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Regulatory Voids and Housing Strain

Platform Short-Term Rentals in São Paulo and Milan

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Abstract (English)

Short-term rental (STR) platforms such as Airbnb have reshaped urban housing markets faster than regulation has been able to respond. This thesis examines how the absence of dedicated STR regulation affects housing stock and urban planning in two financially central yet structurally contrasting cities: São Paulo, Brazil, and Milan, Italy. Combining a comparative case-study approach with a replicable, neighborhood-level cluster analysis adapted from Garay-Tamajón et al. (2022), it joins scraped Airbnb listings to official census and registry data across São Paulo's 96 districts and Milan's 88 *Nuclei di Identità Locale*. The study finds that neither country has a dedicated national STR statute and that, in both, the judiciary has advanced ahead of the legislature, converging on the constitutional principle of the social function of property. The cities diverge in institutional maturity: Italy regulates through a layered, multi-level architecture (the national identification code, the flat rate (*cedolare secca)* regime, and emerging regional models), whereas in Brazil authority is displaced onto condominium assemblies and the courts. Spatially, Airbnb concentrates in central, high-value, professionalized neighborhoods – reinforcing São Paulo's center–periphery divide and Milan's touristified historic core – withdrawing dwellings from the long-term market, pushing up rents, and even capturing subsidized housing. The analysis concludes that the disruptive potential of STRs is not intrinsic to the technology but contingent on the design and, above all, the enforcement of local regulation.

Keywords: short-term rentals; Airbnb; housing affordability; platform urbanism; regulation; São Paulo; Milan; gentrification.

Abstract (Italiano)

Le piattaforme di affitti brevi (STR) come Airbnb hanno trasformato i mercati abitativi urbani più rapidamente di quanto la regolamentazione sia riuscita a rispondere. Questa tesi analizza come l'assenza di una regolamentazione specifica degli affitti brevi incida sul patrimonio abitativo e sulla pianificazione urbana in due città finanziariamente centrali ma strutturalmente diverse: San Paolo, in Brasile, e Milano, in Italia. Combinando un approccio comparativo di studio di caso con un'analisi di cluster a livello di quartiere, replicabile e adattata da Garay-Tamajón et al. (2022), associa gli annunci Airbnb estratti tramite *scraping* ai dati ufficiali censuari e anagrafici nei 96 distretti di San Paolo e negli 88 Nuclei di Identità Locale di Milano. Lo studio rileva che nessuno dei due Paesi dispone di una normativa nazionale specifica sugli affitti brevi e che, in entrambi, la giurisprudenza ha preceduto il legislatore, convergendo sul principio costituzionale della funzione sociale della proprietà. Le due città divergono per maturità istituzionale: l'Italia regola attraverso un'architettura stratificata e multilivello (il Codice Identificativo Nazionale, il regime della cedolare secca e i modelli regionali emergenti), mentre in Brasile l'autorità è demandata alle assemblee condominiali e ai tribunali. Sul piano spaziale, Airbnb si concentra nei quartieri centrali, di alto valore e professionalizzati – rafforzando la divisione centro–periferia di San Paolo e il nucleo storico turistificato di Milano – sottraendo alloggi al mercato di lungo periodo, facendo salire gli affitti e arrivando persino ad appropriarsi dell'edilizia sociale. L'analisi conclude che il potenziale dirompente degli affitti brevi non è intrinseco alla tecnologia, ma dipende dalla progettazione e, soprattutto, dall'applicazione della regolamentazione locale.

Parole chiave: affitti brevi; Airbnb; accessibilità abitativa; *platform urbanism*; regolamentazione; San Paolo; Milano; gentrificazione.

Abstract (Português)

As plataformas de aluguel de curta duração (STR), como o Airbnb, transformaram os mercados habitacionais urbanos mais rapidamente do que a regulação foi capaz de responder. Esta dissertação examina como a ausência de uma regulação específica para os aluguéis de curta duração afeta o estoque habitacional e o planejamento urbano em duas cidades financeiramente centrais, porém estruturalmente distintas: São Paulo, no Brasil, e Milão, na Itália. Combinando uma abordagem comparativa de estudo de caso com uma análise de agrupamento (cluster) em escala de bairro, replicável e adaptada de GarayTamajón et al. (2022), associa anúncios do Airbnb obtidos por *scraping* a dados oficiais censitários e cadastrais nos 96 distritos de São Paulo e nos 88 Núcleos de Identidade Local (*Nuclei di Identità Locale)* de Milão. O estudo constata que nenhum dos dois países possui uma legislação nacional específica para os aluguéis de curta duração e que, em ambos, o Judiciário avançou à frente do Legislativo, convergindo para o princípio constitucional da função social da propriedade. As cidades divergem quanto à maturidade institucional: a Itália regula por meio de uma arquitetura estratificada e multinível (o código de identificação nacional, o regime de imposto de taxa fixa (*cedolare secca*) e modelos regionais emergentes), enquanto no Brasil a autoridade é transferida para as assembleias condominiais e os tribunais. No plano espacial, o Airbnb concentra-se em bairros centrais, de alto valor e profissionalizados – reforçando a divisão centro–periferia de São Paulo e o núcleo histórico turistificado de Milão – retirando moradias do mercado de longo prazo, pressionando os aluguéis para cima e chegando a capturar a habitação subsidiada. A análise conclui que o potencial disruptivo dos aluguéis de curta duração não é intrínseco à tecnologia, mas depende do desenho e, sobretudo, da fiscalização da regulação local.

Palavras-chave: aluguéis de curta duração; Airbnb; acessibilidade habitacional; urbanismo de plataforma; regulação; São Paulo; Milão; gentrificação.

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CHAPTER 1 – INTRODUCTION

With the rise of the sharing economy, entrepreneurs envisioned many opportunities that were able to grow rapidly, especially thanks to the internet and to the affordability of smartphones and laptops (Hati et al., 2021). Drawing on Slee (2015) critique, the sharing economy emerged into the mainstream around 2013–2014 wrapped in an appealing promise: an egalitarian, peer-to-peer system that would empower ordinary people to become “micro-entrepreneurs,” reduce dependence on hierarchical corporations, and promote sustainability by prioritizing access over ownership. In this vision, under-used resources could be shared more efficiently, consumerism could be tempered, and value could shift from possessions to experiences. Yet, as Slee (2015) argues, this promise masks a deep contradiction. What is often labeled the “sharing economy” is in reality an on-demand, monetized marketplace that extends a harsh, deregulated free-market logic into areas of life that were previously protected. The communitarian ideal of “what’s mine is yours,” centered on small-scale, personal exchanges, has been overtaken by the corporate ambition of “what’s yours is mine,” pursued by globe-spanning companies with vast financial resources and a willingness to challenge democratically established rules. Nowhere is this clearer than in the dominance of Uber and Airbnb, companies that present themselves as neutral technology platforms while claiming that innovation makes existing regulations obsolete. According to (Slee, 2015), the core problem does not lie with individual participants but with these corporations and the financial interests behind them, which use the language of sharing to drive deregulation, reshape cities without regard for livability, and extract private wealth from collective urban life.

Modern home sharing as we know could have started with the AFS (American Field Service). Founded in 1914, it was created by a group of American students who volunteered as ambulance drivers to transport wounded people (AFS Website, n.d.). However, right after the end of WWII, in1946, they had a different focus, with their first exchange program happening in search of intercultural understanding as well as spreading peace. Later in 1949, Servas International was founded, an early organized hospitality exchange network (work-study-travel system - people visiting the homes of hosts offering hospitality) (Servas International, n.d.).

The first online hospitality exchange service seems to have happened in Poland, a network called Hospex (Hospitality Club, 2006) which was later incorporated by Hospitality Club, founded in 2000, implementing the first online volunteer hosting community. Vrbo started in 1995 (Vrbo, 2020) - the goal of renting Breckenridge Ski Resort condo soon became popular with homeowners that wanted to list their properties for short term rental. After e-mailing a group of students in Iceland in 1999, Couchsurfing founders understood a lot of people worldwide would be willing to share their homes with strangers due to the significant number of replies. Casey Fenton understood there was an interesting idea behind this event and started to develop a code. In 2004, with the help of 3 other friends he launched the Couchsurfing website (Couchsurfing, n.d.). In the end of 2005, the website had around 45.000 members and numbers were growing each year, but in 2006, after a lot of computer problems the database was lost and Fenton announced it would be the website’s end. As he e-mailed members telling them the bad news, they replied sympathizing with the project and asking them to keep it online, claiming they would sign up for their data again. Couchsurfing 2.0 was relaunched with the slogan "*Participate in Creating a Better World, One Couch At A Time*" and all this mobilization brought a lot of attention from the media. In 2011 the number of affiliated members scaled up to incredible 3 million people, becoming the most popular free accommodation site at that time. However, the fame was accompanied by breaking news for the community: the non-profit became for-profit, and a group of members started a protest stating that the user’s database was not meant for profit purposes. The CEO, Dan Hoffer, declared in an interview that their goal is to go bigger and to go public (Academic Dictionaries and Encyclopedias, 2011). As of today, Couchsurfing is a community of 14 million people spread around 200.000 cities.

(Couchsurfing, n.d.). In 2005, HomeAway consolidated online vacation rental market by organizing several companies in just one marketplace (*HomeAway: Organizing the Vacation Rental Industry*, 2014). In 2015, the Expedia Group takes over HomeAway and Vrbo (Expedia Group, n.d.).

The most globally well-known Short-term Rental company, Airbnb, started in 2007, when two friends decided to host some people in their apartment as a way of making extra money to pay the rent (Airbnb, 2007) creating a peer-to-peer digital network. Today, it is an online platform that bridges tenants and homeowners who have the same interest: renting a property for a short period of time. Renting real estates for a pre-defined period is not that revolutionary when it comes to its purpose or location, as many organizations with similar ideas have existed around the world for a long time, but Airbnb oversimplified this process and at the same time helped both negotiating sides make more assertive and reliable affairs. Apart from Airbnb and other main bnb companies, a lot of other similar platforms emerged, due to their undeniable success. From the most akin type of bnbs, like Rent by owner, Hopper or 9flats.com to the community-centered Fairbnb, that proposes to reduce the disputes between tourist rentals and massive tourism by creating sustainable travel experiences, or to misterb&b, an inclusive platform which provides safe stay to the whole LGBTQ+ community, also to Her House – where solo female travelers can either host or find accommodation only for women, or yet luxury vacation homes, listed on Plum Guide, promising the most remarkable experiences.

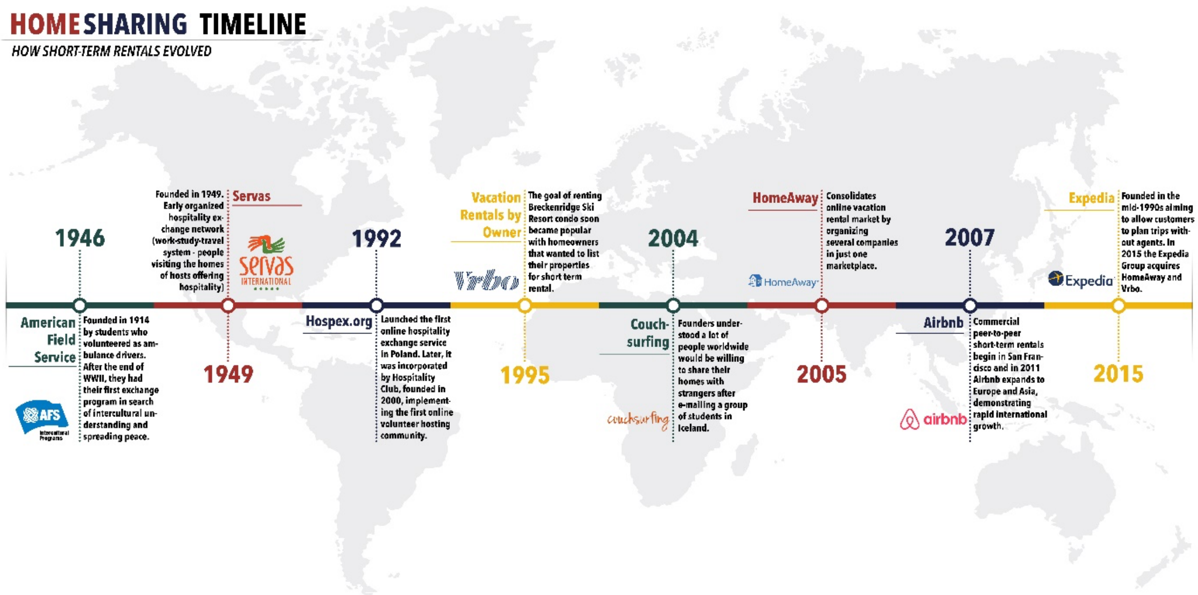

Figure 1 - Home Sharing worldwide throughout the years
Source: compiled by author

This kind of business has some positive aspects. Renting either a spare room or the whole property has helped a lot of families to increase household revenues, and consequently, their quality of life (Souza & Leonelli, 2021). In addition, the short-term rental units put in the market can be contributors to local tourism and are a means to provide an exchange between travelers from diverse cultures, when it comes to sharing a home, like renting a room or a bed.

Considering the hospitality sector, the supplementary number of listings is essential to meet the rapid demand of accommodation in case of events or any unplanned circumstances that would require fast availability of beds. An example was during the pandemics when Airbnb partnered directly with governments and health organizations in several countries, including Italy, (which was hit very hard early on), as well as with hospitals and nonprofits in the US and UK, to match medical personnel with available homes. By late 2020, this kind of emergency response work was formalized under Airbnb.org, a nonprofit arm that continues to provide temporary housing during crises like natural disasters and refugee displacements (Airbnb, 2020).

Even though Airbnb is a facilitating connector, there are certainly cons to be considered. As an enterprise whose purpose is home sharing, analyses of the local contexts and dynamics of cities are essential, and they should be considered under different perspectives. A study (Souza & Leonelli, 2021) pointed out three groups of impacts perceived in the urban environments: impacts in the hospitality industry; in the real estate market; and in the quality of life inside the neighborhood. The first concern comes from hotels and similar facilities. Most of them see a kind of unfair competition since there is no need for homeowners to get a license, pay taxes or meet the same requirements as running a business. The impact caused in the real estate market refers to how companies like Airbnb can highly influence urban development and the transactions in the real estate market. Finally, the third aspect concerns the relationship between tourists who rent those spaces for a brief period and permanent residents of surrounding areas. In some cases, there is even a link between the absence of long-term inhabitants, especially in central zones, and their deterioration, which is a remarkably critical aspect of overtourism.

The authors (Colomb & Moreira de Souza, 2021) compiled the positive and negative aspects of short-term rentals according to their supporters and objectors.

Arguments of the advocates of STR	Arguments of the critics of STR
• Democratisation of travel • Flexibility for travellers • Extra income for hosts • Sociability and inter-cultural exchanges • Better territorial spread of tourist accommodation • Trickle-down effects through visitors' expenditure and wealth generation in surrounding neighbourhoods	• Security and safety concerns for guests • Disturbances/nuisances to neighbouring residents • Competition with ho(s)tels • Tax evasion • Loss of the initial spirit of 'sharing' • Reproduction of socio-economic and racial inequalities • Structural impacts on housing markets (evictions and displacement; loss of residential units) and on the socio-economic fabric of neighbourhoods (retail; services)

Figure 2 - The pros and cons of STR: overview of arguments
Source: Colomb & Moreira de Souza, 2021

The response shown by many city governments to fight those adverse effects of Airbnb was to regulate its use and try to "protect" themselves from an unhealthy urban environment. A study (von Briel & Dolnicar, 2021) showed a group of cities that already had strict regulations that applied to short term rentals and another group having to create measures to deal with this phenomenon over the years. The study showed that after some years the group with stricter policies loosened the restrictions whilst the other group ended up creating more stringent regulations. However, designing effective regulations is not simple at all. Firstly, there are law controversies in most countries all over the world because it is not well specified how this service should be legally classified, and although it was born to be a peer-to-peer platform, it soon became a professional business for many big players inside the real estate market. Consequently, there are many illegal listings online, and Airbnb is not contributing actively to helping city governments to fight it back. "Data shows the majority of AirBnB listings in most cities are entire homes, many of which are rented all year round. And many 'hosts' are businesses with multiple properties, making large profits and benefiting from a totally unregulated market." (Corporate Europe Observatory, 2018).

Additionally, the urban change that is occurring due to residential units being transformed into touristic ones should not be neglected since its outcomes can lead to relevant issues like shortage of affordable housing or gentrification. The research using data obtained from the InsideAirbnb website (Colomb & Moreira de Souza, 2021) demonstrates that the listings for whole units are the vast majority in most of the cities analyzed, as high as 86.8% in Paris, for example. That said, it is possible to assume that the idea of a sharing economy is no longer there, furthermore, as a great number of those homes are not rented just on holidays, as they are not the owner's primary residence, the professionalization of these businesses shows that regulation is necessary.

To better understand how STR platform regulation process is being carried out, my decision was to analyze the two countries I am most familiar with: Brazil, my home country and Italy, where I developed my master's studies. Due to time and data collection restrictions I decided to also choose only two cities, with which I was also familiar, but with comparable characteristics. São Paulo and Milan are both the financial centers of their countries, host business events and fairs, have a lot of temporary workers and students, and are experiencing the effects of the rise of STRs mediated by digital platforms. Although their population and territorial areas are not ideally comparable, their district data may lead to a valuable comparative analysis.

To examine how the spatial concentration of short-term rentals relates to neighborhood characteristics, this study adapts the neighborhood-level clustering methodology of Garay-Tamajón, Lladós-Masllorens, Meseguer-Artola and MoralesPérez (2022) and applies it to Milan and São Paulo. The full procedure – variable selection, z-score standardization and k-means clustering – is set out in the Research Method section and in the case-study analysis (Chapter 4).

1.1 Research Problem

Since the 1970s, international tourism has experienced remarkable growth, propelled by globalization, advancements in air travel, and the liberalization of visa regimes. According to the United Nations World Tourism Organization (UNWTO, 2025), international tourist arrivals rose from 222 million in 1975 to over 1.5 billion in 2025, with projections reaching 2 billion by 2030.

This exponential increase in global travel has redefined urban spaces as prime tourist destinations. Urban centers have become particularly attractive due to their concentration of cultural, historical, and commercial offerings. Cities like Milan and São Paulo exemplify this trend, where the convergence of cultural heritage, business infrastructure, and creative economies fuels demand from both international and domestic travelers. In 2023, Milan recorded approximately 8.5 million tourist arrivals, marking its best year ever for tourism. Similarly, São Paulo has seen significant growth in tourism, reflecting its status as a major urban destination in Brazil (Comune di Milano, 2025) (Cidade de São Paulo, 2025).

The rise in urban tourism has heightened the demand for flexible lodging options. Short-term rentals, facilitated by online platforms like Airbnb, have emerged as popular alternatives to traditional hotels. These platforms offer travelers the convenience and affordability they seek, while also providing property owners with opportunities for supplemental income. However, the rapid growth of short-term rentals has raised concerns about their impact on housing availability and affordability in urban areas (Barron et al., 2021).

Research indicates that the proliferation of STRs can lead to a reallocation of housing stock from long-term rentals to short-term accommodations, thereby reducing the availability of housing for residents. A study (Barron, Kung, & Proserpio, 2021) found that a 1% increase in Airbnb listings led to a 0.018% increase in rents and a 0.026% increase in house prices in the United States. The effect was more pronounced in areas with lower owner-occupancy rates, suggesting that STRs can exacerbate housing affordability issues in certain neighborhoods (Koster et al., 2021).

In New York City, a 2018 report by the Office of the New York City Comptroller estimated that the growth of Airbnb units accounted for 9.2% of the citywide increase in rental rates between 2009 and 2016, with even higher impacts in neighborhoods with high concentrations of STRs (Mid-America Regional Council, 2024). Similarly, in European cities like Rome, the surge in STRs has led to significant housing challenges. Reports indicate that landlords are increasingly converting long-term rental units into short-term accommodations to capitalize on the tourist market, leading to evictions and a reduction in available housing for residents. In anticipation of the 2025 Roman Catholic Holy Year, landlords in Rome have increasingly converted long-term rental units into short-term accommodations to capitalize on the expected influx of 32 million individual visitors. This shift has resulted in a doubling of such transformations over the previous year, with long-term rental rates increasing by about a third. Consequently, many residents were displaced or forced to move to more affordable areas (McElwee & Piscioneri, 2024). According to Celata (2017), Airbnb listings are heavily concentrated in the historic center, but also in certain peripheral areas, with higher relative concentrations in zones like Quadraro, Testaccio, and Portuense. This provides new income opportunities for residents in these neighborhoods however, it further contributes to the "touristification" and potential gentrification of central areas, with 18-22% of residential units in the historic center listed on the platform. Despite the fact that European cities (Bei & Celata, 2023) adopted zonal restrictions and obtained cooperation from booking platforms leading to additional positive effects on reducing the pressure and balancing the composition of short-term rentals, the study showed that Rome and other Italian cities like Venice and Florence are still using very few requirements and restrictions for short term rentals.

In Portugal, for example, a 1 percentage point increase in Airbnb share is associated with a 3.2% to 3.7% rise in house prices, particularly in high-tourist areas like Lisbon and Porto (Franco & Santos, 2021). Similarly, a study in Sydney used machine learning to show how gentrification patterns expand outward from urban cores, often reinforced by STR-induced market pressures (Thackway et al., 2023). These findings reflect a wider pattern observed in global cities where Airbnb listings proliferate. The dynamics of gentrification are further complicated by the chicken-and-egg dilemma: does Airbnb cause gentrification or vice versa? Research (Park et al., 2023) in Florida, USA, could not prove Airbnb was a contributor to gentrification. However, as already claimed by Annunziata & Rivas-Alonso (2018) strong community bonds are key to defying the consequences of gentrification, since the success of resistance practices ultimately rests on the strength of solidarities among residents: informal networks of support, where neighbors and family share precious knowledge and assist whoever is in need, function as a vital infrastructure for staying put, while collective memory and a shared sense of belonging root residents' lives and strengthen their ties to neighborhoods under threat. Conversely, when displacement breaks social ties, solidarity erodes with intimate and irreparable effects on the displaced – confirming that cohesion is precisely the resource of gentrification attacks. It is from this socio-spatial transformation that Airbnb profits. Wachsmuth and Weisler (2018) argue that the platform has introduced a new, systematic but geographically uneven revenue flow into housing markets, creating a unique form of rent gap in culturally desirable and internationally recognizable neighborhoods – areas whose symbolic appeal was largely produced by earlier waves of gentrification – and one that can be exploited rapidly and with minimal capital by landlords, developers and homeowners alike. The consequences for community fabric are captured by Cócola-Gant (2016), who identifies a form of "collective displacement" in which residential life itself is progressively substituted by tourism, undermining neighborhood stability. Airbnb thus benefits from, and simultaneously deepens, the dissolution of the very social ties that constitute residents' capacity to resist.

Resident reactions to Airbnb are often polarized. In Porto, tourists and locals diverged sharply in their assessments: while both groups acknowledged the economic benefits of STRs, locals reported concerns about rising rents, reduced housing availability, and a loss of community character (Albuquerque et al., 2024). A U.S.-based study further showed that residents with higher Airbnb awareness and community engagement perceived more benefits, while the perceived need for regulation was a major predictor of negative impression (Mody et al., 2021). These perceptions vary by neighborhood type. In suburban or less tourist-saturated zones, residents may see Airbnb as an opportunity for economic uplift. In contrast, central urban areas - where STR density is higher - report intensified conflict due to noise complaints, overtourism, and deteriorating neighborhood identity.

