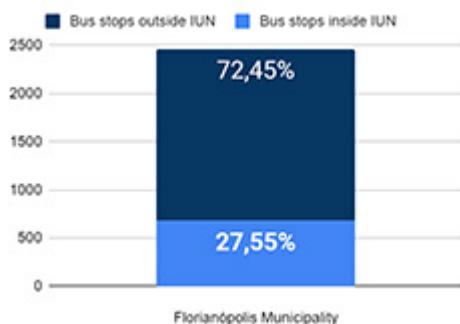


Figure 25 – Bus stops inside and outside IUN in Florianópolis



Source: author's own work, 2023. Data: PMF (2023b), PMF (2023e).

Conclusions and recommendations

From the analyses conducted, it is evident that the tolerance for informal occupation by the government varies non-uniformly, depending on the analyzed indicator and the territorial scope within which the IUN is located. Figure 26 illustrates the indicators analyzed at the municipal scale.

The large number of licensed constructions in IUN supports the hypothesis raised by the following aspects:

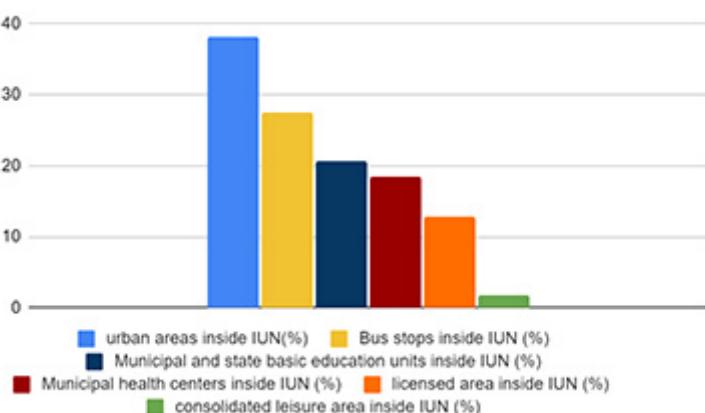
1) the licensing of a building is a very strong indication of ownership over the licensed land. Such ownership, even if

not formally converted into property, can provide some legal security against possible eviction actions;

2) the presence of a licensed building adds exchange value to the property and, therefore, contributes to preventing the existing occupation from being easily abandoned.

As observed, the restriction on licensing in NUI areas is much more linked to registration limitations than the lack of formal ownership. Although the percentage of licensing in NUI areas is small when compared to the percentages of bus stops, basic education, and basic health services, it is important to emphasize that this is the only service analyzed whose provision does not come from the state's initiative but from the irregular lot

Figure 26 – Urban area, bus stops, education, health, permits, and leisure areas inside IUN in Florianópolis



Source: author's own work, 2023. Data: PMF (2023a), PMF (2023b), PMF (2023d).

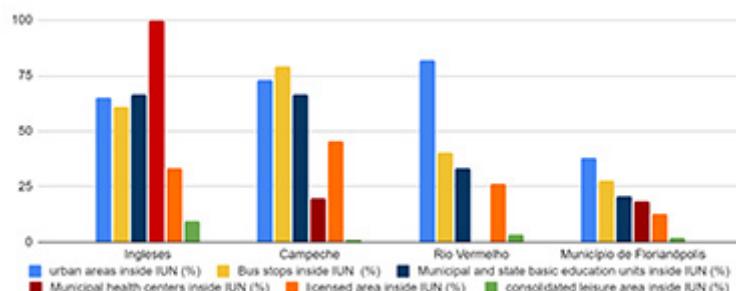
occupant themselves. Furthermore, due to the nature of irregular occupation, it is expected that most buildings do not have any licensing. However, the fact that the state is willing and does, in fact, open the possibility for licensing works in irregular areas, on its own, can serve to support the hypothesis.

Regarding the urban facilities analyzed, which are indeed initiatives of the state itself, there is a noticeable greater concern from the state in ensuring access to public transportation, education, and healthcare in informal settlements, and a lesser focus on providing leisure areas in IUN. When examining, by district, the percentage of leisure areas in IUN, it remains almost negligible. Figure 27 illustrates the three districts where the surface area of IUN is most relevant concerning their urbanized area (above 60%) – Ingleses, Campeche, and Rio Vermelho – and the distribution of bus stops, educational units, healthcare facilities, and licensed area in each of them and in the municipality.

With a few exceptions, the pattern repeats itself: bus stops, education, and health facilities are present, licensed constructions, and almost no leisure areas. Regarding the absence of health facilities in the IUNs of Rio Vermelho, one service unit was found outside the IUN in the district, and two others were present in the neighboring district, prompting a more in-depth qualitative analysis of this service to assess its effectiveness.

It is crucial to revisit Lefebvre's dialectics (2006), mentioned in the introductory section of this study, to explain the role of the state. As observed, the state's actions are fundamentally contradictory: while it establishes a series of norms and laws governing territorial organization ('castration,' 'crushing,' and 'stable center of societies and spaces,' in Lefebvre's own terms (*ibid.*, p. 45)), it actively works to consolidate occupations that have not undergone legal scrutiny (subversive violence as a response to the violence of power). The state's own efforts in

Figure 27 – Urban area, bus stops, education, health, permits, and leisure areas inside IUN in the districts of Ingleses, Campeche, and Rio Vermelho, as well as in the municipality of Florianópolis



Source: author's own work, 2023. Data: PMF (2023a), PMF (2023b), PMF (2023d), PMF (2023e).

implementing infrastructure and facilities are also contradictory: it is efficient in establishing bus stops, basic educational units, health centers, and even in licensing buildings, but it is inefficient in providing green spaces or high-quality recreational and leisure areas to the informal city.

This contradiction can be explained: if the state's role is merely to consolidate these occupations as a response to its own inability to provide formal properties at affordable prices and to lift a considerable portion of its population out of poverty, as suggested in the introduction of this article, then it is expected that existing public policies in the IUNs have the sole aim of consolidating them, either through legal security or by ensuring access to public transportation (even if precarious) and basic community facilities that enable the population to work (daycares, basic schools, basic healthcare). Beyond consolidation, a desirable role for the state in these areas should involve land regularization policies, the inclusion of

high-quality parks, squares, and green spaces, ensuring walkable and accessible sidewalks, safety measures, and other services that are typically reserved for regular areas of the city.

As follow-up steps for this research, it is suggested to delve deeper into the study by including variables such as income and land value, which can explain differences like the ones observed in the Campeche district, where, despite a high informality rate, there is a greater state presence in indicators like bus stops, education, and permits than those observed in the Rio Vermelho and Ingleses districts. Another analysis, as a continuation of this research, would involve urban facilities such as drainage, sewage collection, water and power distribution, and public lighting, considered essential by the federal law n. 6.766/1979 (Brazil, 1979). These would be compared to other facilities whose importance is not recognized as essential by federal law, such as sidewalks, traffic signals, road paving, or urban tree planting.

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