Cities across Europe have experimented with a range of regulatory strategies to mitigate the adverse effects of STRs. A comparative study of Barcelona, Berlin, Amsterdam, and Paris reveals a patchwork of responses: from registration requirements and zoning restrictions to entire home listing bans unless the property is a primary residence. Berlin’s approach, for instance, included a "change-of-use" law to protect housing stock, while Barcelona established a cap on the number of tourist apartments allowed (Dredge et al., 2016), and has recently announced to have its STR licenses to be withdrawn by 2028 (Ayuntamiento de Barcelona, 2026). Despite these efforts, enforcement remains a challenge. Many platforms resist sharing listing data, complicating the task of monitoring illegal or non-compliant rentals. The "Unfairbnb" report details how Airbnb uses EU-level legal protections, like the Services Directive, to evade local regulation and restrict data access for city authorities (Corporate Europe Observatory, 2018).

STRs also disrupt traditional hotel markets. Research shows that a 1% increase in Airbnb listings can reduce hotel revenues by 0.05%, with stronger effects in budget and midscale segments (Dogru et al., 2020). This competitive dynamic often provokes lobbying from hotel associations for stricter regulation. In cities like New Orleans and Paris, regulation has had tangible effects. In New Orleans, (E. J. van Holm, 2020) new rules reduced STR numbers temporarily and shifted listings away from the city's core tourism areas. Paris has seen similar shifts, though enforcement challenges persist.

In the Italian context, where homeownership is widespread and the supply of long-term rental housing is structurally limited, Celata and Romano (2020) claim that the conversion of residential dwellings into short-term rentals has particularly acute consequences, as it directly affects the already small share of housing available to residents. As highlighted by the authors, accommodation platforms such as Airbnb generate two closely related effects. On the one hand, they foster a form of platform-mediated touristification that produces faster and more disruptive transformations than those associated with more gradual processes of gentrification or touristification. On the other hand, the spatial distribution of short-term rentals is highly extensive, extending into central and near-central areas that remained relatively marginal during earlier tourism cycles.

Although these dynamics are concentrated in limited portions of the urban fabric, they affect areas that are central to both the material functioning of the city and residents' sense of belonging. As a result, permanent inhabitants experience not only physical displacement from central neighborhoods but also a growing sense of alienation from their own city. The authors (Celata & Romano, 2020) conclude that the same characteristics that make platform-mediated touristification so prevalent in Italy also undermine effective governance, since short-term rentals are largely embedded within ordinary residential housing and thus fall outside specific planning regulations, leaving public authorities with weak or insufficient tools to monitor and regulate the phenomenon.

The examples cited underscore the complex relationship between the growth of STRs and housing affordability in urban areas. While STR platforms offer economic opportunities, they also present significant challenges that require careful policy consideration to ensure sustainable urban development. Policymakers face a difficult balancing act: enabling innovation while safeguarding affordability, fairness, and neighborhood integrity. Effective governance requires not only robust regulation but also cooperation from digital platforms, accurate data, and attention to local context.

The conceptual link between short-term rentals (STR) and housing affordability is most strongly theorized by Wachsmuth and Weisler (2018), who reframe Airbnb-led displacement through Neil Smith's rent gap. They argue that platform-mediated short-term letting generates a new potential ground rent: because tourist accommodation can extract substantially higher returns per night than long-term residential tenancy, landlords face a powerful incentive to withdraw units from the housing market and convert them to STR. This widens the gap between actual and potential rent in central, amenity-rich neighborhoods and produces a distinctive form of "tourism gentrification" that operates not through physical redevelopment but through a change of use of the existing stock. The mechanism is therefore as much economic as spatial: where the STR premium is high and entry costs low, the rational landlord behavior predicted by the rent-gap model translates directly into a contraction of residential supply and upward pressure on rents.

Some discussions on European cities broadly validate this logic while highlighting its spatial inequality. Garay-Tamajón et al. (2022) link the diffusion of Airbnb to gentrification dynamics in the Spanish/Catalan context, showing that platform expansion concentrates in already touristified and transitional central districts where it intensifies pressure on residents. For Italy, Congiu et al. (2025) provide the most systematic demonstration that the effect of Airbnb on the housing market is highly uneven both across and within cities: impacts on prices and rents are sharply concentrated in central, high-demand neighborhoods of major tourist destinations, while peripheral areas and lower-pressure cities register little measurable effect. Higgins et al. (2023) reinforce this picture at the intra-urban scale, associating listing density in historic centers with affordability strains for residents. Crucially, this unevenness means that the rent-gap mechanism is not deterministic but conditional on local demand intensity and the structure of the existing market.

The Italian national picture confirms that the phenomenon has reached a scale capable of structural disruption, and that it is increasingly driven by professional operators rather than incidental hosts. In the Politecnico di Torino FULL report: *Chi gestisce davvero il mercato Airbnb?* Chiodelli and Beltramo (2025) document roughly 754,000 active Italian listings in 2024 – a 52% increase since 2017 – generating around €8.8 billion in revenue, with average per-unit revenue and daily rates both rising by over 50%. Strikingly, although "large hosts" managing more than ten units represent only about 1.3% of all hosts, they control a quarter of listings and capture nearly 38% of total revenue, signaling a marked professionalization of the sector. This concentration matters for affordability because professional, multi-unit operators are precisely the actors most likely to convert long-term residential stock permanently into dedicated tourist accommodation, deepening the rent gap that Wachsmuth and Weisler describe in contrast to non-professional hosts whose occasional letting only supplements their income without removing units from the residential market.

Whether these pressures translate into housing disruption, however, depends heavily on local regulatory configuration, and here the European evidence is instructive. Celata and Romano (2020) connect the rise of online STR platforms to overtourism in Italian cities and highlight the limited and fragmented regulatory response, in which weak national frameworks and dispersed municipal competences leave central historic districts exposed. Bei and Celata (2023), through a counterfactual assessment of regulation across European cities, show that regulatory intervention can restrain STR growth, but those effects are modest and strongly dependent on design and context – registration requirements, night caps, zoning restrictions and density limits vary widely in stringency and allocation. Their findings imply that the disruptive potential of STR is not a fixed property of the technology but a function of the regulatory environment that either enables or constrains conversion.

The decisive variable, then, is not merely the existence of rules but their enforcement, a point developed by Colomb and Moreira de Souza (2024). Their analysis of illegal short-term rentals shows that even where restrictive frameworks are in place, weak enforcement capacity, platform opacity and prevailing informal practices allow non-compliant letting to persist, hollowing out the protective intent of regulation. This helps explain the contrast frequently drawn between cities with stringent and actively enforced regimes – registration, primary-residence requirements or hard caps in places such as Barcelona, Amsterdam, Berlin and Paris – and the comparatively permissive, fragmented and under-enforced Italian setting, where the scale documented by the Polito report has been allowed to develop. Taken together, the literature suggests that gentrification and affordability outcomes from STR are jointly determined by the underlying rent gap, the degree of host professionalization, and above all by the specificity and enforceability of local regulation, which is what ultimately allows or prevents disruption.

1.2 Research Method

To develop this investigation, the first step would be to identify what impacts the lack of regulation of Short-term Rentals (STRs) offered by the sharing economy might be causing in Italian and Brazilian cities with touristic relevance. Is there a shortage of long-term rental housing stock? Is this leading to any urban planning issues, like population displacements or emptying of certain zones or neighborhoods? Finally, after a thorough analysis, what feasible suggestions could be implemented in these countries without simply proposing to completely ban those businesses as some cities have been intending.

The research method chosen to respond to the above-mentioned inquiries was qualitative case study analysis. Studying communities and neighborhoods, as human settlements, involving people's needs, desires, and interactions (Flyvbjerg, 2011) is not part of a predictive theory and therefore, concrete examples are far richer but also underestimated research resources. The author has also emphasized that even if the research is based on one case, only it could be more valuable if carefully analyzed than a considerable number of samples. However, selection is a crucial step that must not be taken for granted once the case choices could either support or ruin the whole research. Lastly, due to the human inherent storyteller narrative to describe a plot, case studies can also be considered rich sources of data to proceed as a research method, but in its wholeness, not a selection of its parts or a general summary. That all said, (Flyvbjerg, 2011) restates that although not fully accepted as a liable methodology, case studies have proven to be one of the best analysis approaches in social science, and that its combination with statistics research has greatly contributed to scholars' findings.

Following the steps on how to do better case studies (Yin, 2013), the initial procedure was to select the most suitable cases to answer the questions meant to be investigated. Since neither country has a specific national regulation regarding the territorial and housing impacts caused by the sharing economy of short-term-rental real estate market through online platforms, i.e. Airbnb, Vrbo, Booking.com, adding to this, the growing effect of overtourism in some cities worldwide, including cities in these countries, and finally the spreading concern of local residents about rising rents, population displacement and emptying of residential areas in favor of transforming properties for exclusively touristic purposes the preference among choices was reduced to the most significant touristic cities. The selection was reduced to the most visited ones, not just recently, but throughout the years. These study cases have an important number of tourists, changing the city's demographics either seasonally or basically during the entire year, causing a profound impact on residents' lives.

Step 2 (Yin, 2013) leads to the possibility of analyzing more than just one case study, which was already taken for granted since the beginning due to the comparison I intended to do between two countries. Therefore, the choices were made considering large cities in both countries; also, major centers for businesses, culture, and architecture, and lastly, cities that attract thousands of visitors due to their natural and artistic relevance. As the sharing economy is a relatively recent phenomenon, it leads to Step 3: the resources available are massively online, i.e. papers produced by researchers, articles on newspapers, posts on social media, government publications, but recent book publications and direct observations and other conventional materials will also be included as evidence.

The last step is finally "analyzing case study evidence" (Yin, 2013) which means taking decisions, building arguments (either demonstrating the expected findings and disproving counter evidence, or acknowledging the unpredictable and pointing why it is true otherwise). Detecting a matching pattern in the cases might be useful to compare the data. One strategy is to use Census data to try to understand how population and building occupations have been changing throughout the years, especially before and after the consolidation of platform-mediated STRs.

The proposition is therefore to analyze the city of Sao Paulo in Brazil and the city of Milan in Italy to compare their differences and similarities regarding the poor regulation of STR platforms and the consequences in housing dynamics in both cities. To me, being familiar with those municipalities was an important part of the choice, facilitating data collection and the comprehension of current rules and policies. Besides that, I recognize both cities as the most important financial centers in their country, they both receive large amounts of tourists either for business or pleasure and are both high-demand cities attracting thousands of workers and students to move either temporarily or permanently. In conclusion, the aim is to better understand how the lack of specific regulations for STRs affects housing stock and urban planning in those municipalities.

CHAPTER 2 – HOUSING AND HOSTING REGULATIONS IN BRAZIL AND IN ITALY

2.1 Introduction

The emergence and rapid growth of short-term rental (STR) platforms such as Airbnb, Vrbo, and Booking.com have transformed urban housing markets across the globe. By allowing individuals to rent rooms, apartments, or entire homes to tourists, these platforms have introduced a new dynamic in the intersection of housing, tourism, and digital economies. What began as a form of "home sharing" has evolved into a global industry with increasingly professionalized operators, creating both opportunities and challenges for cities.

A key regulatory dilemma lies in the fact that STRs often operate in a grey zone of existing legal frameworks. In most jurisdictions, they do not clearly fit into either residential tenancy or commercial hospitality categories. This ambiguity complicates enforcement, taxation, and zoning, often allowing STRs to flourish in legal loopholes. (Aguilera et al., 2025) claim that "influencing the law has been a key part of their business plan and one of the conditions of their survival". As highlighted by Colomb and Moreira de Souza (2021), this "regulated deregulation" leads to fragmented local policies that are often reactive rather than preventative.

STRs also disrupt conventional property and planning regimes. In terms of housing, numerous studies have documented their role in exacerbating rent increases, reducing the availability of long-term rentals, and accelerating gentrification in central urban neighborhoods (Barron et al., 2021); (Franco & Santos, 2021). From a tourism perspective, STRs may decentralize tourist flows into residential areas, leading to tensions between visitors and permanent residents. Traditional tourism laws, focused on hotel licensing and zoning, are ill-equipped to address this new spatial pattern of tourist accommodation.

Moreover, STRs challenge deeply rooted legal and political concepts – particularly the balance between private property rights and public interest. In liberal democracies, the right to property is constitutionally protected (e.g., Article 5 of the Brazilian Constitution; Article 42 of the Italian Constitution). However, the unregulated commercialization of housing stock for STR use has raised concerns about the social function of property, housing commodification, and residents' right to the city (Rolnik et al., 2019). This conflict has become a central issue in legal disputes across many cities, where courts, municipalities, and homeowners' associations deal with how to regulate STRs without infringing individual freedoms.

As STR platforms continue to expand globally, the need for localized regulatory adaptation becomes more pressing. Cities are at the forefront of this challenge, attempting to balance innovation, economic opportunity, and tourism growth with affordability, housing equity, and neighborhood stability. This chapter explores how two cities, São Paulo and Milan, are navigating these challenges within their respective legal and planning systems.

The contractual basis of a short-term rental differs markedly across the two jurisdictions, and the limiting case of a three-month stay illustrates the divergence. In Italy, a tourist let is configured as a *locazione breve* under Article 4 of Decree-Law 50/2017, lasting no more than thirty days, exempt from lease registration and taxed under the short-let substitute regime (flat rate – *cedolare secca* – at 21 per cent on the first dwelling and 26 per cent thereafter). A stay of three months cannot be accommodated within this regime: it requires a *contratto transitorio* (transitory lease) under Law 431/1998 and the Ministerial Decree of 16 January 2017, running from one to eighteen months based on a documented temporary need, or a dedicated student transitory lease of six to thirty-six months. In Brazil, the functional equivalent is the *locação por temporada* (seasonal rental) regulated by Article 48 of the *Lei do Inquilinato* (Law 8.245/1991), which is expressly capped at ninety days; a three-month occupancy therefore coincides with the legal ceiling of the seasonal contract, beyond which the arrangement reverts to an ordinary residential lease with a minimum term of thirty months. Brazilian higher courts have characterized platform-mediated lettings as *hospedagem atípica* (atypical lodging), situating them outside both the seasonal-rental and the hotel regimes (Superior Tribunal de Justiça (Brasil), 2021) - the very interstitial position that frustrates regulation.

This regulatory ambiguity unfolds across two analytically distinct realms, treated separately throughout the national and comparative discussion that follows. The first is housing and tenancy regulation, which governs the rental market itself - lease categories, contractual durations and rent-setting mechanisms (Law 431/1998 in Italy; and Law 8.245/1991, in Brazil). The second is planning and zoning regulation, which governs hospitality as a land-use function and the supply of new residential development (the *Piano di Governo del Territorio 'Milano 2030'* in Milan; the *Plano Diretor Estratégico* and its structuring axes in São Paulo). Short-term rentals are difficult to govern precisely because they fall between these realms, escaping both the protections of tenancy law and the land-use controls applied to commercial accommodation (Coppola et al., 2023; Rolnik et al., 2019).

2.2 National-Level Regulation

2.2.1 Brazil

In Brazil, national legislation still struggles to keep pace with the digital transformation of the housing and tourism markets introduced by short-term rental (STR) platforms such as Airbnb, Vrbo, and Booking.com. STRs remain legally undefined at the federal level, creating a regulatory gap that generates confusion and inconsistency across jurisdictions. The two key national laws relevant to STRs are the Tenancy Law – *(Tenancy Law, 1991*) and the General Tourism Law (Brasil, 2008) the latter recently amended by Law n° 14.978/2024. As discussed below, this gap has begun to narrow not through dedicated federal legislation, but through the convergence of higher-court jurisprudence and the 2025 tax reform, both of which now treat professionalized short-term hosting as an economic activity distinct from ordinary residential leasing.

The Tenancy Law governs lease agreements for residential and commercial properties but was designed with long-term leases in mind. It does not meaningfully apply to STRs, which are typically informal, short duration stays without the security and rights afforded to tenants. Similarly, while the General Tourism Law defines and regulates hotel and hospitality services, it does not explicitly cover individuals or companies operating on STR platforms. The 2024 amendment incorporated short-stay and seasonal accommodation more clearly within the tourism framework, but it stopped short of resolving the gray legal area in which STR platforms operate, particularly with respect to peer-to-peer transactions between private hosts and guests. As a result, the most consequential normative developments of the present decade have originated outside this statute.

In an earlier attempt to address these gaps, the Brazilian Congress introduced a bill – (Regulation of Short-Term Rentals, 2019) proposing to classify STRs as a new category of economic activity, subject to specific obligations. The bill included three significant provisions: (1) homeowners would be required to obtain approval from most co-owners in a condominium to operate STRs; (2) STR income would be taxed under new rules; and (3) municipalities would have regulatory authority over the activity. The proposed law aims to resolve common conflicts in multi-unit buildings, protect neighbors from nuisance or security issues, and address tax avoidance. However, the bill was stalled amid opposition from property rights advocates and STR operators, who argue that it infringed upon Article 5 of the Brazilian Constitution, which enshrines the right to private property and free enterprise. As the legislative path lost momentum, the courts and the tax authorities moved to fill the void. This formalization agenda has been pushed particularly by the hotel sector, which has long argued that short-term rentals should be brought within the same registration, tax, and municipal-consent requirements that hotels must observe.

At the heart of this legal standoff lies Brazil's constitutional principle of the social function of property. Article 5 and Article 170 of the Constitution (Brasil, 1988) balance individual property rights with collective interests, such as housing access and urban order. Critics of unregulated STRs argue that allowing speculative use of residential units for continuous short-term purposes undermines housing rights and worsens affordability. The scale of the phenomenon lends weight to this concern: the number of active STR listings in Brazil rose from roughly 263,000 in January 2021 to approximately 535,000 in January 2024, with Rio de Janeiro and São Paulo each hosting more than 22,000 properties (InsideAirbnb, 2025). Data for São Paulo further indicates that most listings are entire homes managed by professional operators, many of whom own multiple properties. Because these units often remain vacant between bookings, they are effectively withdrawn from the long-term residential stock, exacerbating an already substantial housing shortage – the João Pinheiro Foundation estimated a national housing deficit of about 5.8 million homes, and 1.252.830 only for the municipality of São Paulo, 98% of which located in its urban area (FJP, 2026).

Legal precedent has increasingly favored local and collective governance of the activity. An early Court Decision – nº 1.819.075/RS (Superior Tribunal de Justiça (Brasil), 2021) permitted a condominium to restrict STRs in its internal regulations, reasoning that this form of hosting does not fall within the definition of permanent residence or formal hospitality services. That logic was consolidated at the national level in May 2026, when the Second Section of the Superior Court of Justice (STJ) ruled that short stays of fewer than ninety days in buildings designated for residential use are permitted only where a condominium assembly has granted prior approval by a qualified quorum of at least two-thirds of the unit owners (Superior Tribunal de Justiça (Brasil), 2026). Critically, the Court characterized the short-stay contract as an atypical arrangement – neither a typical residential lease nor classic hotel accommodation – and distinguished the merely sporadic offering of a property, which does not alter its residential nature, from the recurring and professionalized economic exploitation that can compromise the security and tranquility of residents. The decision does not prohibit STRs nationwide; rather, it strengthens the authority of condominium assemblies to determine how residential units may be used, and it supplies the binding interpretive framework that federal legislation had failed to provide.

The taxation question, long treated as unresolved, has likewise been substantially reshaped. The 2025 tax reform enacted through Complementary Law no. 214/2025 relates short-term accommodation of up to ninety days, typically intermediated by platforms such as Airbnb and Booking.com, with hotel services for fiscal purposes, subjecting the activity to the new Tax on Goods and Services (IBS) and Contribution on Goods and Services (CBS), with a forty-percent reduction applied to the standard rate (2025). For individual hosts, this equivalence applies only above a defined threshold – ownership of more than three properties combined with annual rental revenue exceeding approximately R$240,000 – thereby targeting professionalized operators rather than occasional hosts. Estimates suggest that the effective tax burden may approach forty-four percent for individuals, against roughly twenty-seven percent for companies taxed under the presumed-profit regime. Implementation follows the broader transition schedule of the reform, with testing from 2026 and effective collection phased in from 2027 onward. This development materially narrows the regulatory gap on taxation, reframing the earlier debate over tax avoidance around questions of rate, threshold, and enforcement rather than the absence of any rule.

Another contested domain is the hospitality industry, particularly small hotels and *pousadas* (guesthouses), which see STRs as unfair competition. Hotels must comply with extensive safety, accessibility, labor, and tax obligations, while many STR operators have historically avoided such requirements. This exemption is rooted in the legal classification itself: Brazilian federal law – the Constitution, Civil Code, and Tenancy Law – treats short stays (*aluguel por temporada*) as a form of legitimate residential leasing rather than a hospitality service, which is precisely what frees STR hosts from the hotel and tourism classification, fire-safety, accessibility, and labor obligations that hotels must meet. Several municipalities have begun to respond: Rio de Janeiro, Florianópolis, and Salvador have enacted local measures requiring host registration or the collection of tourist taxes, and Salvador has sanctioned legislation extending the municipal Service Tax (ISS) to platform-intermediated short-term rentals, pending regulation. Enforcement nonetheless remains weak and uneven, and there is still no unified national database to monitor STR activity or verify compliance – the federal CADASTUR registry tracks tourism service providers in general but does not capture individual short-term listings.

Despite Brazil being ranked among Airbnb's top ten global markets, the national debate over STRs has remained narrowly focused on legal and economic arguments. Comparatively little attention has been paid to the territorial and social consequences, such as gentrification, residential displacement, and the gradual transformation of entire neighborhoods into de facto hotel zones, a dynamic already visible in highly touristic districts such as Leblon, Ipanema, and Copacabana, in the city of Rio de Janeiro. Researchers like Rolnik (2019) argue that public policy has failed to treat housing as a social right, allowing speculative dynamics to dominate urban development. The recent consolidation of jurisprudence and fiscal rules addresses some of the legal and economic dimensions of the problem, yet it leaves these distributive and spatial questions largely unanswered, underscoring the continued absence of a comprehensive national framework attentive to housing as a social function rather than merely an economic asset.

Under Brazilian law, the contractual model underlying platform-mediated short-term rentals is not fully captured by any existing federal statute. The two principal national instruments - the *Lei do Inquilinato* (Law 8.245/1991) and the *Lei Geral do Turismo* (Law 11.771/2008, recently amended by Law 14.978/2024) - still contain no specific wording on the sharing economy, so disputes over this activity remain subject to broad and contested judicial interpretation.

At the national level, debate continues over the need for unified short-term-rental regulation. The hotel industry, represented by the *Associação Brasileira da Indústria de Hotéis* (ABIH), has pressed for stricter oversight, arguing that platforms such as Airbnb compete unfairly by avoiding the taxes and operational obligations imposed on licensed accommodation; this lobbying has increased pressure on federal lawmakers to define clear parameters for digital lodging (BRICS Competition, 2024).

2.2.2 Italy

THIS NEEDS TO BE EXPANDED AND THOROUGHLY REWORKED

- GO MORE IN DEPTH ON RENTAL TENACY LEGISLATION, THAT ACTUALLY REGULATES SHORTER TERMS (AFFITTI TRANSITORI)
- A WAY TO DISCOURAGE STR IS TAXES, LOOK AT HOW THEY HAVE BEEN DIFFERENTIATED BETWEEN LONG TERM AND STR AND BETWEEB LARGE PORFOLIOS OF STR AND SMALL ONES. THE GVT HAS ALSO INTRODUCED A COMPULSORY FISCAL CODE FOR STR
- ADRESS SOME KEY CONTROVERSIES: TUSCANY'S REGIONAL LAW THAT HAS ATTEMPTED TO REGULATE THROUGH ZONING LAW, OR BOLOGNA THAT HAS ATTEMPTED TO THE SAME IN ITS
- Another key issue is how functional zoning is addressed in Italy
- You also have to look at the multi-level governance of all this is matters is done, that is probably going to be a very important reason in explaining divergences among the two cases: a comparative table would be more than welcome here

Italy faces a similar lack of STR-specific national regulation, though its approach is shaped by a different institutional and legal framework. The main legal pillars related to housing and tourism are Law No. 431 of 9 December 1998, supplemented by the Civil Code and ministerial decrees (notably the Decree of 16 January 2017 on agreed-rent and transitory contracts), and the Tourism Code (*Codice del Turismo*) - Legislative Decree 79/2011. These laws provide a basic structure for lease agreements and tourist accommodation but precede the sharing economy and are insufficient to address the complexities of platform-mediated STRs.

The Italian Tenancy Law allows property owners to lease real estate for residential or commercial purposes but does not distinguish between longer term contracts and short-term, transient arrangements. As a result, STRs previously operating informally in a legal grey area must now comply with registering and publicly identifying the mandatory National Identification Code (CIN) aligned with tax reporting and safety obligations, with platforms legally responsible for enforcement, as stated in Regulation (EU) 2024/1028 (2024).

For tax purposes, the Italian Revenue Agency (*Agenzia dell'Entrate*) frames rentals through registration and the optional *cedolare secca* (flat substitute tax). From the Agency's standpoint there are effectively two categories: ordinary registered residential leases (the long- and mid-term contracts) and *locazioni brevi* - short-term lets of no more than 30 days. The 30-day boundary and, for residential leases, the existence of a genuine "transitory need" are the pivots that determine which regime applies.

The Long-Term Residential Leases are the standard housing contracts under Law 431/1998. Agenzia dell'Entrate groups them under registration category "L1". They carry the strongest tenant protection. They are:

I. Free-Rent Contract (*Canone Libero*)

This is the classic contract, with a minimum duration of 4 years, automatically renewed for another 4 years. The rent amount is freely agreed upon between landlord and tenant. In exchange for this pricing freedom, the tenant enjoys greater housing stability.

Taxation for the landlord:

A. Standard IRPEF (income tax) regime on 95% of the annual rent.
B. Or *cedolare secca* (flat tax) of 21%.
    a) Deductions for the tenant (property as primary residence): up to €300/year for incomes up to ~€15,500, or up to €150/year for incomes between ~€15,500 and ~€31,000.

II. Regulated-Rent Contract (*Canone Concordato*)

The rent value is set within minimum and maximum brackets established by local agreements between landlord and tenant organizations. This type is more fiscally advantageous. The duration is 3 years + 2 years automatic renewal.

A. Taxation for the landlord:
    a) IRPEF on only 66.5% of the annual rent (in municipalities with high housing tension – ATA) or 95% elsewhere.
    b) Or *cedolare secca* of 10% (ATA and provincial capitals) or 21% in other municipalities.
B. Deductions for the tenant (primary residence): up to €495.80/year (income up to ~€15,500) or up to €247.90/year (income up to ~€31,000).

The Law also covers a Transitional Lease Contract (*Contratto Transitorio*) which is intended for temporary needs of either landlord or tenant (e.g. work-related relocation), with a duration of 1 to 18 months. In municipalities with more than 10,000 inhabitants, the rent must respect the brackets set by territorial agreements; below that threshold, the amount is freely set. The contract must expressly state the reason for its temporary nature and, if it lasts more than 30 days, include supporting documentation.

A. Taxation: same as the regulated-rent contract – *cedolare secca* of 10% (if ATA **and** regulated-rent contract – *canone concordato*) or 21% in other municipalities.

One kind of Transitional Lease Contract is for Out-of-Town University Students. It is aimed at students enrolled at a university in a municipality different from their place of residence (at least 100 km away **and** in a different province), with a duration of 6 months to 3 years, renewable. It can be signed by an individual student or by groups of students.

A. Landlord taxation: same as the regulated-rent contract (cedolare secca of 10% if ATA **and** regulated-rent contract – *canone concordato* or 21% elsewhere).
B. Special deduction for the student: 19% of the rent amount, up to a maximum of €2,633/year – but only if payment is made by bank transfer or other traceable means (cash payments are not eligible).

The Short-Term Rentals (*Locazioni Brevi*) fall outside residential tenancy protections and into a distinct fiscal regime. Agenzia delle Entrate defines a *locazione breve* as a lease of a residential property not exceeding 30 days, entered by private individuals outside the exercise of business activity. Subleases and paid grants of use by a borrower (*comodatario*) are treated the same way.

A. Tax treatment (*cedolare secca* on short lets)
   a) Standard rate: 26% from 1 January 2024 (Budget Law 2024, Law 213/2023).
   b) Reduced rate: 21% on a single property chosen by the taxpayer in the annual tax return; the second property is taxed at 26%.
   c) Taxable base: the full contractual rent, with no 5% lump-sum deduction that applies under the ordinary regime.
   d) No registration tax/stamp duty: as with all *cedolare secca*, registration tax and stamp duty are not due.

From the 2026 tax period, *cedolare secca* on short-term rentals is allowed only if no more than two apartments are used for this purpose in the year (previously four). Beyond that threshold the activity – by whomever carried out – is deemed to be conducted in business form (*forma imprenditoriale*), which moves it out of the *cedolare* regime and triggers VAT obligations.

Feature	**Long-term (4+4 / 3+2)**	**Mid-term (transitory)**	**Short-term (*locazioni brevi*)**
Legal Basis	Law 431/1998, art. 2 c.1 / c.3	Law 431/1998 + DM 16/01/2017	Tax law; short-let regime
Duration	4+4 or 3+2 years	1–18 months, no renewal	Up to 30 days
Purpose	Primary residence	Documented temporary need	Tourism / short stay
Rent setting	Free (4+4) or capped (3+2)	Free or capped by local pacts	Fully free
Tenant protection	Strong; auto-renewal	None; ends on date	None
***Cedolare secca* rate**	21% (libero) / 10% (*concordato*)	Residential rates (21% / 10%)	21% (1st unit) / 26%
Registration	Registered with tax agency	Registered with tax agency	No lease registration (<30 days)

Table 1 Residential Lease - housing contracts
Source: Agenzia delle Entrate (compiled by author)

There are also specific obligations such as SCIA declarations (a formal start-of-activity communication), mandatory guest registration with the police (per anti-terrorism laws), and the imposition of a tourist tax (*tassa di soggiorno*), as permitted by the Ministry of Tourism, which STR operators must collect from guests. However, compliance with this tax varies. Airbnb, for instance, has entered agreements to automatically collect and remit taxes in some cities, but not all listings were enrolled in this system. Many hosts remained outside the formal framework, either due to lack of knowledge or deliberate avoidance. However, with the institution of the National Identification Code (CIN), managed by the Ministry of Tourism, all accommodation facilities and short-term rentals are required to obtain it and display it outside the property, also to include it in all online advertisements. It has been in force since January 1, 2025. Beyond identification and public display, the CIN regime also attaches baseline safety obligations to short-term rentals, requiring hosts to install gas and carbon-monoxide detectors and to keep a compliant fire extinguisher on the premises.

Important recent court decisions also put some light on the debate of Short-term Rentals regulation in Italy. The Region of Tuscany pursued the regulation of STRs through its 2024 Tourism Code (*Testo Unico del Turismo*), which empowered municipalities prone to high tourist pressure to subject such rentals to limits and prior authorization as a function of land-use planning rather than as an intervention in private contract law. The national government challenged the regional provisions before the Constitutional Court, contending that they trespassed private property, freedom of enterprise, and the State's exclusive competence over civil law; by judgment (Sentenza no. 186/2025), the Court rejected the challenge, holding the provisions constitutionally legitimate since they pursue a "social function" reconciling tourism with residents' housing needs and constitute a legitimate exercise of land-use and tourism-governance powers rather than an expropriative limitation on ownership. This reasoning was subsequently applied at the administrative level: in judgment no. 925/2026, the Regional Administrative Court (TAR) for Tuscany dismissed nineteen appeals against the Municipality of Florence's regulation – including its authorization regime – reasoning, with reference to Sentenza n. 186/2025 Corte Costituzionale (Italia) (2025), that the protection of the urban environment, social and cultural policy objectives, and the preservation of historic and artistic heritage constitute overriding reasons of public interest capable of justifying restrictions on economic freedom. Florence had in fact moved earlier: from 2023 it used its own planning instruments to carve out a “temporary residence” sub-category within residential use and froze new short-term-rental registrations across its UNESCO-protected historic center – a measure later superseded by the comprehensive 2025 regulation that the TAR upheld. The legal architecture behind this municipal route has been articulated by the jurist Giacomo Menegus, and the Florentine model has begun to shape parallel measures in Bologna and proposals in Rome, marking a shift from case-by-case condominium disputes toward systematic, city-wide regulation of short-term rentals.

A similar model was adopted in Emilia-Romagna, with a structurally distinct and more incisive technique, operating not through caps and authorization alone but through the reclassification of short-term rentals as an autonomous urban-planning land-use category. The regional law approved in mid-December 2025 introduced a specific intended-use (*destinazione d'uso*) category for short-term rentals – properties previously retaining their residential classification – thereby obliging owners to effect a formal change of use conditioned upon compliance with stringent safety, hygiene, energy-efficiency, and systems-conformity requirements, and empowering municipalities such as Bologna, Rimini, and Parma to fix maximum percentages of dwellings eligible for short-term rental within designated zones such as historic centers. The national government has challenged this law before the Constitutional Court, and the model's legal standing remains more contested than the Tuscan approach: while the TAR Emilia-Romagna had upheld a municipal regulation premised on the activation of a new urban-planning category, a subsequent Council of State decision has been read within the sector as establishing guidance – grounded in the premise that rental activity falls within exclusive State competence and that municipalities may not regulate competition – susceptible of invocation against the Bologna and Florence regimes alike.

Italian government operates as a constitutionally entrenched multi-level order rather than a unitary State with delegated tasks. The Republic is composed, on an equal footing, of municipalities, provinces, metropolitan cities, regions, and the State, each an autonomous entity with its own statutes and functions (Costituzione della Repubblica Italiana (1947a), (1947c)). Legislative power is divided vertically: Article 117 reserves enumerated matters to the State's exclusive competence (including civil law and the protection of competition), assigns a set of matters to concurrent State–regional competence (including land-use governance – *governo del territorio*), and confers on the regions a general residual competence over everything not expressly reserved to the State, such as tourism (Costituzione della Repubblica Italiana (1947b)). Administrative functions default to the municipality – the level closest to the citizen – and rise to a higher tier only where the principles of subsidiarity, differentiation, and proportionality require it (art. 118). Because competences overlap, the Constitution channels conflicts into adjudication: under Article 127 the central Government may challenge a regional law before the Constitutional Court within sixty days of its publication, and a region may challenge a state law on the same reciprocal terms (art. 127). This litigation route is the mechanism through which the boundaries between the levels are policed.

Legal conflicts have emerged where residents or municipalities attempt to restrict STRs, often invoking the damage to neighborhood life, housing affordability, and community integrity. In response, STR hosts have claimed that such restrictions infringe upon their economic freedoms and violate their constitutional property rights. This tension plays out against Article 42 of the Italian Constitution, which guarantees private property while affirming its social function: Italian civil jurisprudence has increasingly upheld the right of condominium assemblies to limit or even ban STRs where the activity is run on a commercial rather than a genuinely residential basis, especially in high-tourism cities such as Rome and Milan. Italian courts have generally allowed restrictions when clearly expressed in condominium regulations or local zoning plans, but national-level legal clarity is still missing.

In practice, this legal fragmentation has resulted in a regulatory patchwork, with different cities applying different standards. Some regions have started to require hosts to display registration numbers on listings to distinguish legal properties from illegal ones – a policy like what has been adopted in Barcelona and Amsterdam. However, platforms have been slow or resistant to complying, citing data privacy and EU Services Directive protection (Corporate Europe Observatory, 2018).

Italy’s national government has so far avoided adopting a centralized STR regulation, reflecting political caution and the strong influence of the tourism industry and platform lobbies. However, pressure is mounting as housing affordability worsens in tourist-heavy cities. Without a cohesive national framework, municipalities continue to bear the impact of regulation and enforcement, often without adequate legal tools or institutional support.

Despite all efforts, enforcement remains limited due to lack of coordination, platform resistance to data-sharing, and insufficient inspection resources (Colomb & Moreira de Souza, 2021).

Both Brazil and Italy share the same foundational predicament: neither has a dedicated national statute for short-term rentals, and both attempt to govern a platform-mediated phenomenon through legal instruments that predate the sharing economy – Brazil's Tenancy Law (1991) and General Tourism Law (2008), Italy's Law 431/1998 and Tourism Code (2011). In each country, STRs occupy a "grey area" between residential leasing and formal hospitality, escaping tenant protections and, historically, tax and registration obligations. Strikingly, both systems have converged on the same constitutional resolution at almost the same moment: the social function of property. Brazil's Superior Tribunal de Justiça (Brasil) (2026) and Italy's Constitutional Court (Sentenza n. 186/2025), followed by the TAR Tuscany (925/2026), each rejected property-rights and free-enterprise challenges by reframing STR restrictions not as expropriation but as legitimate reconciliations of economic freedom with housing access and urban order. In both, judicial reasoning has outpaced the legislature, and the locus of effective regulation has devolved downward – to Brazilian condominium assemblies and municipalities, and to Italian regions and *comuni*.

The divergences, however, are more revealing than the parallels, and they trace back to institutional architecture and regulatory maturity. Italy operates as a constitutionally established multi-level order (Arts. 114, 117, 118, 127), which both empowers regions to legislate on tourism and land-use and channels every State–

region conflict into a structured Article 127 adjudication before the Constitutional Court – producing the sophisticated Tuscan (authorization-and-zoning) and Emilia-Romagna (land-use reclassification) models now being litigated. Brazil, by contrast, lacks this firm regional competence; its disputes surface fragments through condominium-level litigation rather than a designed federal-conflict mechanism, leaving municipal action comparatively ill equipped. Italy is also noticeably further along on fiscal and administrative codification: it has a fully articulated tax taxonomy (the *cedolare secca* regime, the 30-day boundary, the 26% / 21% short-let rates, and the business-form threshold) and an operative national identification system (the CIN, mandatory since January 2025), whereas Brazil's equivalent fiscal framework has only just emerged through the 2025 tax reform (LC 214/2025) and it still possesses no unified national STR registry. In short, the two countries are addressing an identical regulatory vacuum with the same constitutional vocabulary, but Italy does so through a mature, multi-level legal machinery already generating enforceable sub-national models, while Brazil remains at an earlier, more fragmented stage of building the fiscal and institutional tools that effective STR governance requires.

2.3 Actors in the short-term-rental policy arena

A consistent reading of the two cases also requires mapping the actors that populate the short-term-rental policy arena, since the configuration of interests differs as much as the legal frameworks. In Sao Paulo, the field is dominated by private and judicial actors: condominium associations and individual residents pursuing building-by-building litigation, the hotel lobby represented by the Brazilian Association of the Hotel Industry (ABIH), the real estate and development sector, the City Council and City Hall of São Paulo, and the federal tax authority (*Receita Federal*). In Milan, by contrast, the arena is more institutionalized and politicized: the *Comune di Milano* and the *Regione Lombardia* on the public side; organized tenant unions (*Unione Inquilini*, SUNIA, SICET) and neighborhood movements such as *Abitare in*

Via Padova/Chiediamo Casa on the side of mobilization; the hotel lobby (*Federalberghi*); the platforms themselves (Airbnb, Booking.com), which resist data-sharing; and the *Agenzia delle Entrate*. The decisive contrast is that resistance in São Paulo remains private and judicialized, whereas in Milan it is collective, politicized and explicitly tied to a housing-justice agenda (Coppola et al., 2023; Celata et al., 2020).

2.3.1 Brazil

Brazil's short-term rental (STR) market, like its European counterparts, is structured by a multi-level constellation of actors whose interests frequently collide (Cocola-Gant et al., 2021). Yet the Brazilian configuration is distinctive: in the relative absence of a dedicated national or municipal regulatory framework, two actors that remain peripheral elsewhere – residential condominiums and the judiciary – have become central to how the sector is governed (Souza & Leonelli, 2021). Drawing on the emerging Brazilian scholarship on "platform urbanism" and on recent jurisprudence, this text maps the principal actors and the relations of cooperation and conflict that structure the sector.

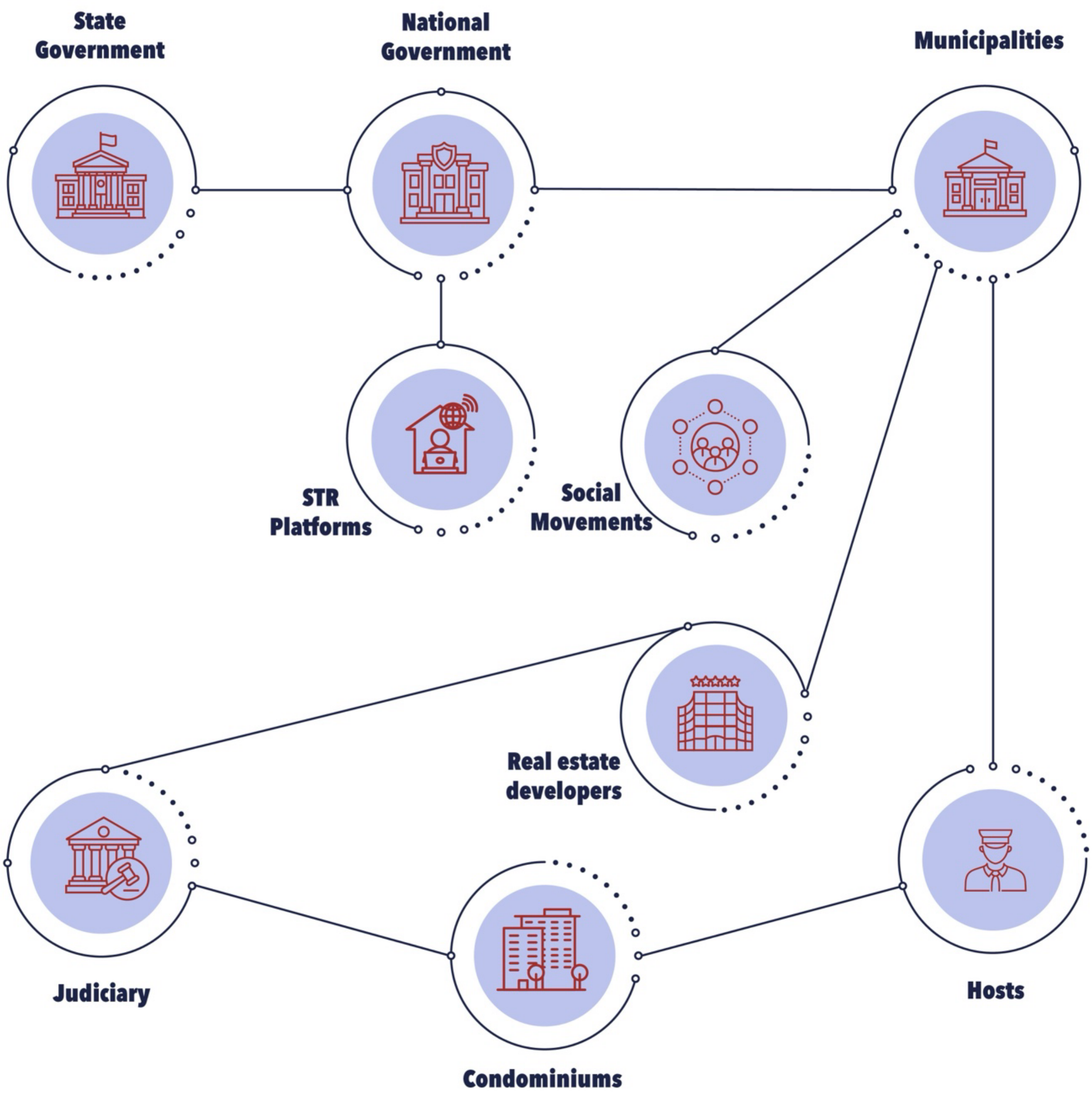

Figure 3 STR actor network in Brazil
Source: author

2.3.1.1 Social Movements and the Politicization of STRs in São Paulo

In contrast to the building-by-building, largely private resistance described above, São Paulo has also seen short-term rentals drawn into the agenda of organized housing movements. The Homeless Workers' Movement (MTST), founded in 1997 and representing tens of thousands of families nationwide, has increasingly framed platform-mediated short-term letting as a contributing factor in the country's housing crisis – a deficit estimated at about 5.8 million homes nationally, of which São Paulo carries the largest share (FJP, 2026). For the MTST and its leadership, notably Guilherme Boulos, the conversion of residential units into tourist accommodation symbolizes the speculative, segregated urban model the movement has long contested: the displacement of low-income residents from central, well-served neighborhoods toward the periphery. The movement's signature tactic – occupying vacant or under-used central buildings to pressure authorities – acquires added symbolic force when set against apartments left empty between short-stay bookings (MTST, 2023).

This politicization sharpened around subsidized housing. Rather than restating the diversion of Social Interest Housing (HIS), Popular Market Housing (HMP) and *Minha Casa, Minha Vida* (My house, My Life Program) units into short-stay circuits documented earlier in "Capture of Subsidized and Social Housing", what mobilized the movements was the scale of the public response: beyond prohibiting the practice, the municipality's May 2025 decree capped rents within the income brackets that each social-housing category targets, and the City Hall formally notified platforms such as Airbnb and Booking.com to create mechanisms blocking listings of these apartments (Rolnik & Mendonça, 2025). Housing movements broadly endorsed the measures as a defense of the programs' original social mission.

The scrutiny culminated in the Parliamentary Commission of Inquiry of Social Housing (CPI da HIS), opened in the São Paulo City Council in September 2025 to investigate irregularities in social interest housing. The inquiry estimated roughly R$5.1 billion in municipal revenue forgone through the onerous granting (*outorga onerosa*) exemption between 2014 and 2025 and identified more than 900 investigation processes covering some 171,000 units; continuing into 2026, it heard testimony from platform representatives including Airbnb and QuintoAndar before approving a final report with recommendations on the city's social-housing policy (Câmara Municipal de São Paulo, 2026). Taken together, the MTST-linked mobilizations, the 2025 decree and the CPI show how Brazilian housing movements have moved short-term rentals to the center of urban-policy debate, reframing them not as a private-market matter but as a question of the right to housing.

2.3.1.2 Platforms and hosts

At the center of the field sit the digital platforms – Airbnb, present in Brazil since 2012 and now active in every state, foremost among them – which intermediate between supply and demand and shape the spatial distribution of listings across the city (Cruvinel, 2024). As elsewhere, the host population is highly heterogeneous, ranging from occasional renters supplementing their income to professionalized, multi-unit operators. The latter exert the strongest pressure on housing availability and rents and are increasingly visible in tourist-intensive areas, including Rio de Janeiro's favelas, where "experience-seeking" demand has pushed prices upward (Souza & Leonelli, 2021). This professionalization drives the gentrification and touristification dynamics widely documented in the international literature (Cocola-Gant, 2016).

2.3.1.3 Government across scales

Public authority over STRs in Brazil is fragmented and, crucially, incomplete. At the federal level no specific STR statute exists; short-term letting is governed residually by the Tenancy Law (*Lei do Inquilinato* n° 8,245/1991), whose short-term rental (*locação por temporada*) permits furnished rentals of up to ninety days (Souza & Leonelli, 2021). State governments play a comparatively minor role, since housing and land-use competences in the Brazilian federation rest primarily with the Union and the municipalities. Municipalities, which hold zoning and local-tax powers, are the level at which regulation is beginning to crystallize – through proposals for registration regimes and restrictions in tourist neighborhoods, notably in Rio de Janeiro – but enforcement remains limited and uneven, leaving substantial room for informal practices (Colomb & Souza, 2023).

2.3.1.4 Condominiums

The regulatory vacuum at the public level has elevated the residential condominium to the status of a de facto regulator. Through their bylaws (*convenção*) and general assemblies, condominiums decide whether units may be used for short-term letting, effectively privatizing a significant share of STR governance. This makes the condominium the most immediate arena of conflict, pitting hosts who seek to monetize their property against resident owners who invoke security, the right to quiet enjoyment, and the residential purpose of the building.

2.3.1.5 The judiciary

Because the legislative framework is thin, these conflicts have migrated to the courts, making the judiciary an unusually decisive actor. After earlier rulings permitting condominiums to restrict STRs, the Superior Tribunal de Justiça (STJ) consolidated its position in May 2026: by a narrow five-to-four majority, the Second Section held that the repeated, professional use of residential units for short-stay letting through platforms such as Airbnb requires authorization by at least two-thirds of co-owners in assembly, on the grounds that such use alters the building's residential purpose (Superior Tribunal de Justiça (Brasil), 2026). The matter was designated a repetitive appeal (Tema 1.443, reporting Justice Raul Araújo), suspending pending cases nationwide pending a binding thesis – an illustration of how, in Brazil, judicial decisions effectively substitute for absent legislation.

2.3.1.6 Conclusion

The Brazilian STR field is therefore governed through an arrangement in which platforms and professionalized hosts accumulate market power while public regulation moves slowly, leaving condominiums and, above all, the courts to arbitrate the resulting conflicts. Compared with the more layered public regulation emerging in Europe, the Brazilian case is marked by the centrality of private collective governance and of jurisprudence (Cruvinel, 2024; Cocola-Gant et al., 2021). Understanding short-term rentals in Brazil thus requires attention not only to market dynamics but to this distinctive displacement of regulatory authority away from the legislature and towards condominiums and the judiciary.

2.3.2 Italy

The Italian short-term rental (STR) market is best understood not as a simple transaction between hosts and guests but as a contested field shaped by a multi-level constellation of actors with divergent interests (Cocola-Gant et al., 2021). Drawing on the recent national report of the Future Urban Legacy Lab (Chiodelli, Beltramo & Ferreri, 2025) and the wider scholarship on platform-mediated tourism, the following are the principal actors and their relations of cooperation and conflicts that structure the sector.

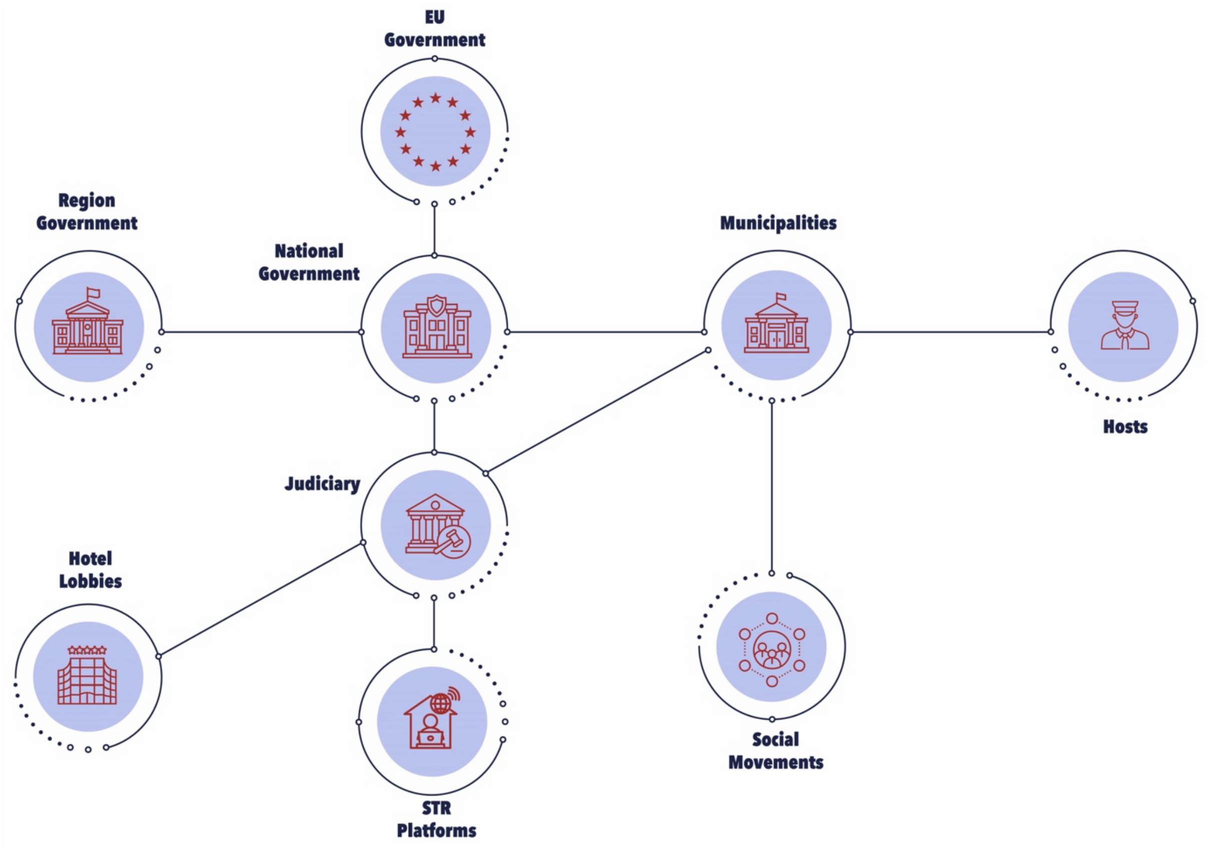

Figure 4 STR actor network in Italy
Source: author

2.3.2.1 Platforms and hosts

At the center of the field sit the digital platforms – Airbnb foremost among them – which act as intermediaries between supply and demand while extracting value from each transaction (Celata & Romano, 2020). Their pricing, ranking and reputation mechanisms exert a structuring influence on where and how STRs proliferate, producing an uneven spatiality of platform-mediated tourism (Celata & Romano, 2020). The hosts who supply accommodation are, in turn, highly heterogeneous. The FULL report shows that, although 84% of Italian hosts in 2024 were "small" owners managing one or two units, the sector has undergone a marked professionalization: "large" hosts (managing more than ten units) represented only 1.3% of operators yet controlled 25% of listings and captured roughly €3.3 billion –

38% of the €8.8 billion in revenue generated on the platform in 2024 (Chiodelli, Beltramo & Ferreri, 2025). This income concentration mirrors patterns observed across Southern European cities, where the entrepreneurial reality of STRs departs sharply from the platform's "home-sharing" narrative (Cocola-Gant et al., 2021).

2.3.2.2 Government across scales

Public authorities intervene across several territorial scales. The European Union has moved to standardize the field through Regulation (EU) 2024/1028, which from May 2026 obliges platforms to verify registration numbers and to share rental data monthly with national authorities through a single digital entry point (European Parliament & Council of the EU, 2024). The national government sets the fiscal and registration architecture – the flat-rate (*cedolare secca*) regime and, from 2025, the mandatory national identification code (*Codice Identificativo Nazionale*, *CIN*) – which platforms are required to enforce. Regional governments mediate between national rules and devolved tourism competences, while municipalities are the actors most directly confronted with the housing externalities of STRs, since the conversion of dwellings into tourist accommodation reduces residential supply and fuels displacement (Celata & Romano, 2020; (Rossi & d'Addona, 2025)). Cities such as Florence, Venice and Rome have accordingly experimented with caps, registration regimes and limits on new permits in their historic centers (Bei, 2023).

2.3.2.3 The judiciary

Municipal action, however, does not unfold in a legal vacuum. The judiciary has emerged as a decisive actor: in 2024 the Regional Administrative Court of Tuscany (TAR Toscana) effectively overturned Florence's pioneering ban on new STRs in its UNESCO-listed historic center, illustrating how courts can constrain local regulatory autonomy when restrictive measures are challenged by organized host and property interests.

2.3.2.4 Hotel lobbies and social movements

Two organized constituencies pull the field in opposite directions. Incumbent accommodation interests – represented most prominently by the hotel lobby *Federalberghi* – frame STRs as a source of unfair competition and press for stricter regulation, whereas host and property-owner associations (such as Property Managers Italia and *Confedilizia*) defend the sector and have successfully litigated against restrictive local measures. On the other side, urban social movements and housing activists mobilize against the displacement and "touristification" associated with STR growth, reframing the issue as one of the rights to housing and the defense of resident communities (Cocola-Gant, 2016; Celata & Romano, 2020).

2.3.2.5 Conclusion

The Italian STR field is thus governed through a fragmented, multi-scalar arrangement in which platforms and professionalized hosts accumulate economic power, governments at four levels attempt – often with limited coordination – to regulate it, courts arbitrate the resulting conflicts, and organized lobbies and grassroots movements contest the legitimacy of both market and regulation. Understanding short-term rentals in Italy therefore requires attention not only to aggregate market data but to the relational dynamics among these actors (Chiodelli, Beltramo & Ferreri, 2025; Cocola-Gant et al., 2021).

Both Brazil and Italy portray multi-actor STR field rather than a simple host–guest transaction, and they converge on several points on the other hand. In each country the digital platforms – Airbnb above all – sit at the center as value-extracting intermediaries that shape where listings concentrate; the host population is similarly heterogeneous, split between occasional small owners and a growing class of professionalized, multi-unit operators whose expansion drives the same gentrification and touristification dynamics. In both cases, the judiciary emerges as a decisive arbiter, and the underlying conflict is structurally identical: hosts seeking to monetize property against residents and incumbents defending the residential character of buildings and neighborhoods.

The decisive difference lies where regulatory authority sits. Italy is governed through a layered architecture of public regulation operating across four scales – EU (Regulation 2024/1028), national (the *cedolare secca* tax and the mandatory CIN), regional, and municipal (caps and permit limits in Florence, Venice and Rome) – and the field is openly politicized by organized constituencies, from the hotel lobby *Federalberghi* to housing social movements. Brazil, by contrast, is marked by a regulatory vacuum: with no dedicated national statute (short letting falls residually under the Tenancy Law) and only nascent municipal rules, authority is displaced downward and sideways onto private collective governance – the residential condominium, which decides through its assembly whether units may be let – and onto the courts, with the STJ's 2026 ruling (Tema 1.443) effectively substituting jurisprudence for absent legislation. In short, the same actors appear in both settings, but Italy concentrates governance in public, multi-scalar institutions, whereas Brazil pushes it toward private condominiums and the judiciary.

2.4 Municipal Responses and Urban Governance

2.4.1 São Paulo

In the absence of comprehensive federal regulation, São Paulo's municipal response to the proliferation of short-term rentals (STRs) has relied on fragmented judicial rulings, contested urban planning mechanisms, and emerging community-led resistance. The ruling in Court Decision n° 1.819.075/RS, to acknowledge the right of residential condominiums to prohibit STRs through internal agreement established jurisprudential support for buildings aiming to control or limit STRs and has since been referenced in similar cases across Brazil. Reflecting the judiciary's growing role in shaping STR governance, from May 2026 the very recent Tema 1.443

shifted decision priorities; at least two-thirds of the unit owners must approve short-term rentals, rather than rejecting their operation within the condominiums. This landmark decision redefined the legal understanding of STRs, classifying them as transient, commercial activities incompatible with the residential nature of condominium living.

São Paulo's system has two tiers that work together. At the top is the *Plano Diretor Estratégico PDE* (São Paulo's Master Plan), which organizes the municipality through *macrozonas* and *macroáreas* – homogeneous territories that set the broad development objectives – chiefly the Macrozone of Urban Structuring and Qualification and the Macrozone of Environmental Protection, complemented by a Metropolitan Structuring Network. The PDE establishes the strategic logic of where the city should grow and where it should be preserved; the detailed, lot-by-lot rules are then set by the *Zoneamento* (the Land Use and Occupation Law), which the *Prefeitura* describes as a change of scale – translating the macro-areas and axes of the PDE down to the level of individual blocks and lots, defining permitted uses and occupation rules for each.

The defining feature is the *Eixos de Estruturação da Transformação Urbana* – the structuring axes that link mobility to urban development. The explicit goal is to reverse São Paulo's historic development pattern and broaden the "right to the city" by optimizing existing infrastructure: concentrating density and land-use intensity along the medium and high-capacity public transport network. These axes are defined geometrically by the *Prefeitura* as the blocks falling within a 150-meter band on each side of bus corridors and within a 400-meter radius of metro and train stations, so the highest-intensity zoning follows transit rather than spreading uniformly.

That logic is expressed through the zone categories and the buildable coefficients. Areas along transit are mapped as structuring-axis zones (*Zona Eixo de Estruturação*, ZEU, and the foreseen ZEUP), where the maximum floor-area coefficient can reach 4 when the requirements of the PDE (Law 16.050/2014) are met; quieter areas are protected as Exclusively Residential Zones (*Zonas Exclusivamente Residenciais*, ZER-1 and ZER-2) with low density, while Social Interest Housing Zones (ZEIS) keep the rules set in the PDE. The financing mechanism is the *outorga onerosa*: whenever a project uses a floor area coefficient above the basic level, the developer must pay for that additional construction potential, channeling the value of denser development back to the city.

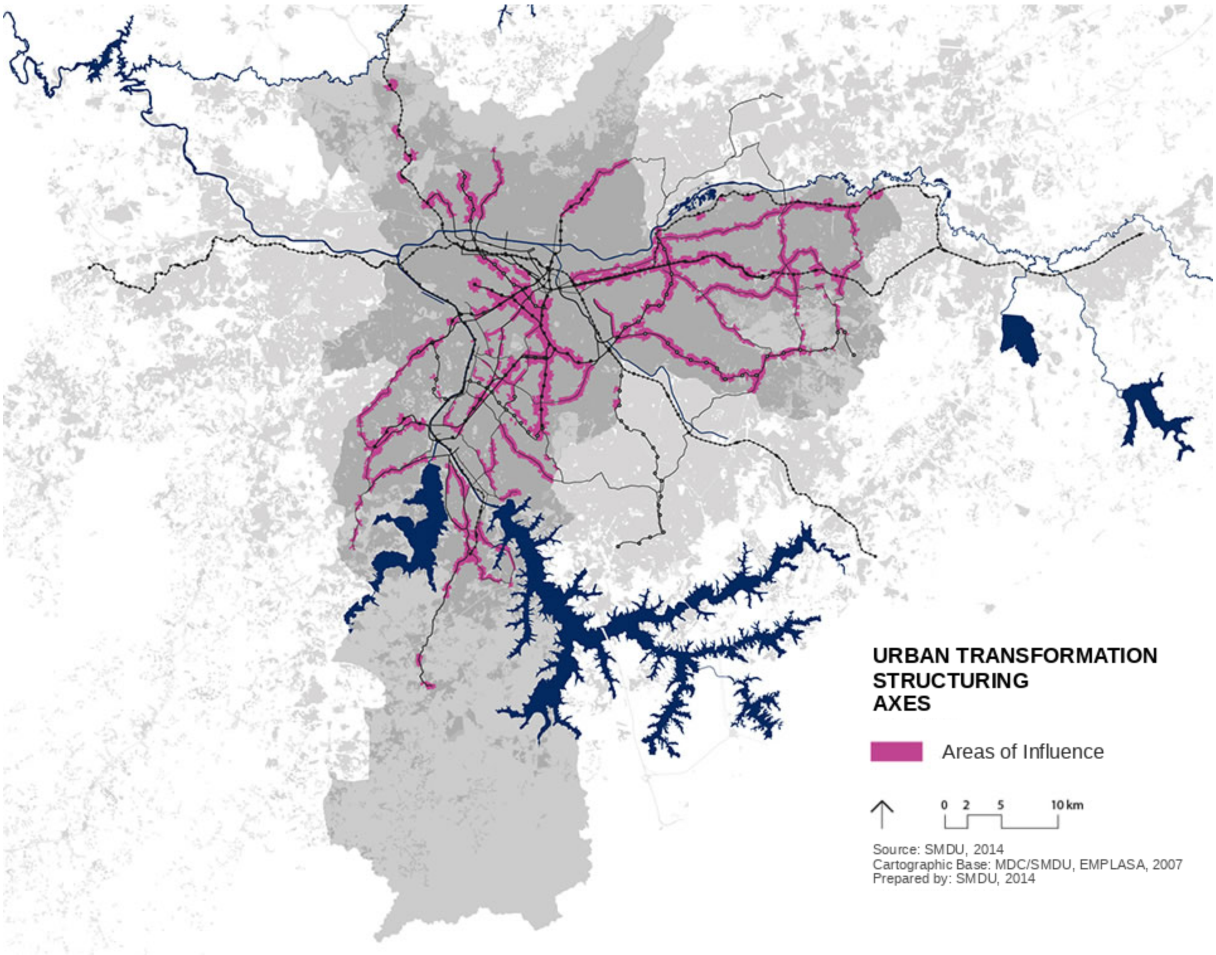

Figure 5 Urban transformation structuring axes in the municipality of São Paulo
Source: Prefeitura de São Paulo (2014)

Urban planner and scholar Raquel Rolnik has extensively criticized how São Paulo's Master Plan (*Plano Diretor Estratégico 2014*), intended to create inclusive and affordable urban housing, was exploited by real estate developers. The plan's incentives for vertical, mixed-use construction near transit hubs (*Zonas Eixo de Estruturação da Transformação Urbana*) were manipulated by developers to build micro-units tailored for STR investment, rather than permanent housing. These buildings often lack basic infrastructure, such as parking, storage, or common areas, making them unsuitable for long-term residency. Rolnik contends this has fueled a speculative logic that ruins the city's capacity to address its housing deficit and intensifies displacement in central neighborhoods (Rolnik, 2019).

This new Zones policy was a transit-oriented-development tool. Along structuring transit axes the plan raised the maximum *coeficiente de aproveitamento* (floor-area ratio) up to 4, removed minimum parking requirements, eliminated or lowered minimum unit-size floors, and rewarded mixed use and active ground floors. The stated goal was to densify near transit, reduce car dependence, and put more people close to mobility. The instrument was an incentive: build the form we want, and you get a higher buiding index (mediated through *outorga onerosa*, the sale of additional development rights).

The problem is that zoning is essentially blind to who lives in a unit and for how long. A residential unit is classified as "residential" whether it is owner-occupied, rented for a year, or rented by the night. Short-term rental was not classified as a hotel or commercial-hospitality use, so it escaped the rules that do constrain hospitality (hotel zoning, hospitality licensing, etc.). Nothing in the incentive said, "this floor area must become permanent housing" – only "this much floor area, in this form, in this category."

So, developers solved the optimization the plan actually wrote. Remove the parking minimum and the unit-size minimum, and the most profitable product per square meter (and per unit of bonused FAR) becomes a maximum count of tiny studios. Skip storage, common areas, and family-sized layouts, because those consume sellable areas without adding sellable units. The result is a building that is excellent as an investment vehicle – small tickets, high yield, easy to flip into STR – and poor as a place to live permanently. The incentive meant to produce housing instead produced a speculative asset class.

This is the core of Rolnik's critique: when planning works primarily through market incentives ("*urbanismo de mercado*"), the incentive parameters become arbitrage opportunities. Capital responds to the literal rule, not the planner's intention. The regulations weren't absent; they were under-specified on the dimensions that determine whether new supply addresses the housing deficit – minimum livability standards, caps on micro-unit share, requirements tying bonused area to permanent or affordable housing, and an explicit regulatory category for short-term rental. Without those, "more units near transit" and "more permanent housing near transit" quietly came apart.

Neighborhoods like Vila Madalena, Bela Vista, Pinheiros, and Consolação have become hotspots for STR activity. The resulting increment in tourism and rapid exchange of residents has provoked a series of community concerns, including noise pollution, waste mismanagement, security breaches, and the gradual hollowing out of neighborhood identity. In the absence of municipal regulation, many condominium associations have initiated their own internal covenants to restrict STR operations, supported by legal professionals and tenant coalitions. However, enforcement varies widely depending on resident organization, legal capacity, and judicial sympathy.

Despite these mounting tensions, São Paulo has not yet adopted a formal municipal policy on STRs. The city has neither introduced mandatory registration for STR hosts nor established a tourist tax comparable to those in other global cities. This regulatory inaction allows platforms to operate largely unchecked, contributing to tax avoidance and weakening city planning mechanisms. Unlike cities such as Barcelona or Amsterdam, São Paulo lacks access to real-time STR data from platforms, which undermines the capacity of municipal authorities to monitor, assess, and regulate the impact of STRs on housing markets.

Local politicians have debated the issue, but legislative inertia, lobbying pressure from real estate and tourism sectors, and the constitutional protection of private property have slowed any power toward reform. As it stands, São Paulo’s STR landscape remains governed by fragmented legal interpretations and market logic, exposing residents to rising rental prices and weakening the social cohesion of residential communities.

2.4.2 Milan

Milan has adopted a more structured but still incomplete response to STR growth. In line with national laws, hosts in Milan are required to file a SCIA (*Segnalazione Certificata di Inizio Attività*) declaration to notify the local administration of their commercial activity. This filing is necessary for administrative inspection and is often required to qualify for legal STR operation. In addition, Italian anti-terrorism laws mandate that STR hosts register guest information with local police, a policy aimed at tracking short-term population flows and enhancing security.

A critical barrier to effective municipal supervision is the limited cooperation from digital platforms. Companies like Airbnb and Booking.com have resisted calls for greater transparency, citing concerns about user privacy and invoking the EU Services Directive to argue against mandatory data sharing. Milan’s local authorities lack direct access to disaggregated data, such as host identities, occupancy rates, and property usage frequency. Without this information, city officials cannot accurately assess the density of STRs in residential zones or target enforcement efforts effectively (Corporate Europe Observatory, 2018).

Civil society organizations have played a leading role in Milan's urban STR debate. Grassroots movements such as *Unione Inquilini* and *Abitare in via Padova* have mobilized tenants, workers, and students to protest evictions and the increasing touristification of traditionally residential districts. These groups have demanded stronger protections for renters, including primary residence requirements, annual day limits for STRs, and moratoria on new licenses in saturated zones such as Isola, Navigli, Nolo, and Brera. Their advocacy has raised awareness about the connection between STR proliferation and housing exclusion, but it has not yet resulted in comprehensive municipal legislation. An example is the bill proposed by *Social Forum dell'Abitare* (2023). It aims to introduce provisions regarding short-term rentals aimed at addressing, particularly in municipalities with high housing tension, the increasingly evident problem of the shortage of housing available for long-term residential rentals and the resulting impoverishment of the economic and social fabric of historic city centers. The bill has stalled in the Chamber of Deputies since 2024.

Milan's zoning is governed by the *Piano di Governo del Territorio (PGT) "Milano 2030*," in force since February 2020. It is not a single map but a set of three coordinated instruments: the *Documento di Piano* (the strategic vision and quantitative targets), the *Piano delle Regole* (the binding rules that classify every part of the existing city and set building parameters), and the *Piano dei Servizi* (which programs public facilities, green space, and services). The *Comune* frames the whole plan around three priority objectives: expanding the supply of affordable rental housing, protecting the territory by reducing land consumption, and regenerating the peripheries to make the city more equitable and sustainable.

The operational core sits in the *Piano delle Regole*, which divides the Consolidated Urban Fabric (*Tessuto Urbano Consolidato*, TUC) into three macro-fabrics: the Ancient Formation Nuclei (*Nuclei di Antica Formazione*, NAF – the historic cores), the Areas with a Recognizable Urban Design (*Ambiti contraddistinti da un Disegno urbano Riconoscibile*, ADR), and the Urban Renewal Areas (*Ambiti di Rinnovamento Urbano*, ARU). Rather than assigning a different building index to each parcel/area , the plan applies a single uniform buildability index of 0.35 m^2/m^2 across essentially the whole city (agricultural areas excepted) This uniform-index approach is meant to treat all neighborhoods equally and steer transformation toward already-built areas instead of rigidly segregating functions.

The plan uses incentives rather than pure prescription to pursue its social and environmental goals. Private developers are allowed to exceed the maximum buildability index in accessible parts of the city if they provide social housing – subsidized rentals, assisted-sale units, and co-housing – which is how Milan ties extra development rights to its affordable-housing objective. On land consumption, the Variant reduces the urbanizable surface from roughly 3.5 million m^2 to about 1.8 million m^2 (a saving of around 1.7 million m^2), lowering the share of urbanized land from 74% to 70%. Regeneration is reinforced through the large Metropolitan Park project, connecting Parco Nord and Parco Sud via ecological links and designated Environmental Regeneration Areas.

While Milan has shown greater administrative engagement than São Paulo, the city still lacks an integrated STR policy that links housing, urban planning, and tourism regulation. There are no spatial zoning restrictions specifically addressing STR concentration, nor is there a dedicated agency entrusted with STR enforcement. Municipal inspection capacity remains limited, and fines for violations are rarely levied or collected. Consequently, the STR market in Milan operates in a semi-regulated state, shaped more by platform governance and market incentives than by public regulation.

This gap in enforcement and coordination has allowed STRs to proliferate in high-demand districts, reducing the availability of long-term rentals, inflating property prices, and exacerbating the displacement of vulnerable residents. Like São Paulo, Milan's municipal governance remains reactive rather than strategic, dependent on fragmented legal tools and advocacy rather than systemic reform.

2.4.3 Socio-Territorial Implications of Legal Gaps

The legal ambiguities surrounding short-term rentals (STRs) in both Brazil and Italy have profound consequences not only for governance but also for the social and spatial fabric of cities. In the absence of comprehensive regulation, STRs have proliferated in central and well-connected urban areas, reshaping neighborhood demographics and contributing to broader patterns of urban inequality.

One of the most pressing socio-territorial consequences is the role of STRs in accelerating gentrification and enabling real estate speculation. Without legal barriers or taxation equal to that of commercial accommodations, investors have increasingly targeted housing stock in tourist-prone areas for STR use. Raquel Rolnik situates the proliferation of short-term rentals within a broader process she terms the financialization of housing, in which housing is reconfigured as a financial asset rather than a use-value. In her account, the 2008 mortgage crisis displaced the frontier of capital accumulation from ownership toward rental, and digital platforms such as Airbnb became instruments through which investors could treat housing as a denationalized and privatized liquid asset that escapes the reach of national tenancy law (Rolnik et al. (2019); Marín-Toro & Rolnik (2020)).

The displacement that follows is, for Rolnik, a structural sequence rather than an incidental effect: housing stock is withdrawn from the long-term rental market and converted into short-stay inventory, available supply contracts, rents rise sharply, and lower-income and working residents who depend on central locations are pushed outward. This dynamic is accompanied by rising evictions that fall most heavily on non-white, young, and otherwise vulnerable tenants. Crucially, Rolnik argues that the phenomenon in São Paulo has moved well beyond the casual logic of the "sharing economy," noting that there are even companies building units specifically for Airbnb, that is, units conceived from the outset as yield-bearing assets never intended for long-term occupancy (Rolnik 2019).

The spatial concentration of this process is most acute in São Paulo's central districts, where the financialized rental market overlaps with the highest residential densities and the strongest tourist demand. Mapping by the LabCidade team found that Airbnb listings cluster overwhelmingly in the central belt – República, Sé, Bela Vista, Consolação, and Santa Cecília – with República registering the most intense pressure: roughly 6.7% of all households listed on the platform, exceeding 20% of residential units on some individual blocks (Rolnik & Mendonça 2025). The significance of this concentration lies in its coincidence with neighborhoods that have historically housed lower-income and working populations close to employment and transit, precisely the residents most exposed to the supply contraction and rent escalation that Rolnik describes; indeed, between 2017 and 2023 the growth of one-bedroom units offered on Airbnb in districts such as República and Consolação outpaced new residential construction in the same period, while multi-property hosts came to account for the majority (69%) of all listings in the city (Rolnik & Mendonça, 2025). More recently, researchers and municipal authorities have documented subsidized program *Minha Casa, Minha Vida* (My House, My Life) and Social Interest Housing (*HIS*) units in these same central areas being diverted into short-term rental circuits, a development that prompted a municipal decree (Decreto No 64.244/2025) restricting the practice and a public inquiry (Rolnik & Mendonça, 2025).

A comparable dynamic is observable in Milan, where short-term rentals have been analyzed through the lens of rent-gap theory as a driver of displacement that operates faster than conventional gentrification (Amore et al., 2022). As long-term housing stock is withdrawn and reallocated to more profitable short stay uses, the resulting rent gap is captured by investors rather than residents, contracting rental supply and pushing up prices in precisely the central, high demand areas where the platform concentrates. This concentration is markedly uneven across and within Italian cities: Airbnb diffusion clusters in central districts while remaining sparse in the periphery, intensifying housing pressure where it is already most acute (Congiu et al., 2025). Municipal open data show that Milan's short-term-rental supply is heavily concentrated in a handful of central, historically mixed neighborhoods, with Isola and the Navigli (Ticinese – Conca del Naviglio) ranking among the city's ten most affected districts, at roughly 560 listed units each (Comune di Milano, 2024). The cumulative effect is a reorganization of tenure and ownership that erodes the long-term rental market and falls most heavily on the lower-income and more precarious residents least able to absorb rising central rents (Amore et al., 2022).

A key factor identified is overtourism (Celata et al., 2020) and the spread of short-term rentals via digital platforms, which have converted a significant share of residential housing into tourist accommodation. This has made tourism more invasive and difficult to regulate using traditional planning tools. Unlike many European cities, Italy lacks effective regulation on where, how, and for how long properties can be rented to tourists.

The authors (Celata et al., 2020) reject the idea that the issue is mainly fiscal or related to unfair competition with hotels, arguing instead that the core problem concerns the right to the city and to housing. City centers have been transformed into spaces of consumption and tourism, losing social functions, resident-oriented services, and economic diversity.

Legal escape clauses also allow STR saturation in transit-connected and tourist-frequented zones, intensifying the pressure on already strained housing markets. In São Paulo, the areas near metro lines, cultural centers, and business districts have seen an influx of STRs, facilitated by the same urban planning tools meant to support affordable, transit-oriented development. Instead of promoting residential diversity, these tools have inadvertently subsidized real estate speculation.

The unregulated expansion of STRs has a direct impact on rental markets and long-term affordability. A growing body of quasi-experimental research establishes that the expansion of short-term rentals (STRs) exerts measurable upward pressure on housing costs by diverting dwellings away from the long-term market. Analyzing Airbnb's growth across roughly two dozen U.S. metropolitan areas, Barron, Kung, and Proserpio (2021) find that a 1% increase in Airbnb listings is associated with a 0.018% rise in rents and a 0.026% rise in house prices, and they attribute this effect specifically to the reallocation of housing stock from long-term residential use to short-term tourist accommodation rather than to rising local demand. Evidence from Europe points in the same direction: exploiting the precise timing and geography of Airbnb activity in Barcelona, (Garcia-López et al., 2020) show that the platform raised both rents and sale prices – with the largest increases in the neighborhoods most exposed to Airbnb – while simultaneously contracting the supply of units available for permanent residents. Quasi-experimental work by (Koster et al., 2021) corroborates the causal nature of this relationship from the opposite direction, demonstrating that home-sharing ordinances restricting STR activity in Los Angeles produced significant reductions in local rents and housing prices. Taken together, these studies converge on a consistent finding across diverse regulatory and market contexts: the presence of STRs is associated with significant increases in rental prices and a contraction of the housing stock available to permanent residents.

In both Brazil and Italy, the legal ambiguities surrounding short-term rentals (STRs) carry consequences that reach far beyond questions of governance, reshaping the social and spatial fabric of cities. Where STRs are permitted to operate without legal barriers or taxation equivalent to that imposed on commercial accommodation, the regulatory gap ceases to be neutral: it functions in practice as a subsidy to speculation, channeling centrally located housing toward tourist yield. The most pressing socio-territorial implication of this arrangement is the role of STRs in accelerating gentrification and enabling real estate speculation, the dynamics of which are set out below.

2.5 Financialization: Housing Reconfigured as a Financial Asset

Without equivalent taxation or regulatory friction, investors have increasingly targeted housing stock in tourist-prone areas for conversion to STR use. Raquel Rolnik situates this proliferation within a broader process she terms the financialization of housing, in which housing is reconfigured as a financial asset rather than a use-value

(Rolnik et al., 2019; Marín-Toro & Rolnik, 2020). On her account, the 2008 mortgage crisis displaced the frontier of capital accumulation from ownership toward rental, and digital platforms such as Airbnb became the instruments through which investors could treat housing as a denationalized, privatized, and liquid asset that escapes the reach of national tenancy law. The clearest symptom of this shift in São Paulo is the emergence of companies building units specifically for Airbnb, that is, units conceived from the outset as yield-bearing assets never intended for long-term occupancy, a development that moves the phenomenon well beyond the casual logic of the sharing economy (Rolnik, 2019).

2.6 Displacement as a Structural Sequence

For Rolnik, the displacement that follows is a structural sequence rather than an incidental effect. Housing stock is withdrawn from the long-term rental market and converted into short-stay inventory; available supply contracts; rents rise sharply; and lower-income and working residents who depend on central locations are pushed outward. This dynamic is accompanied by rising evictions that fall most heavily on non-white, young, and otherwise vulnerable tenants. Because STRs concentrate precisely where these residents live, the populations least able to absorb rising central rents are also the most exposed to the supply contraction and rent escalation the model predicts (Rolnik et al., 2019).

2.7 Spatial Concentration in Central, Historically Working-Class Districts

The spatial concentration of this process is most acute in São Paulo's central districts, where the financialized rental market overlaps with the highest residential densities and the strongest tourist demand. Mapping by the LabCidade team found that Airbnb listings cluster overwhelmingly in the central belt – República, Sé, Bela Vista, Consolação, and Santa Cecília – with República registering the most intense pressure: roughly 6.7% of all dwellings listed on the platform, exceeding 20% of residential units on some individual blocks (Rolnik & Mendonça, 2025). Between 2017 and 2023, the growth of one-bedroom units offered on Airbnb in districts such as República and Consolação outpaced new residential construction over the same period, while multi-property hosts came to account for the majority (69%) of all listings in the city (Rolnik & Mendonça, 2025).

A comparable concentration is observable in Milan. Airbnb diffusion clusters in central districts while remaining sparse in the periphery, intensifying housing pressure where it is already most acute (Congiu et al., 2025). Listing level data scraped from the Airbnb platform confirm this pattern: from the more than 20 thousand active listings in June 2025, nearly 88% were entire homes rather than spare rooms, and almost half (46%) were concentrated in just ten of the city's 88 NILs (Inside Airbnb, 2025). Supply is densest in the historic core and the ring around it – Buenos Aires – Porta Venezia (1,836 listings), Duomo (1,588), Sarpi (975), centrale (955), and Brera (942) together account for more than a quarter of the city total. The clustering also extends into formerly working class and artisanal districts that have since gentrified: the Navigli-Ticinese canal area (855 and 880 listings) and Isola (714) rank among the ten most affected. Because these listings are overwhelmingly whole units withdrawn from the long-term market, their concentration in central, transit-rich neighborhoods compounds affordability pressure precisely where demand for resident housing is greatest.

2.8 Capture of Subsidized and Social Housing

The speculative logic has proven capable of overriding even the public, redistributive purpose of subsidized stock. Researchers and municipal authorities have documented units from the Minha Casa, Minha Vida (My House, My Life) program and Social Interest Housing (HIS) in São Paulo's central areas being diverted into short-term rental circuits. This development prompted a municipal decree (*Decreto* No. 64.244/2025) restricting the practice, together with a public inquiry (Rolnik & Mendonça, 2025).

In Milan, the same speculative capture has touched even the emblematic developments of the city's social housing and price-capped, publicly anchored housing built on convention with the municipality. The clearest documented case concerns the Merezzate district in Rogoredo–Santa Giulia, an agreed fee development managed by Redo SGR: units intended for income-capped tenants were instead advertised for tourist and short-term stays on Airbnb. Acting with Redo SGR, the municipality opened control procedures and formally terminated the lease of the apartment at via Eugenio Colorni 4, while opening a parallel inquiry into a second unit that had been purchased at the agreed price and then irregularly let for tourist stays – capture operating through both the rental and ownership channels (Comune di Milano, 2022a). The housing assessor, Pierfrancesco Maran, framed it openly, stating that the irregular use of apartments meant for agreed rent or sale "violates the rules and the spirit of social housing" and that the city would maintain its vigilance should new cases emerge. The problem did not stop at short-term platforms: in a follow-up, the Comune reported intercepting – on more conventional real-estate listing sites – a buyer and his agent attempting to re-let a subsidized apartment on Via Antegnati at €1,200 a month, well above the capped regime, with the listing promptly removed (Comune di Milano, 2022b). The municipality characterized such "speculative initiatives" as in open contrast with the values and spirit of social and subsidized housing and announced continuing verifications to ensure that the agreed stock is used as intended. Together, these episodes show that in Milan, as in São Paulo, the redistributive purpose embedded in the agreement can be overridden by the incentive to exploit the gap between a capped social rent and a market rate, with enforcement remaining largely reactive.

2.9 The Rent Gap and Accelerated Displacement in Milan

In Milan, STRs have been analyzed through the lens of rent-gap theory as a driver of displacement that operates faster than conventional gentrification (Amore et al., 2022). Because the rent gap is potential rent – the disparity between the capitalized ground rent performed under current use and the higher rent achievable under a more profitable one – it pre-exists the use that makes its exploitation possible; it lies in central, high-demand areas regardless of how the housing is currently used. STRs do not generate this gap but supply the mechanism to capture it: as long-term housing stock is withdrawn and reallocated to more profitable short-stay use, the hidden rent gap is captured by investors rather than residents, contracting rental supply and pushing up prices in precisely the central, high-demand areas where the platform concentrates. The cumulative effect is a reorganization of tenure and ownership that erodes the long-term rental market and falls most heavily on the lower-income and more precarious residents least able to absorb rising central rents (Amore et al., 2022).

2.10 Overtourism and the Right to the City

Although the tourism industry has brought social and economic positive contributions, Aguilera et al. (2025) highlights it caused externalities to communities and the urban territory. A further implication concerns overtourism and the spread of STRs via digital platforms, which together have converted a significant share of residential housing into tourist accommodation, making tourism more invasive and harder to regulate with traditional planning tools (Celata et al., 2020). Notably, Celata and colleagues reject the framing of the issue as primarily fiscal or as a matter of unfair competition with hotels, arguing instead that the core problem concerns the right to the city and housing. City centers have been transformed into spaces of consumption and tourism, losing social functions, resident-oriented services, and economic diversity. Italy, unlike many European countries, lacks effective regulation on where, how, and for how long properties may be rented to tourists.

2.11 The Inversion of Transit-Oriented Planning Tools

Legal escape clauses also permit STR saturation in transit-connected and tourist-frequented zones, intensifying pressure on already strained housing markets. In São Paulo, areas near metro lines, cultural centers, and business districts have seen an influx of STRs, facilitated by the very urban planning tools meant to support affordable, transit-oriented development. Rather than promoting residential diversity, these instruments have inadvertently subsidized real estate speculation.

2.12 Measurable Effects on Rents and Long-Term Affordability

Taken together, studies about the expansion of STRs estimating the impacts on housing cost affordability converge on a consistent finding across diverse regulatory and market contexts: the presence of STRs is associated with significant increases in rental prices and a contraction of the housing stock available to permanent residents.

Dimension	São Paulo (Brazil)	Milan (Italy)
Regulatory & fiscal status	No comprehensive STR regulation; no taxation equivalent to commercial lodging. Transit-oriented planning tools meant for affordable housing end up subsidizing speculation.	Italy lacks effective rules on where, how, and for how long properties may be rented to tourists. STRs escape the planning tools used for traditional accommodation.
Driving mechanism / theory	Financialization of housing (Rolnik): housing reconfigured as a liquid financial asset that escapes national tenancy law; capital shifts from ownership to rental after 2008.	Rent-gap theory (Amore et al.): reallocation of long-term stock to short stays opens a rent gap captured by investors, driving displacement faster than conventional gentrification.
Spatial concentration	Listings cluster in the central belt. República shows ~6.7% of all households listed, exceeding 20% of units on some blocks. Multi-property hosts hold 69% of all city listings.	Diffusion concentrates in central districts, sparse in the periphery. Isola and the Navigli (Ticinese – Conca del Naviglio) rank among the ten most affected districts, ~560 units each.
Most affected neighborhoods	República, Sé, Bela Vista, Consolação, Santa Cecília – central, historically lower-income areas close to jobs and transit.	Isola, Navigli / Ticinese, and other central, historically mixed neighborhoods.
Displacement dynamic	Long-term stock withdrawn → supply contracts → rents rise → lower-income residents pushed out; evictions fall hardest on non-white, young, and vulnerable tenants. 1-bed Airbnb growth (2017–23) outpaced new construction.	Withdrawal of long-term stock erodes tenure and ownership; rising central rents fall most heavily on lower-income, precarious residents least able to absorb them.
Impact on social / subsidized housing	Documented diversion of Minha Casa, Minha Vida and Social Interest Housing (HIS) units into STR circuits in central areas.	Centrally concentrated pressure on a historically mixed housing stock; loss of resident-oriented services and economic diversity (overtourism).
Policy / regulatory response	Municipal Decree No. 64.244/2025 restricting STR use of social housing, plus a public inquiry.	Reliance on municipal open data; no effective national STR regulation. Debate reframed around the right to the city and housing, not merely fiscal fairness.
Framing of the core problem	Speculation and the conversion of housing into yield-bearing inventory; the legal vacuum acts as a de facto subsidy to investors.	Celata et al.: not primarily fiscal or unfair competition with hotels, but the right to the city – centers turned into spaces of consumption.

Table 2 Comparative synthesis of platform short-term-rental dynamics in São Paulo and Milan
Source: author's elaboration based on Rolnik (2019; Rolnik & Mendonça, 2025), Amore et al. (2022), Celata & Romano (2022) and Congiu et al. (2025), with municipal data for São Paulo and Milan.

Without regulatory enforcement and active policy intervention, STRs will continue to reproduce and amplify these inequalities. The legal vacuum around STRs is not neutral, it shapes who can live in the city, who profits from urban space, and who bears the cost of deregulation.

CHAPTER 3 – CASE STUDY CHARACTERIZATION

3.1 São Paulo

3.1.1 Urban Characteristics and Housing Inequality in São Paulo

The urban fabric of São Paulo reflects the historical and ongoing tensions between economic growth, rapid urbanization, and deep-rooted social inequality. Since the mid-20th century, São Paulo has experienced accelerated industrialization and demographic expansion, processes that have significantly shaped its spatial configuration. The city developed according to a center-periphery model, where affluent populations concentrated in central districts with robust infrastructure, services, and access to opportunities, while working-class and low-income groups were pushed to peripheral zones lacking basic urban provisions. This spatial pattern, marked by severe segregation and territorial inequality, has become a defining characteristic of São Paulo's urban landscape (Caldeira, 2023).

Below we can see the map of the expansion of the urbanized area of the municipality of São Paulo throughout its history, from 1881 to 2002.

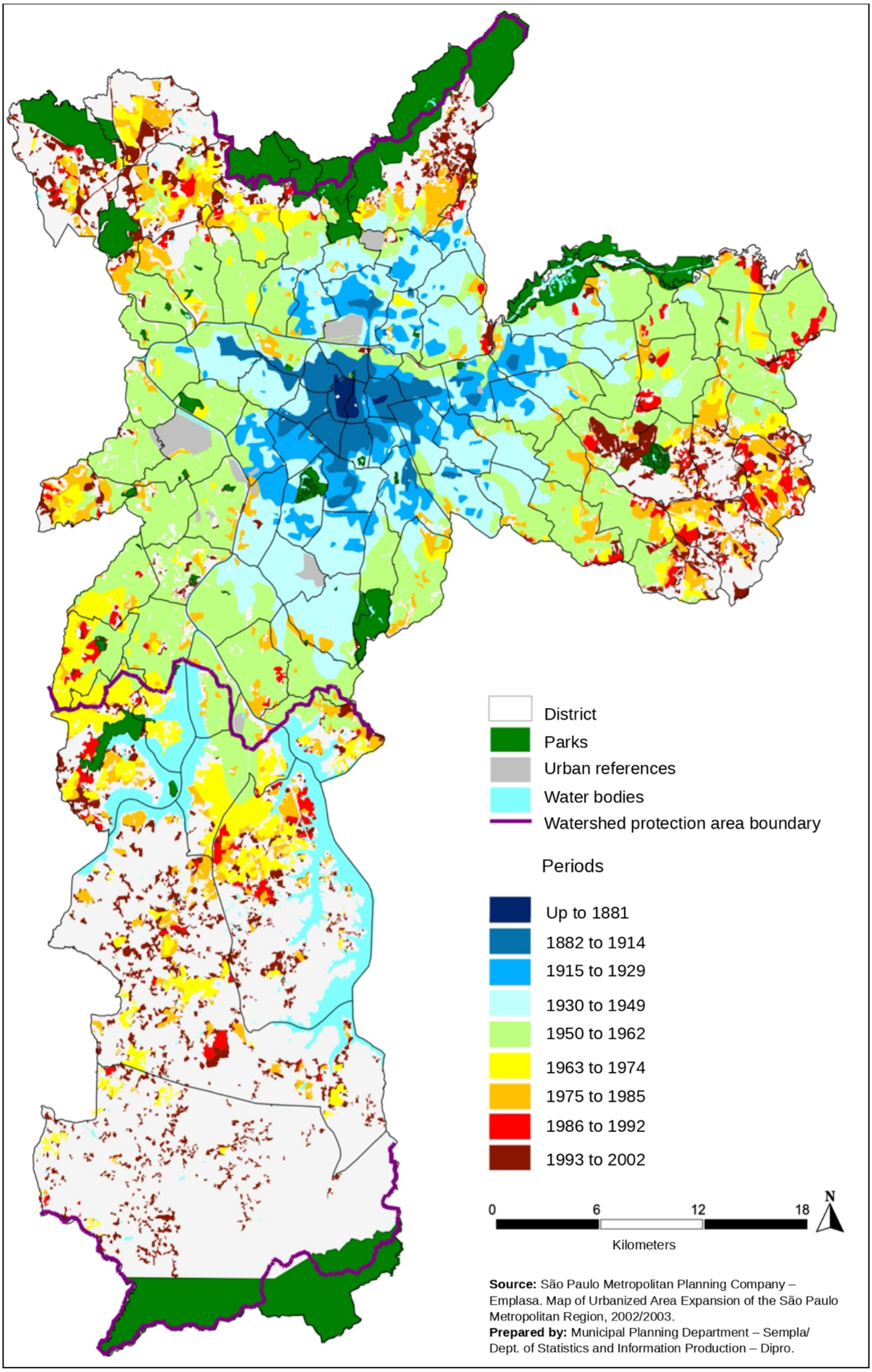

Figure 6 Evolution of the urban expansion of the municipality of São Paulo
Source: Prefeitura de São Paulo

These disparities are further accentuated by the prevalence of informal settlements and inadequate housing. Known locally as favelas, these areas accommodate a significant share of São Paulo's population. Despite some policy efforts to integrate or regularize them, many of these settlements continue to suffer from insufficient sanitation, precarious infrastructure, and poor access to public services. According to a UN-Habitat report, approximately 11% of the city's residents lived in such conditions, which not only reflects the persistent housing challenges but also exacerbates social exclusion within the metropolis (UN-Habitat, 2010).

According to the Fundação Seade (2022a), that is an organization linked to the Secretariat of Finance and Planning, and today a national reference center in the production and dissemination of socioeconomic and demographic analyses and statistics for the State of São Paulo, the Social Vulnerability Index – IPVS reflects intra-municipal inequality of vulnerability to poverty based on the income of the reference person in the household and demographic characteristics. Calculated every ten years and initiated in 2000, the IPVS is developed from the aggregate of census tracts from the Demographic Census conducted by the IBGE (Brazilian Institute of Geography and Statistics). Below we can see the IPVS map for the municipality of São Paulo using the information from the census conducted in 2022.

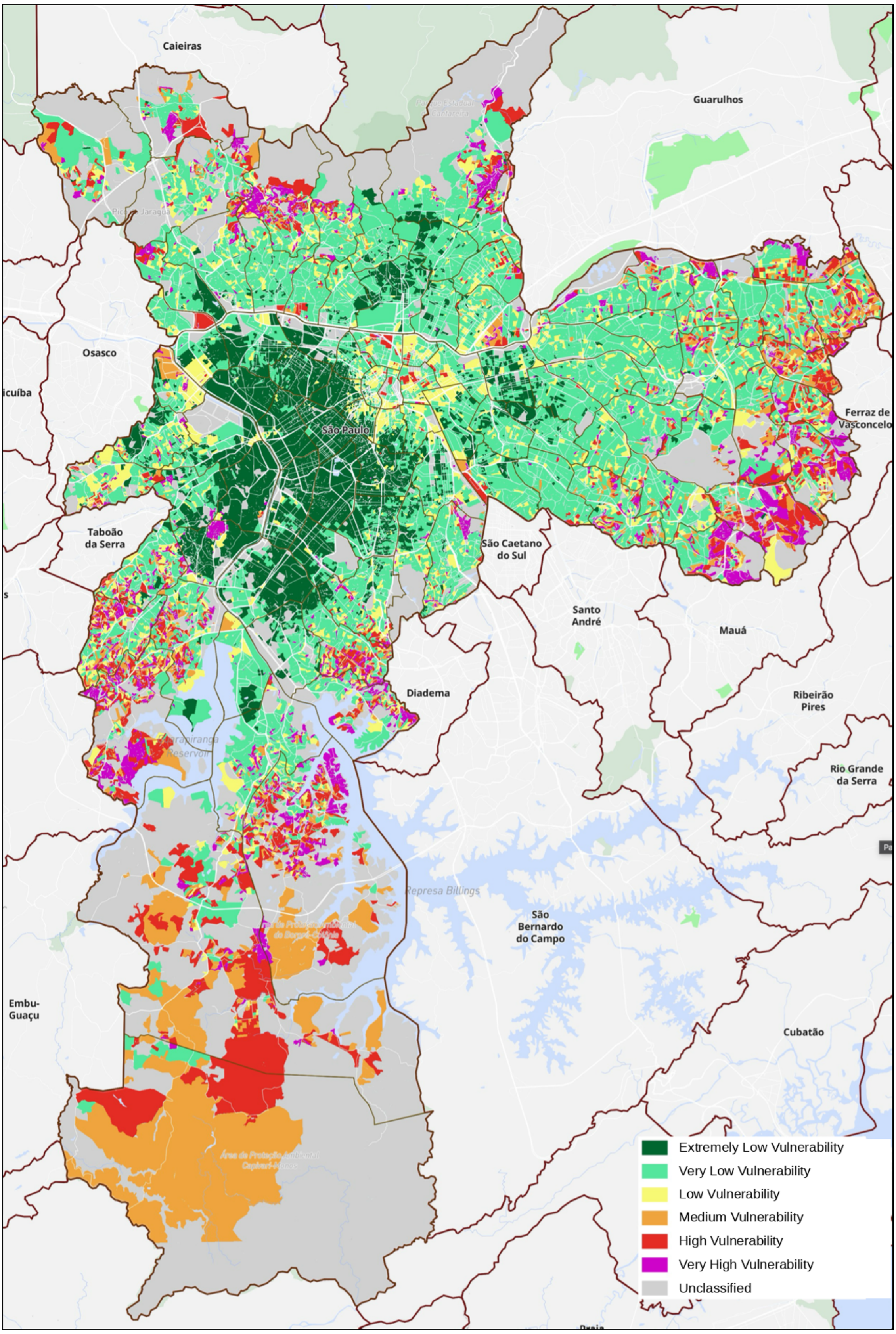

Figure 7 Social Vulnerability Index - IPVS - for the municipality of São Paulo
Source: Fundação Seade (2022)

Moreover, the expansion of gated communities and vertical condominiums in upper-income zones has deepened the contrast between formal and informal urban development, reinforcing social fragmentation and limiting spatial integration (Caldeira, 2023). Beyond informal housing, São Paulo faces a growing housing deficit and an escalating homelessness crisis, a gap that disproportionately affects the poor and working classes. Never before have so many new housing units been put on the market to fight this crisis with the help of public policies: incentives in the 2014 Master Plan and programs like *Requalifica Centro* drove a production "boom" that, by *LabCidade/FAU-USP's* count, reached roughly 400,000 residential units (Setz & Ramalho, 2026). On the other hand, the increasing visibility of homelessness, almost 100,000 individuals (Rolnik & Santoro, 2026) reportedly living on the streets of São Paulo as of 2025 demonstrates these units are not being made available for the population who need it the most. The housing crisis places additional stress on urban infrastructure and deepens the already intense socio-spatial divide (Johnson, 2024).

Efforts at urban revitalization, often framed as strategies for economic modernization or tourism development, have also contributed to territorial inequality. In central areas like Luz and Campos Elíseos, projects aimed at upgrading infrastructure and attracting investment have resulted in the displacement of long-time low-income residents. A key driver of this process is the proliferation of short-term rental units on platforms such as Airbnb, which in São Paulo concentrate precisely in the most central districts (Rolnik & Mendonça, 2025). In neighborhoods like República and Consolação, the growth of small one-bedroom units offered for short-term rental between 2017 and 2023 outpaced new real estate launches in the same period, while hosts with multiple listings accounted for the majority of the supply – evidence that residential buildings are being converted into investment portfolios rather than homes (Rolnik & Mendonça, 2025). Because nightly rates far exceed long-term rents, this conversion reduces the housing available to permanent residents and drives prices upward, pushing low-income families who once relied on affordable central housing toward the urban periphery, farther from jobs, transit, and services. In this way, the creation of new units for short-term rentals does not simply add accommodation; it actively replaces resident housing with transient lodging, deepening the spatial divide between those who benefit from revitalization and those displaced by it. A prominent example is the proposed redevelopment of the Favela do Moinho, the last favela in the central zone, which has sparked controversy due to the absence of comprehensive resettlement plans for evicted families. Such initiatives have reignited debates over the right to housing and the risks of gentrification, particularly when urban development prioritizes capital over social justice (Barba, 2025).

In addition, these urban projects often align with broader efforts to "rebrand" São Paulo's central areas for cultural and commercial tourism, which can further displace low-income populations and erode neighborhood identity (Johnson, 2024). In this context, social movements such as the *Movimento dos Trabalhadores Sem-Teto* (MTST – Homeless Workers' Movement) have become vital actors in the struggle for housing justice. Through organized occupations, mass mobilizations, and political advocacy, MTST challenges the state's inaction and seeks to secure dignified housing for vulnerable populations. Their activism highlights the importance of grassroots resistance in confronting spatial injustice and shaping more inclusive urban policies (MTST, 2023). Other grassroots coalitions, such as the *Frente de Luta por Moradia* (FLM) and *União dos Movimentos de Moradia* (UMM), also contribute to the broader struggle for housing rights by organizing occupations and pressuring public authorities to reallocate vacant buildings for social use (MTST, 2023).

Altogether, these interrelated dynamics, historic spatial segregation, the persistence of informality, housing precarity, displacement through gentrification, and the mobilization of civil society, illustrate the complex landscape of urban inequality in São Paulo. Understanding these territorial patterns is crucial to analyze the impact of unregulated short-term rental platforms, which often exploit and intensify the very urban divisions they inhabit.

3.1.2 STR Growth Amidst a Precarious Rental Market in São Paulo

In recent years, São Paulo has experienced a notable rise in short-term rental (STR) activity, driven primarily by digital platforms like Airbnb. As of 2025, there are more than 22,000 active Airbnb listings in the city (scraped directly from their website), representing a significant transformation in how housing is used and accessed, particularly in central districts. These listings are heavily concentrated in neighborhoods such as Brás, República, Pinheiros, Moema e Brooklin – areas that are not only well-connected and culturally vibrant but also undergoing intense processes of gentrification and real estate speculation. The attractiveness of these locations to tourists and investors has contributed to the commodification of housing, often redirecting residential units away from long-term rental markets in favor of more lucrative short-term occupancy (Iacovone, 2023).

This phenomenon has intensified territorial inequalities, particularly as the growth of STRs occurs within the broader context of a precarious and underregulated housing market. Souza-Lopes & Saab (2021) argue that in São Paulo, STR expansion is particularly severe in areas of high land value, where tourism and investor interest exacerbate social exclusion and displacement pressures (Souza-Lopes & Saab, 2021).

Unlike traditional hotels, STRs often deceive municipal supervision, allowing them to proliferate in residential areas without complying with health, safety, or zoning laws. This has raised tensions in communities and contributed to a disintegration of neighborhood cohesion (de Cássia Ariza da Cruz et al., 2024). The spatial concentration of STRs in central neighborhoods not only reduces the availability of affordable long-term rental units but also alters the social fabric of communities by prioritizing tourist consumption over residential stability. Moreover, the growing presence of investors who manage multiple STR listings, as opposed to resident hosts, has shifted the dynamics from informal home-sharing to professionalized, speculative real estate practices (de Cássia Ariza da Cruz et al., 2024).

3.1.3 Housing Deficit and Homelessness Crisis in São Paulo

São Paulo, Brazil's largest metropolis and economic hub, is facing a profound housing crisis marked by a severe deficit and rapidly growing homelessness. The city currently has an estimated housing deficit of approximately 400,000 units, reflecting its long-lasting inability to meet the demand for affordable housing among low- and middle-income populations (Johnson, 2024). This shortage has deep historical and structural roots, including underinvestment in social housing, urban sprawl, and the commodification of land in central areas.

As a direct consequence, homelessness has increased. In December 2024, São Paulo registered over 90,000 people living on the streets, a dramatic increase that exposes the inadequacy of existing housing policies and welfare safety nets. The homeless population has increased nearly twenty-five times since 2012 (ObPopRua, 2021), with spikes following the COVID-19 pandemic and worsening economic conditions, further straining municipal shelters and food-distribution networks (IPEA, 2020). The homeless population includes entire families, informal workers, and vulnerable groups, many of whom are pushed into precarious living conditions due to evictions, job loss, or the rising cost of housing amid the financialization of the real estate market (Queiroz, 2024)

Recent scholarship links housing precarity and displacement in São Paulo to the financialization of housing, whereby residential property is increasingly treated as a financial asset – concentrated in corporate and investor hands and managed for rent extraction rather than for housing need – a dynamic that intensifies affordability crises, tenure insecurity, and displacement (Rolnik et al., 2024). This situation places immense pressure on São Paulo's urban infrastructure and social services. As public resources are increasingly diverted toward emergency assistance, long-term solutions – such as public housing provision, rent regulation, and inclusive urban planning – remain underdeveloped. In São Paulo, durable social-rent programs persist only marginally within the housing-policy agenda, tensioned by the predominance of temporary rental subsidies (*auxílio aluguel*) as an emergency response and by pressures to dismantle the public rental stock; such programs remain temporary and must be repeatedly renewed precisely because the public sector fails to provide permanent, adequate housing (Freire Santoro et al., 2025). Housing movements such as the MTST have likewise criticized recent shifts in housing policy as a retreat from durable, low-income housing provision (Brasil de Fato, 2019).

The city's housing crisis not only reflects a quantitative shortage in dwellings but also points to a broader territorial injustice that marginalizes low-income populations from formal, serviced urban areas (Johnson, 2024). Addressing this dual crisis of deficit and homelessness will require systemic policy interventions, ranging from land-use reform to progressive taxation of vacant and underused property and stronger enforcement of the social function of property – instruments already established in Brazil's 1988 Constitution (Arts. 182–183) and regulated by the City Statute (*Estatuto da Cidade*) (Federal Law No. 10.257/2001), but unevenly applied in practice (Brasil, 1988); (Brasil, 2001).

3.1.4 Regulatory Vacuum in São Paulo's STR Market

São Paulo exemplifies a regulatory vacuum at the municipal level. The city imposes no specific short-term rental (STR) license on individual hosts, and as of mid-2025 effectively none of its roughly 22,000 active Airbnb listings held any STR-specific authorization. The activity is governed only residually by the federal Tenancy Law (Law No. 8,245/1991) and, in day-to-day practice, by condominium bylaws and court rulings rather than by any dedicated local framework (Souza & Leonelli, 2021; Colomb & Souza, 2023). The result is a market that is large, visible and economically significant, yet almost entirely outside any purpose-built system of municipal registration, zoning control or enforcement.

The vacuum's most striking distortion concerns subsidized housing. Following the discovery of units from social-housing programs built with public subsidy and municipal tax benefits being advertised on Airbnb instead of fulfilling their residential function the municipality finally prohibited the short-term letting of such units in May 2025. The episode is emblematic of how, in the absence of a coherent STR framework, regulation in São Paulo emerges reactively and piecemeal – through prosecutorial action and narrowly targeted bans – rather than through proactive, data-driven housing policy (Colomb & Souza, 2023).

3.2 Milan

3.2.1 Urban Characteristics and Housing Inequality in Milan

The urban fabric of Milan reflects long-standing tensions between economic growth, rapid urbanization and social inequality, but its trajectory is better understood through the lens of the Southern-European housing system than through a stark affluent-core / poor-periphery dichotomy. Milanese housing has historically rested on very high homeownership, sustained by family networks and, in earlier decades, alongside a dualist rental market progressively liberalized since the 1990s (Arbaci, 2019; (Coppola et al., 2023)). Spatial inequality is real but fragmented, and in recent years it has been driven less by a mid-twentieth-century center-periphery pattern than by rising central rents and the financialization of housing - including the partial marketisation of social housing - which has concentrated pressure on lower-income and precarious households (Coppola et al., 2023).

Social housing estates are known locally as "*case popolari*". These properties accommodate a significant share of Milan's low-income population. Despite some policy efforts to renovate or redevelop them, many of these estates continue to suffer from insufficient maintenance, and consequent underutilization. More recent evidence sharpens this picture. In 2019 roughly 70 per cent of Milanese households owned their dwelling (over 500,000 owner-occupied units) while only about 25 per cent rented (nearly 185,000 flats); the public-housing waiting list stood at approximately 25,000 households, and 1,706 eviction orders were issued in 2021, after a temporary pandemic decline (Coppola et al., 2023). Average new rents rose from about 8.5 EUR/m2 per month in 2004 to 12.5 EUR/m2 in 2022 (Agenzia delle Entrate, in Coppola et al., 2023). The most recent municipal-scale assessments are provided by the third OCA research report (Bricocoli, Peverini & Caresana, 2025), the Comune di Milano's Piano Casa, and the first MetroMosaic report (Coppola & Aramburu Guevara, 2025).

Moreover, the expansion of luxury developments and high-end residential projects in central zones has deepened the contrast between affluent and disadvantaged areas, reinforcing social fragmentation and limiting spatial integration. Beyond inadequate housing, Milan faces a growing housing deficit and an escalating homelessness crisis. Since 2015, house prices and rents have risen by more than 40%, and the increase in housing costs has outpaced income and wage growth by nearly a factor of three, leaving a major share of income earners in the city unable to afford decent housing (Bricocoli & Peverini, 2024; OECD/Cogito, 2023). This affordability gap disproportionately affects the poor and working classes. The structural deficiency is compounded by the persistent visibility of homelessness: the 2023 racCONTAMI census recorded just over 2,000 homeless people in Milan on a single night, most of them men over the age of 35 (Comune di Milano & Fondazione Rodolfo Debenedetti., 2023).

The notion of 'inadequate housing' is operationalized here through a set of standard indicators: the overcrowding rate, the absence of basic facilities (such as adequate heating or a private bathroom), the housing-cost overburden rate (housing costs exceeding 40 per cent of disposable income), and structural disrepair, assessed with particular attention to the lowest income quintile (Istat-Eurostat EU-SILC; UN-Habitat). On the affordability dimension, Italy records one of the highest shares of low-income households in unaffordable market rentals among dualist rental systems - 28.3 per cent according to the OECD (2020, cited in Coppola et al., 2023).

Efforts at urban revitalization, often framed as strategies for economic modernization or tourism development, have also contributed to territorial inequality. Since the early 2000s Milan has been governed by a public–private partnership regime crystallized in flagship megaprojects such as Porta Nuova and CityLife, through which transnational capital and local development coalitions have reconfigured spatial priorities (Conte & Anselmi, 2022). In central areas like Isola and Porta Nuova, projects aimed at upgrading infrastructure and attracting investment have driven a gradual reduction in social diversity in which capital investment, media-driven image production and the erosion of affordability progressively displace long-time low-income residents. This dynamic has intensified as Milan's tourism has increased – visitor numbers passed 9 million in 2024 and approached 9.7 million in 2025 – with mega-events such as Milan Design Week (whose 2024 Salone del Mobile alone attracted over 360,000 visitors) pushing short-term rental rates to extremes, exceeding €6,000 per week in Brera and €8,000 in the Fashion District, and displacing residents toward distant suburbs. Such initiatives have reignited debates over the right to housing and the risks of gentrification, particularly when urban development prioritizes capital over social justice (Conte & Anselmi, 2022).

In addition, these urban projects often align with broader efforts to "rebrand" Milan's central areas for cultural and commercial tourism, which can further displace low-income populations and deteriorate neighborhood identity. One case is the transformation of Chinatown (the Via Paolo Sarpi area) into a lifestyle and commercial hub, where the commodification of ethnic diversity has accompanied rising rents and pressure on immigrant and working-class residents (Manzo, 2023). In this context, social movements have become vital actors in the struggle for housing justice. Through organized occupations, mass mobilizations, and political advocacy, these groups challenge the state’s inaction and seek to secure dignified housing for vulnerable populations.

Other grassroots coalitions, such as Cantiere and Ri-Make, also contribute to the broader struggle for housing rights by occupying unused buildings and transforming them into community and housing spaces, while advocating for public reuse of abandoned assets.

Altogether, these interrelated dynamics, historic spatial segregation, the persistence of inadequate housing, housing precarity, displacement through gentrification, and the mobilization of civil society, illustrate the complex landscape of urban inequality in Milan. Understanding these territorial patterns is crucial to analyzing the impact of unregulated short-term rental platforms, which often exploit and intensify the very urban divisions they inhabit.

3.2.2 STR Growth Amidst a Precarious Rental Market in Milan

In recent years, Milan has experienced a notable increase in short-term rental (STR) activity, driven primarily by digital platforms like Airbnb. Data show that there are over 16,000 active Airbnb listings in the city, but the average occupancy rate ranges from 20% to 50% (estimated percentages since the company refuses to share these numbers) and a daily average rate of €150, highlighting the commercial scale of STR operations in the city ((Inside Airbnb, 2025; AirDNA, 2025). These listings are highly concentrated in neighborhoods such as Isola, Porta Romana, and Navigli – areas that are not only well-connected and culturally vibrant but also undergoing intense processes of gentrification and real estate speculation (Amore et al., 2022).

The appeal of these locations to both tourists and investors has contributed to the commodification of housing, with residential units increasingly diverted from the long-term rental market into more profitable short-term use (Amore et al., 2022). This phenomenon has intensified territorial inequalities, particularly as the growth of STRs occurs within the broader context of a precarious and underregulated housing market. Studies show that STR expansion is most prominent in high land-value areas, where tourism and investor interest are displacing lower-income residents and disrupting community continuity (Amore et al., 2022; (Celata & Romano, 2020)).

Unlike traditional hotels, STRs often evade municipal inspections, allowing them to proliferate in residential areas without adhering to health, safety, or zoning regulations. This has raised tensions in local communities and contributed to the deterioration of neighborhood cohesion (Bernardi, 2018). The spatial concentration of STRs in central neighborhoods not only reduces the supply of affordable long-term rental housing but also reshapes the social fabric of districts by prioritizing tourism over residential stability (Bernardi, 2018). Moreover, the increasing presence of investors who manage multiple STR properties, rather than resident hosts, has shifted the model from informal home-sharing to professionalized, speculative real estate practices (Lee & Kim, 2023).

3.2.3 Housing Deficit and Homelessness Crisis in Milan

Milan's housing affordability has been declining, with house prices and rents increasing by over 40% since 2015. This increase is partly attributed to Milan's success in attracting new residents, including a significant number of non-resident students and international professionals, intensifying the demand for housing (OECD/Cogito, 2023).

In response to the housing shortage, Milan has implemented measures to promote affordable housing. Following the 2012 revision of its territorial governance plan (PGT), private developers undertaking residential transformation or new-construction projects larger than 10,000 m² must dedicate 40% of the intervention's surface area to social/affordable housing (*Edilizia Residenziale Sociale*, ERS); the plan also allows an extra 20% of volume above the maximum building index, provided it is rented out at controlled ("*convenzionati*") rates. Between 2010 and 2024, 56 such projects were promoted: 19 through social-housing real estate funds, which produced 6,664 dwellings (42%, or 2,810, still under construction), and 37 by other private operators such as building cooperatives and property companies, which produced 4,737 dwellings, of which 72.5% (3,436) were agreed as ERS. Controlled rents in the fund-led projects averaged roughly €84 per m² per year – about 20–40% below the private-market levels recorded by the OMI observatory – meaning a 70 m² apartment would rent for around €490 per month (about €650 once condominium charges are added), affordable mainly to households earning above roughly €1,600–2,200 net per month (Cognetti & Ranzini, 2025).

Despite these efforts, homelessness remains a pressing issue. The *racCONTAMI* census documented a substantial homeless population in Milan, with many individuals sheltering on the streets or in stations, vehicles, and other precarious locations (Comune di Milano & Fondazione Rodolfo Debenedetti, 2023). The scale of the phenomenon is also reflected in Istat's census of the homeless population and in the monitoring carried out by fio.PSD (*Federazione Italiana Organismi per le Persone Senza Dimora*), whose observatory analyses homelessness and documents, among other indicators, deaths among homeless people – together helping to make visible a phenomenon often obscured by Milan's image as a global city (Istat, 2021; fio.PSD., 2026).

3.2.4 Regulatory Vacuum in Milan's STR Market

Milan presents a milder but still consequential regulatory gap. Local instruments for controlling STR proliferation remain weak: around 16,000 Airbnb listings were active in 2025, of which only some 40% displayed a registration code, and enforcement is widely described as limited. The substantive regulatory architecture is largely national rather than municipal – the mandatory national identification code (CIN), the obligation to report guests to the *Alloggiati* Web portal within 24 hours, and the flat-rate *cedolare secca* tax – leaving the city with few proactive levers of its own to steer where and how short-term rentals develop.

Where Milan has acted, it has done so at the margins of the phenomenon and against a contested legal backdrop. Following a November 2024 directive of the Interior Ministry ordering the removal of self-check-in key boxes from railings, gates and lamp posts, the city moved to ban key boxes on public land from 2026. The measure's legality was promptly disputed: the Lazio regional administrative court annulled both the key-box ban and the in-person identification requirement in May 2025, before the Council of State reinstated them in November 2025. As in the Italian and Brazilian cases more broadly, the judiciary thus emerges as a decisive arbiter of how far local and national authorities can actually regulate the sector.

The cost of this regulatory lag is borne by the housing market. In central, tourist-oriented districts STR concentration is high-in the Navigli area short-term rentals reach roughly 12% of housing units, where rents grew 42% between 2015 and 2023 against a citywide increase of about 28% while nightly STR earnings can be three to four times higher than monthly long-term rents, strongly incentivizing conversion and the indirect displacement of lower income residents, students and young professionals (Cocola-Gant, 2016). Milan's principal response has so far been incentive-based rather than restrictive, promoting the *canone concordato* regulated-rent agreement (with reduced *cedolare secca* and IMU). This confirms a pattern shared with São Paulo: in both cities the municipality is largely reacting to, rather than steering, a market that expanded within a regulatory vacuum.

CHAPTER 4 – CASE STUDY DISCUSSIONS

4.1 São Paulo

4.1.1 Population, composition and households

At the 2022 census the municipality of São Paulo recorded 11,451,999 resident inhabitants, confirming its status as the largest city in the Southern Hemisphere (IBGE, 2022). Unlike Milan, however, São Paulo's demographic trajectory is now one of near stagnation: after decades of rapid expansion the population grew at only 0.15% per year between 2010 and 2022, down from 0.76% in the previous decade (Prefeitura de São Paulo, 2024; Figure 8). Growth has also shifted internally, with the southern and western districts and the expanded center gaining residents while the traditional eastern periphery has ceased to grow (Prefeitura de São Paulo, 2024).

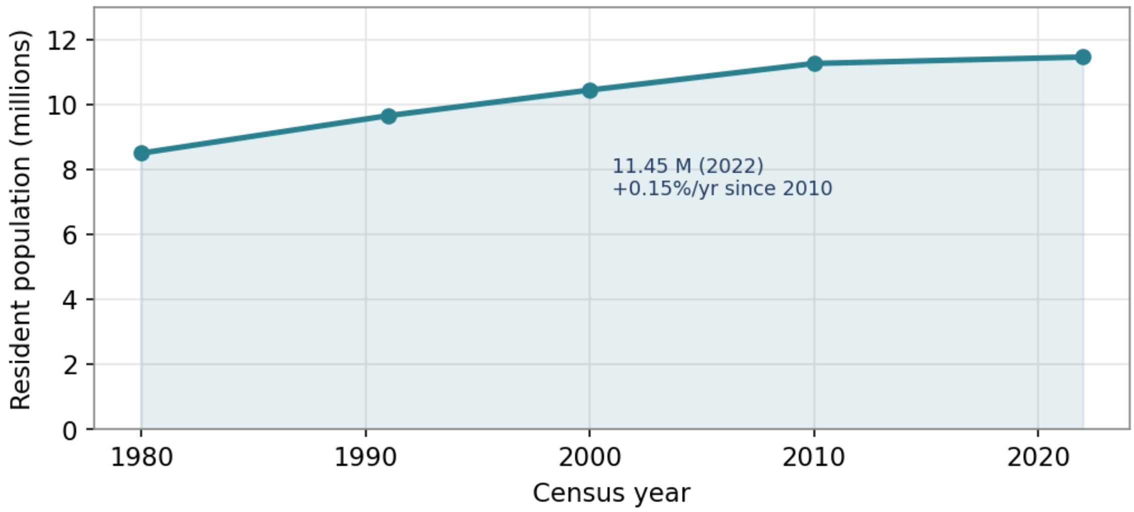

Figure 8 Resident population of the Municipality of São Paulo, 1980-2022
Source: Prefeitura de São Paulo (2024), Infocidade, based on IBGE censuses.

São Paulo's population is increasingly educated. The number of residents with completed higher education tripled in two decades, from 837,900 in 2000 to 2,512,570 in 2022 – about 22% of the population – reflecting the city's role as Brazil's leading economic and university hub (IBGE, 2022; Figure 9). In demographic composition, the city differs sharply from Milan: it is a city of internal rather than international migration. In 2022, only 202,115 residents (1.8%) were foreign-born, whereas some 1.8 million (15.9%) had been born in the Northeast region, the legacy of mid-twentieth-century labor migration (IBGE, 2022; Figure 10).

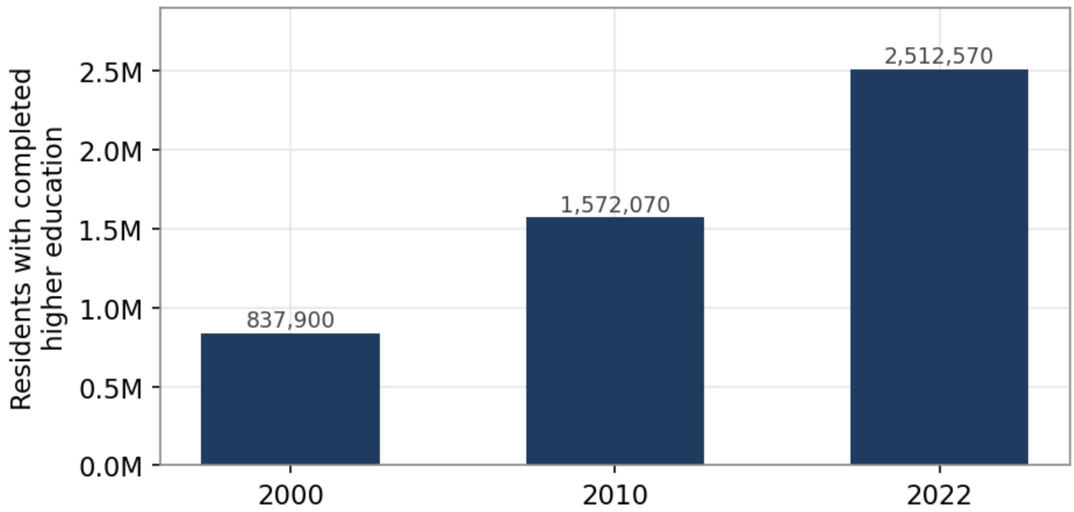

Figure 9 Residents with completed higher education, 2000-2022
Source: IBGE (2022), as tabulated by Prefeitura de São Paulo (2024).

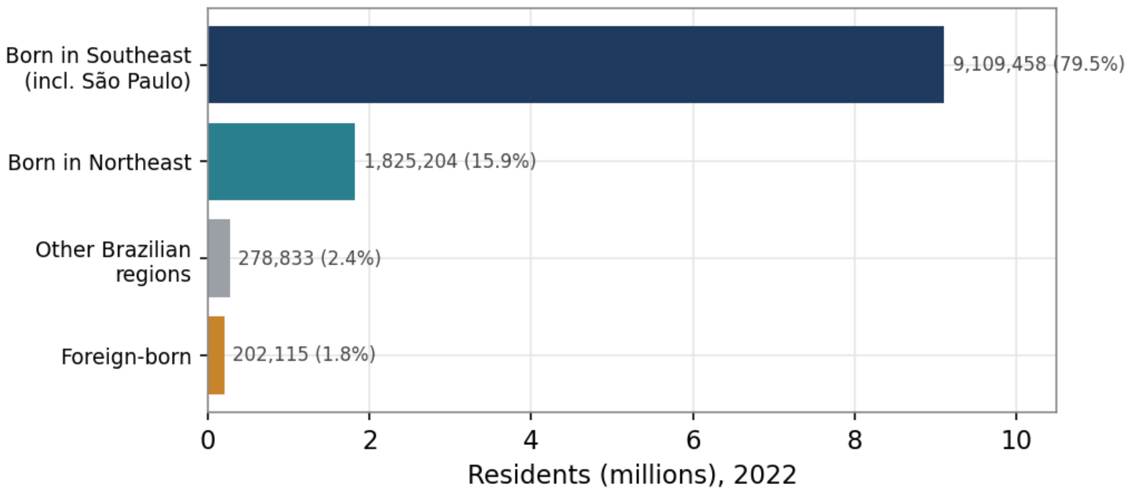

Figure 10 Resident population by place of birth, 2022. Source: IBGE (2022), Tabela 631.
Source: IBGE (2022), as tabulated by Prefeitura de São Paulo (2024).

Households have grown far faster than population, and they are shrinking in size. In 2022, the city had about 4.31 million occupied private permanent dwellings housing 11.39 million people, an average of just 2.6 persons per household – larger than Milan's 1.87 but falling steadily (IBGE, 2022; Fundação SEADE, 2022b). One-person households have risen from 11.4% of the total in 2000 to 14.6% in 2010 and 21.7% in 2022, while large households of seven or more have all but disappeared (Prefeitura de São Paulo, 2024). Table 3 summarizes the demographic and household profile, and Table 4 describes the distribution of households by size.

Indicator (Município de São Paulo)	Value
Resident population (2022)	11,451,999
Annual population growth, 2010–2022	0.15%
Foreign-born residents (2022)	202,115 (1.8%)
Northeast-born residents (2022)	1,825,204 (15.9%)
Occupied private permanent dwellings (2022)	4,307,665
Average household size (2022)	≈ 2.6 persons

Residents with higher education (2022)	2,512,570 (≈ 21.9%)

Table 3 Demographic and household snapshot, Municipality of São Paulo.
Sources: IBGE (2022); Prefeitura de São Paulo (2024); Fundação SEADE (2022b)

Household size	2000	2010	2022
1 person	11.4%	14.6%	21.7%
2 persons	20.0%	24.0%	29.9%
3 persons / 3–5	58.9% (3–5)	54.8% (3–5)	24.0% (3)
4–6 persons	–	–	22.8%
6+ / 7+ persons	9.7% (6+)	6.6% (6+)	0.4% (7+)

Table 4 Distribution of occupied dwellings by number of residents, 2000–2022. Census size brackets changed in 2022 (1, 2, 3, 4–6, 7+).
Source: Prefeitura de São Paulo (2024), based on IBGE censuses.

4.1.2 Housing stock

4.1.2.1 Occupied and vacant dwellings

The 2022 census counted 4,996,529 dwellings in the municipality, of which 4,307,665 (about 86%) were occupied private permanent dwellings and 675,826 (13.5%) were classified as not occupied – 589,020 vacant and 86,806 in occasional use (Fundação SEADE, (2022b); Figure 4). Strikingly, this 13.5% non-occupancy rate is almost identical to Milan's, but its causes differ: in São Paulo it reflects a combination of speculative land-banking, units held empty awaiting market upswings, and a growing stock of small studios produced for short-stay rather than long-term residential use (Rolnik, 2024). The spatial mismatch is acute: the expanded central area alone contains some 58,700 empty private dwellings even as an estimated 18,000 people live in tenement housing (*cortiços*) nearby – 85% of them earning up to two minimum wages and 63% Black (Rolnik, 2024; LabCidade, 2024).

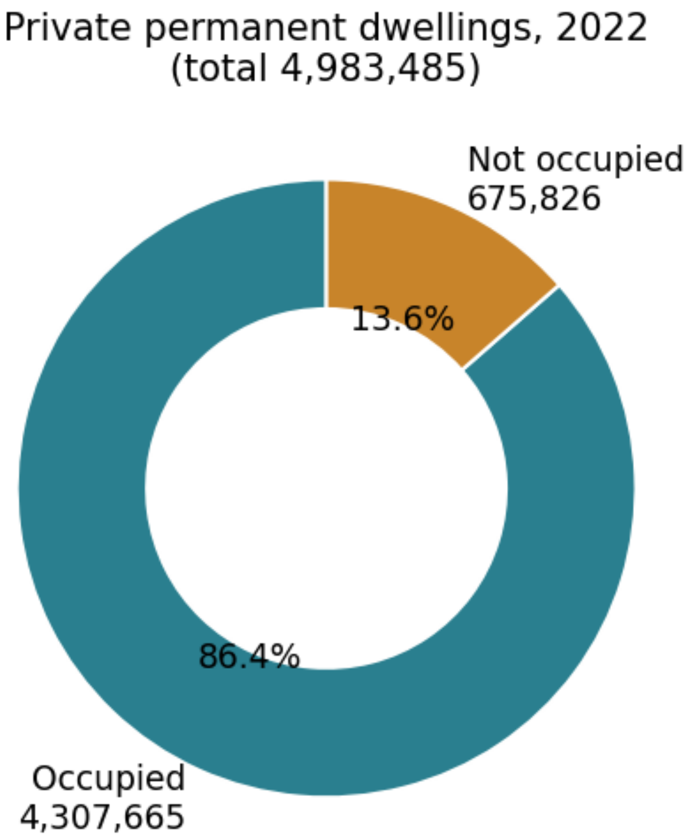

Figure 11 Occupied and not-occupied private permanent dwellings, 2022.
Source: Fundação SEADE (2022b), based on IBGE Censo 2022.

4.1.2.2 Forms of tenure

São Paulo combines a strong ownership culture with a rental sector that, unlike Milan's, is expanding. In 2022 owner-occupiers held 65.8% of occupied dwellings (2,835,214 units), tenants 28.4% (1,222,655 units) and households under granted or other arrangements 5.8% (251,295 units) (IBGE, 2022). The decade-by-decade comparison reveals a trend that runs opposite to Milan's: the rental share rose steadily from 21.6% in 2000 to 23.3% in 2010 and 28.4% in 2022, while owner-occupation peaked in 2010 (70.4%) before falling to 65.8% (Prefeitura de São Paulo, 2024; IBGE, 2022; Figure 12; Table 5). The growth of renting reflects both worsening affordability of ownership and the deliberate expansion of a build-to-rent and short-stay rental segment in the central districts (Rolnik, 2024, 2026).

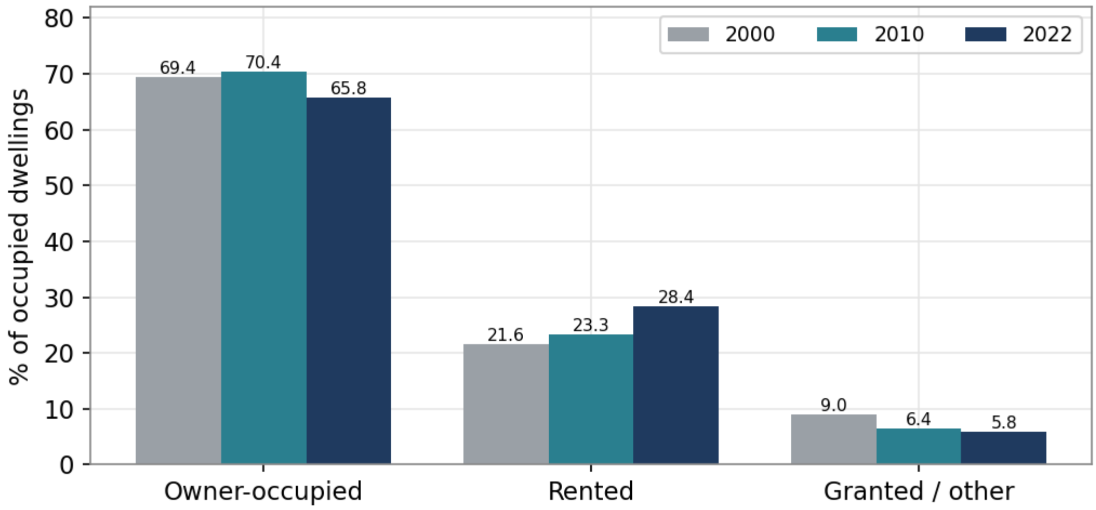

Figure 12 Tenure composition of occupied dwellings, 2000–2022.
Sources: Prefeitura de São Paulo (2024); IBGE (2022).

Tenure	2000	2010	2022
Owner-occupied	2,071,774 (69.4%)	2,516,177 (70.4%)	2,835,214 (65.8%)
Rented	645,004 (21.6%)	831,181 (23.3%)	1,222,655 (28.4%)
Granted / other	269,199 (9.0%)	226,151 (6.4%)	251,295 (5.8%)
Total occupied	2,985,977	3,573,509	4,309,163

Table 5 Occupied dwellings by tenure, Municipality of São Paulo, 2000–2022.
Sources: Prefeitura de São Paulo (2024) for 2000–2010; IBGE (2022) for 2022.

The "granted/other" category warrants care. In the Brazilian census it captures recorded, non-rental arrangements – mainly housing granted or loaned by an employer or, more often, by family members (*cedido*) – rather than informal, contract-less occupancy, which escapes the tenure count and is therefore invisible in these data. In 2022, the IBGE recorded 190,420 granted dwellings (15,091 employer-granted, 158,971 family-granted and 16,357 otherwise granted) alongside 60,875 in a residual "other" condition (IBGE, 2022).

4.1.3 Rental values and market behavior

The reference indicator for São Paulo's rental market is the FipeZAP residential index, which tracks asking rents for advertised apartments. In May 2026 São Paulo recorded the highest average asking rent of any Brazilian state capital, at R$ 64.67 per square meter per month, well above the 36-city national average of R$ 53.35/m² (FipeZAP, 2026; Figure 13). Rents in the city rose 5.87% over the preceding twelve months – faster than consumer inflation (IPCA +4.72%) – and 3.16% in the first five months of 2026 alone (FipeZAP, 2026).The estimated gross rental yield stood at 6.40% per year, implying an average sale value of roughly R$ 12,100/m² for residential apartments (FipeZAP, 2026). These figures continue a sustained boom: FipeZAP recorded annual rent increases of 16.55% in 2022, 16.16% in 2023 and 13.47% to early 2024, consistently outpacing inflation (FipeZAP, 2026).

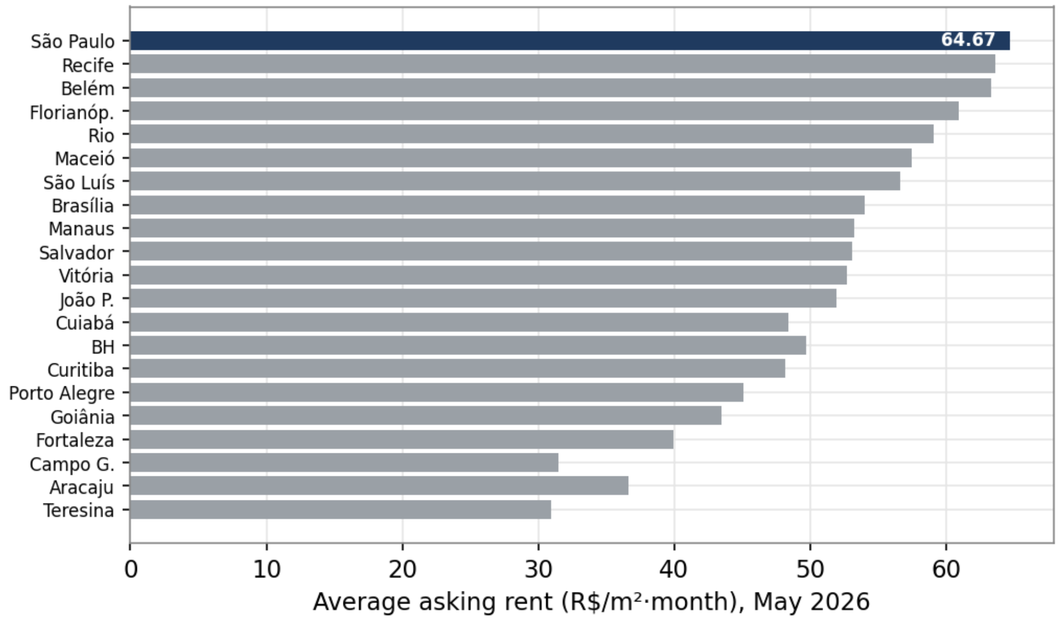

Figure 13 Average asking rent by Brazilian state capital, May 2026 (R$/m²·month).
Source: FipeZAP (2026).

Rental values are sharply differentiated across the city. Drawing on FipeZAP and DataZap neighborhood data, central-western and southern districts command the highest rents – around R$ 55–58/m² in Jardins, R$ 52–55/m² in Pinheiros, Vila

Madalena, Moema and Itaim Bibi – while the southern and eastern peripheries fall to roughly R$ 47/m² and R$ 37/m² respectively (FipeZAP, 2026; Figure 14). Table 6 summarizes the principal FipeZAP indicators for the city.

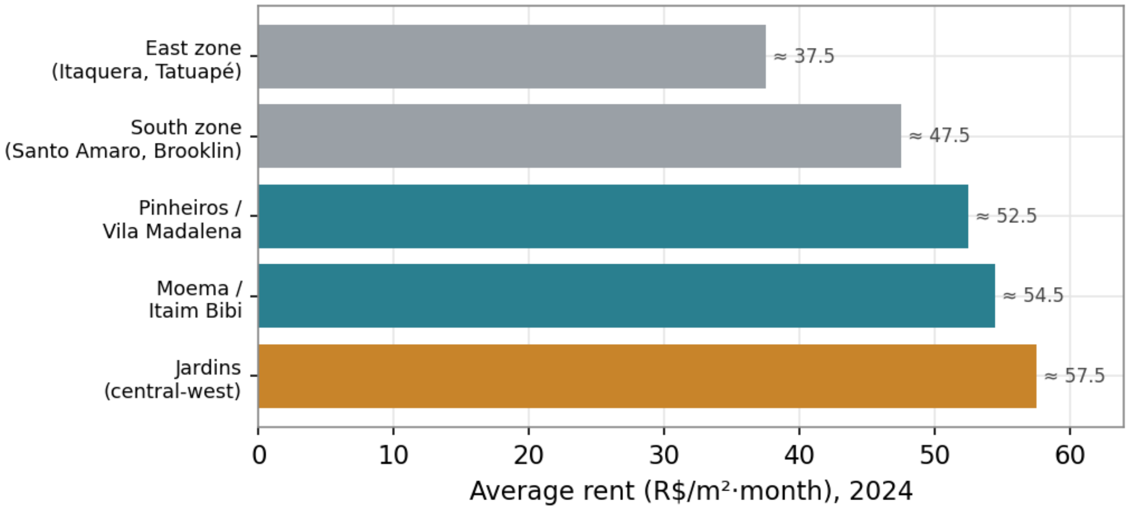

Figure 14 Average residential rent by São Paulo district, 2024 (R$/m²·month).
Source: FipeZAP / DataZap (2024).

FipeZAP indicator, São Paulo	Value
Average asking rent (May 2026)	R$ 64.67/m²·month (highest of all capitals)
Rent growth, last 12 months	+5.87% (vs IPCA +4.72%)
Rent growth, 2026 year-to-date	+3.16%
Gross rental yield	6.40% per year
Implied average sale value	≈ R$ 12,100/m²
Rent growth, 2022 / 2023	+16.55% / +16.16%

Table 6 Key FipeZAP rental-market indicators, Municipality of São Paulo.
Source: FipeZAP (2026).

4.1.4 Synthesis

Taken together, the evidence describes a rental market that is large, rapidly appreciating, and increasingly central to the financialization of housing in São Paulo. The city combines a stagnant but highly educated population of shrinking households with a dwelling stock in which – unlike Milan – the rental share is rising, and owner-occupation is in retreat. Although STRs in São Paulo would fall in the occasional use census category, the significant number of vacant units is also an important driver inside the rental market, due to its speculative character. Official statistics record substantial non-occupancy (13.5%), concentrated paradoxically in a center that simultaneously hosts tens of thousands of empty units and thousands of people in tenements and on the street (Rolnik, 2024; LabCidade, 2024). FipeZAP data show rents rising faster than inflation and reaching the highest level of any Brazilian capital. Rolnik (2024, 2026) reads these dynamics as the product of a policy model that has converted housing – and especially rental housing – into a financial asset: municipal incentives such as the *Requalifica Centro* program and the Master Plan free building-potential for "social-interest housing" have, in practice, financed small studios destined for short-term and Airbnb-style letting ("fake" social housing), opening a new frontier of housing financialization while the city experiences what she calls "a machine for producing homelessness." These findings mirror, in a distinct institutional setting, the financialization dynamics documented for Milan, and they define the central policy challenge for São Paulo's housing strategy.

4.2 Milan

4.2.1 Population, composition and households

At the 2021 census the *Comune di Milano* recorded 1,349,930 resident inhabitants distributed across 720,361 households, implying an average household size of just 1.87 persons – among the lowest of any large Italian city and a structural feature that shapes housing demand toward small dwellings (ISTAT, 2021). The resident population is markedly international: 253,531 residents, or 18.8%, held foreign citizenship in 2021 (ISTAT, 2021). Registry data show that the foreign-resident population more than doubled over two decades, rising from roughly 143,000 in 2004 to a peak above 300,000 in 2023 before a slight recent decline, a trajectory that has underpinned sustained demand in the lower and middle segments of the rental market (Comune di Milano, 2025; Figure 15).

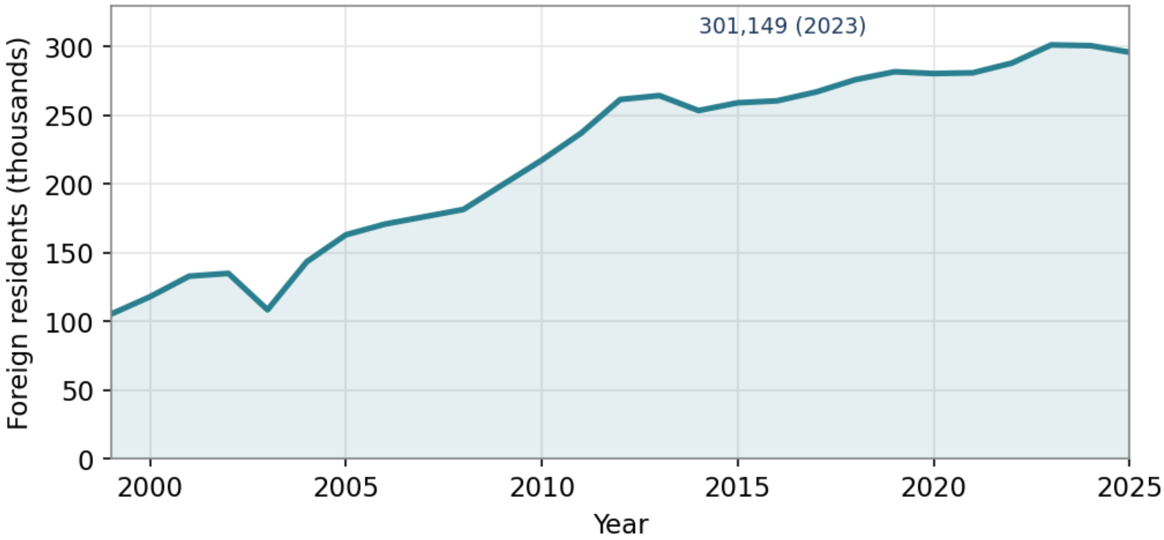

Figure 15 Foreign resident population of the Municipality of Milano, 1999–2025.
Source: Comune di Milano (2025), SISI – Sistema Statistico Integrato (anagrafe registry).

Milan's population is also highly educated and strongly student-oriented, two characteristics that intensify rental demand. Among residents aged nine and over, some 380,000 people – about 28% of the population – hold a tertiary qualification (ITS diploma, bachelor's, master's or doctorate), while the single largest group holds an upper-secondary diploma (ISTAT, 2021; Figure 16). The city is one of Europe's leading university hubs: its seven main universities conferred 53,752 degrees in 2024, up from 46,969 in 2018, and host a large population of out-of-town and international students who rely almost entirely on the rental sector (Comune di Milano, 2025; Figure 17).

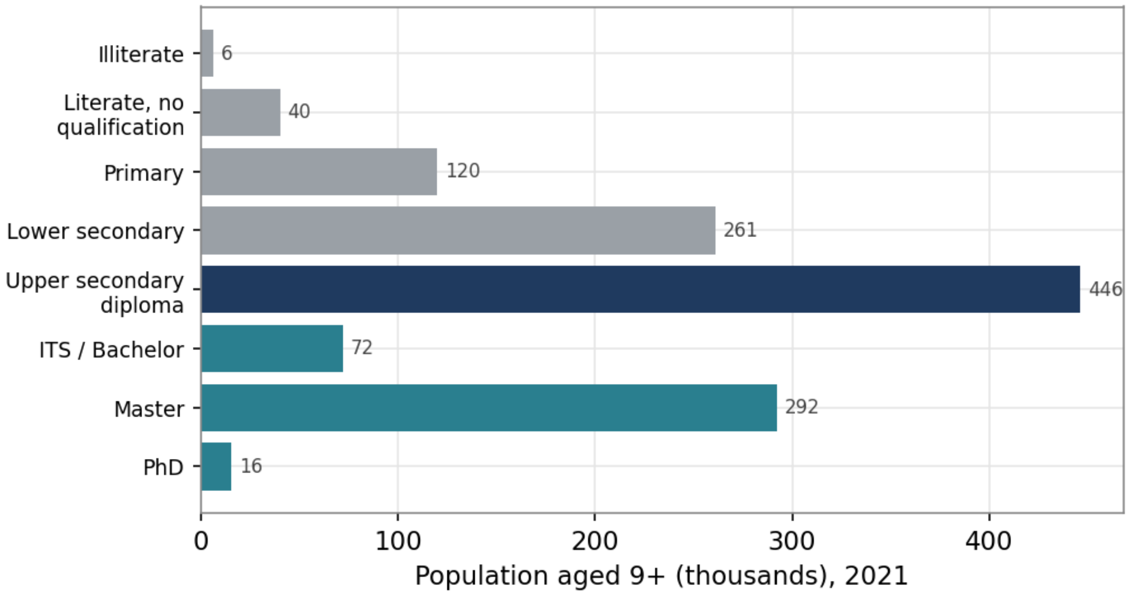

Figure 16 Educational attainment of the resident population aged 9+, 2021.
Source: ISTAT (2021), permanent population and housing census, as tabulated by Comune di Milano (2025).

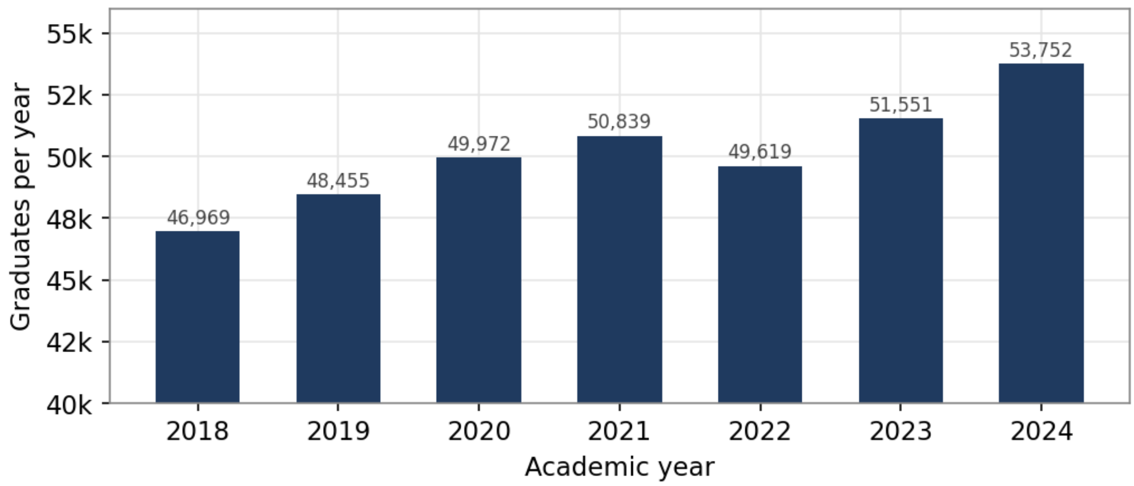

Figure 17 Degrees conferred by Milan's universities, 2018–2024.
Source: Comune di Milano (2025), Milano Statistica.

The composition of households reinforces the demand for small units. Registered-family data indicate that one-person households, single-parent families and couples without children together account for a large share of all families, while couples with children represent under one fifth of the total (Comune di Milano, 2025). Table 7 summarizes the demographic and household profile of the city.

Indicator (Comune di Milano, 2021)	Value
Resident population	1,349,930
Foreign residents	253,531 (18.8%)
Households	720,361
Average household size	1.87 persons
Residents with tertiary education (9+)	≈ 380,000 (28.2%)
University degrees conferred (2024)	53,752
Residential buildings	46,002

Table 7 Demographic and household snapshot, Municipality of Milano. Sources: ISTAT (2021); Comune di Milano (2025).

4.2.2 Housing stock

4.2.2.1 Occupied and not occupied dwellings

The 2021 census counted 809,990 dwellings in the Comune di Milano, of which 700,586 (86.5%) were occupied and 109,404 (13.5%) were classified as not occupied (ISTAT, 2021; Figure 18). This residual category is frequently – and misleadingly – read as "vacancy." In ISTAT's definition, however, non-occupied dwellings comprise dwellings that are either genuinely empty or occupied by persons who do not habitually reside there (Coppola & Aramburu Guevara, 2025). A substantial part of Milan's "unoccupied" stock is therefore inhabited by non-residents – students, workers and short-term rental guests – without a registered residence , rather than standing empty.

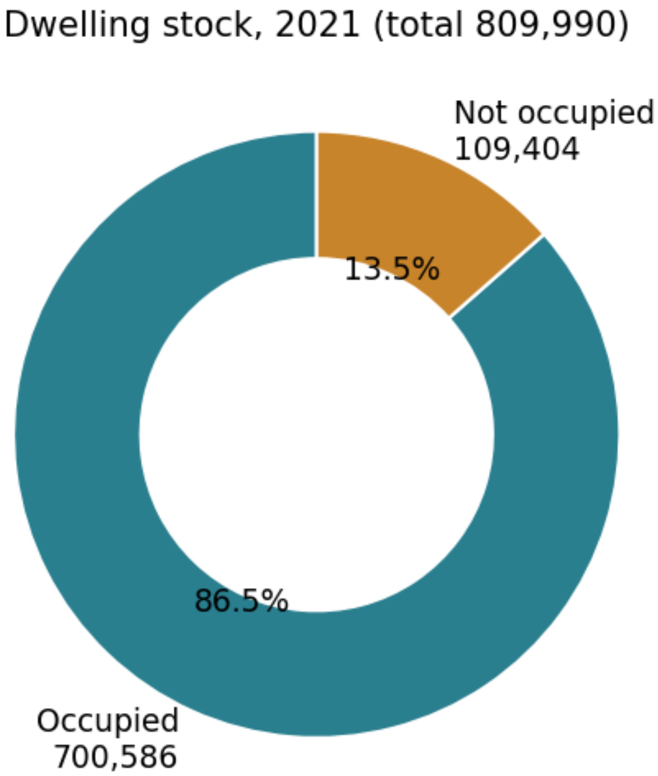

Figure 18 Occupied and not-occupied dwellings, Comune di Milano, 2021.
Source: ISTAT (2021).

Two non-conventional sources allow this hidden component to be quantified. Aggregated mobile-phone data (Vodafone, via PoliS-Lombardia) indicate that, against 1,417,597 residents registered in 2023, Milan counted approximately 1,610,400 "annual phone inhabitants" – people present for at least 180 nights per year – implying some 192,800 non-resident dwellers (Bricocoli, Peverini, & Caresana, 2025). The TARI waste-collection tax points in the same direction, with recorded waste volumes consistent with a population well above the registered total (Bricocoli, Peverini, & Caresana, 2025). The effective occupied stock, and hence effective rental demand, is therefore considerably larger than the registered figures suggest.

4.2.2.2 Forms of tenure

Milan is a city of homeowners with a comparatively small but significant rental sector. In 2021, owner-occupiers held about 70.0% of occupied dwellings (504,563 units), tenants 25.4% (183,227 units) and households under "other" titles 4.5% (32,734 units) (ISTAT, 2021). Comparison with the 2011 census reveals a clear, policy-relevant trend: the rental share contracted from 28.9% to 25.4% over the decade, while owner-occupation expanded from 64.1% to 70.0% (ISTAT, 2011, 2021; Figure 19; Table 8). This decline in rental incidence within the municipality mirrors the broader regional pattern documented for the Milan urban region (Coppola & Aramburu Guevara, 2025) and reflects the dualist, ownership-biased structure of the Italian housing system, in which the private rental market remains a secondary, largely small-landlord segment (Arbaci, 2019; Coppola et al., 2023).

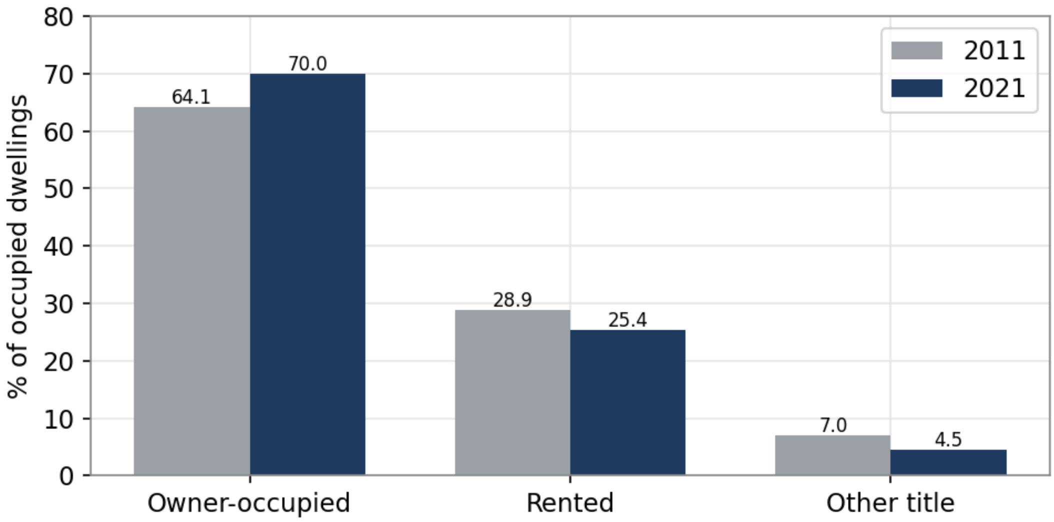

Figure 19 Tenure composition of occupied dwellings, 2011 and 2021.
Sources: ISTAT (2011, 2021).

Tenure	2011 (share)	2021 (share)
Owner-occupied	387,714 (64.1%)	504,563 (70.0%)
Rented	174,556 (28.9%)	183,227 (25.4%)
Other title	42,237 (7.0%)	32,734 (4.5%)
Total occupied dwellings	604,507	720,524

Table 8 Occupied dwellings by tenure, Comune di Milano, 2011 and 2021.
Sources: ISTAT (2011) as tabulated by Comune di Milano (2025); ISTAT (2021).

The 2011 universe is smaller because the permanent census revised the dwelling base.

The "other title" category warrants clarification, because it is sometimes mistaken for informal occupancy. In the Italian context it captures legally recognized, non-rental arrangements – mainly usufruct (*usufrutto*), free-use loans (*comodato*) and, above all, family-provided rent-free housing – rather than contract-less or informal occupation; Coppola et al. (2023) note that over 30,000 Milanese dwellings are designated for uses other than rent, predominantly family-provided rent-free housing. Tenure is also tightly linked to household size. As Table 9 shows, rental contracts are concentrated among the smallest households: in 2011, 47% of rented dwellings were occupied by a single resident, against 40% of owner-occupied units, underlining the rental sector's role in housing students, young workers and small or transient households (Comune di Milano, 2025).

Household size	Owner-occupied	Rented	Other title
1 resident	155,046 (40.0%)	81,915 (46.9%)	22,900
2 residents	117,850 (30.4%)	46,127 (26.4%)	9,116
3 residents	61,519 (15.9%)	24,997 (14.3%)	5,308
4 residents	42,170 (10.9%)	14,754 (8.5%)	3,492
5 or more	11,129 (2.9%)	6,763 (3.9%)	1,422
Total	387,714	174,556	42,237

Table 9 Occupied dwellings by tenure and number of residents, 2011.
Source: ISTAT (2011), as tabulated by Comune di Milano (2025).

4.2.3 Rental values and market behavior

For property values, the authoritative source is the *Osservatorio del Mercato Immobiliare* (OMI) of the *Agenzia delle Entrate*, whose half-yearly *quotazioni* record transaction-based sale and rent values by micro-zone. OMI values should be preferred to the asking prices published by listing portals such as *Idealista* and *Immobiliare.it*, which systematically exceed realized values; OCA notes that, although the gap between registered and advertised rents narrowed slightly in 2024, it remains substantial (Bricocoli, Peverini, & Caresana, 2025).

On the sales side, OMI recorded an average residential value of €4,675 per square meter in 2024, an increase of 8.5% on the previous year; ISTAT's price index shows that house prices in Milan rose by 65.1% between 2015 and 2024, nearly three times the general price index ((Agenzia delle Entrate, 2024); Bricocoli, Peverini, & Caresana, 2025). Values are sharply differentiated across the city, exceeding €10,000/m² in prime districts such as CityLife and Porta Nuova and reaching about €9,930/m² in the historic center, while peripheral neighborhoods range between €3,226/m² (south and west) and €3,972/m² (east) (Agenzia delle Entrate, 2024; Figure 20).

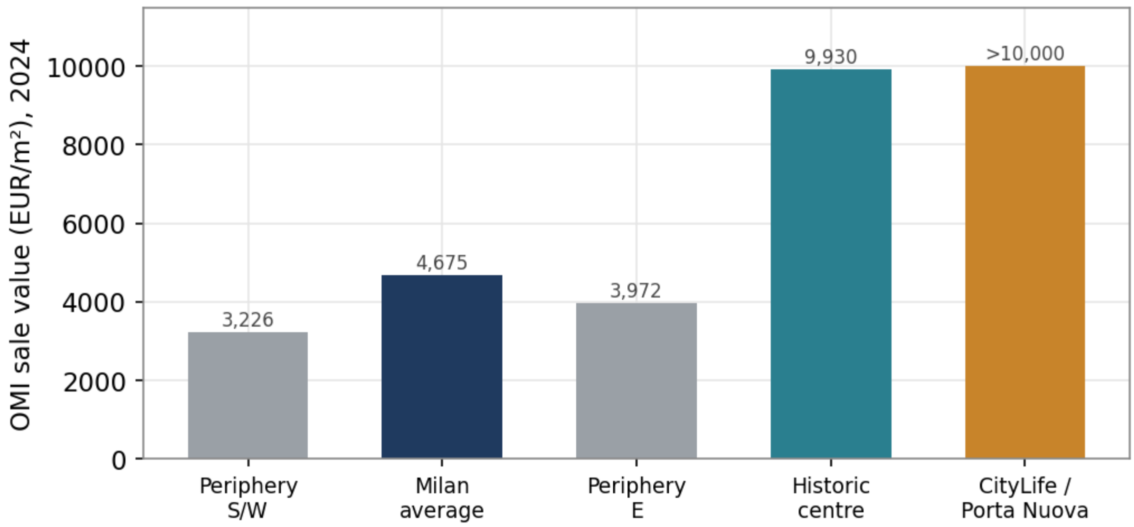

Figure 20 OMI residential sale values by area, 2024 (€/m²).
Source: Agenzia delle Entrate (2024), as reported in Bricocoli, Peverini, and Caresana (2025).

On the rental side, the weighted average rent of newly registered contracts rose from €189/m² per year in 2023 to €201/m² per year in 2024 (+6.8%), equivalent to roughly €16.7/m² per month (Agenzia delle Entrate, 2024; Bricocoli, Peverini, & Caresana, 2025). This level lies far above the threshold of €100–110/m² per year that OCA identifies as affordable for the most economically fragile households, underscoring the depth of the affordability gap (Bricocoli, Peverini, & Caresana, 2025). Table 10 summarizes the principal OMI indicators for 2024.

OMI indicator, Milan (2024)	Value
Average residential sale value	€4,675/m^2 (+8.5% y/y)
Historic-center sale value	≈ €9,930/m^2
Prime districts (CityLife, Porta Nuova)	> €10,000/m^2
Peripheral districts	€3,226–3,972/m^2
Avg. rent, new contracts	€201/m^2·yr (≈ €16.7/m^2·month)
Rent growth, 2023→2024	+6.8%
House-price growth, 2015–2024	+65.1%

Table 10 Key OMI property-market indicators, Comune di Milano, 2024.
Source: Agenzia delle Entrate (2024); Bricocoli, Peverini, and Caresana (2025).

Beyond price levels, the composition of the rental market is shifting decisively away from secure long-term tenancies. The share of long-term (over three-year) contracts among new leases fell from 67.7% in 2018 to 50.4% in 2024, a drop of roughly seventeen percentage points (Agenzia delle Entrate, 2024; Figure 21). Over the same period transitory contracts (one month to three years) expanded by about 10,000 units, agreed-rent (*canone concordato*) contracts more than doubled in 2024 to 4,471 (+122%) following the 2023 territorial agreement, and student- contracts rose by 53% to 1,728 (Bricocoli, Peverini, & Caresana, 2025). The trend is even starker in the fast-growing market for rooms in shared dwellings, where transitory contracts already account for 62% of the 17,300 rooms let in 2024 (Bricocoli, Peverini, & Caresana, 2025). This rebalancing toward short and transitory tenancies – itself closely related to the diffusion of short-term tourist rentals – erodes tenant security and signals the gradual displacement of the stable long-term rental that the city most needs.

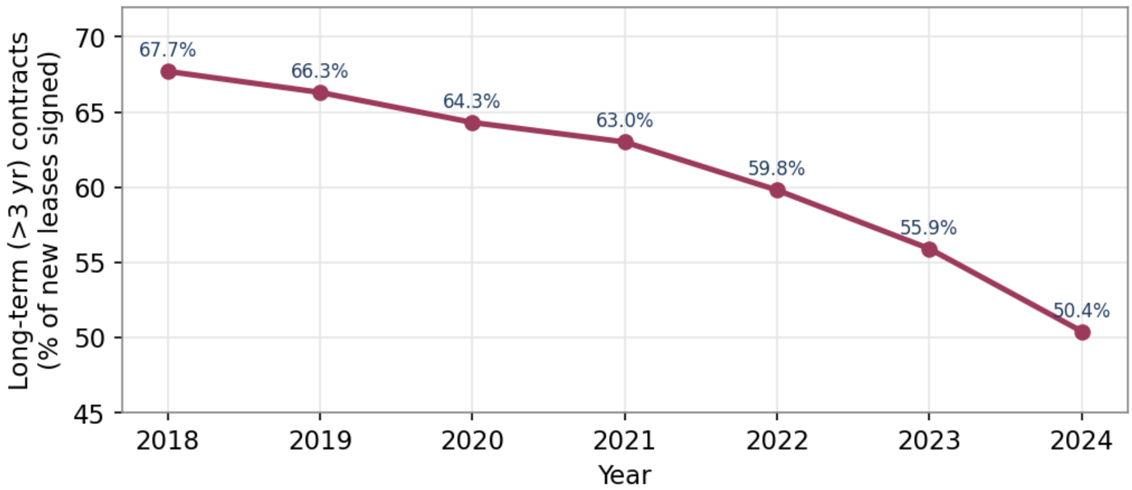

Figure 21 Long-term (>3-year) contracts as a share of new leases signed, 2018–2024.
Source: Agenzia delle Entratel (2024), as reported in Bricocoli, Peverini, and Caresana (2025).

4.2.4 Synthesis

Taken together, the evidence describes a rental market that is structurally small, increasingly expensive, and progressively precarious. Milan combines a large, highly educated and international population of small households with a dwelling stock in which owner-occupation is expanding, and the rental share is contracting. Official statistics understate both occupancy and rental demand, because a sizeable non-resident population occupies dwellings that the census records as "not occupied" (Bricocoli, Peverini, & Caresana, 2025; Coppola & Aramburu Guevara, 2025). Meanwhile, OMI data show rents and prices rising far faster than the general price level, and the contractual mix shifting from secure long-term leases toward transitory and short-stay arrangements. These dynamics are consistent with the financialization of Milanese housing and the partial marketisation of its social-housing supply (Coppola et al., 2023), and they define the policy challenge addressed by the Comune di Milano's housing strategy, the Piano Casa, which seeks to expand affordable and long-term rental supply in a market increasingly oriented toward ownership, tourism and short-term yield (Comune di Milano, 2024).

4.3 Airbnb Statistics

4.3.1 São Paulo

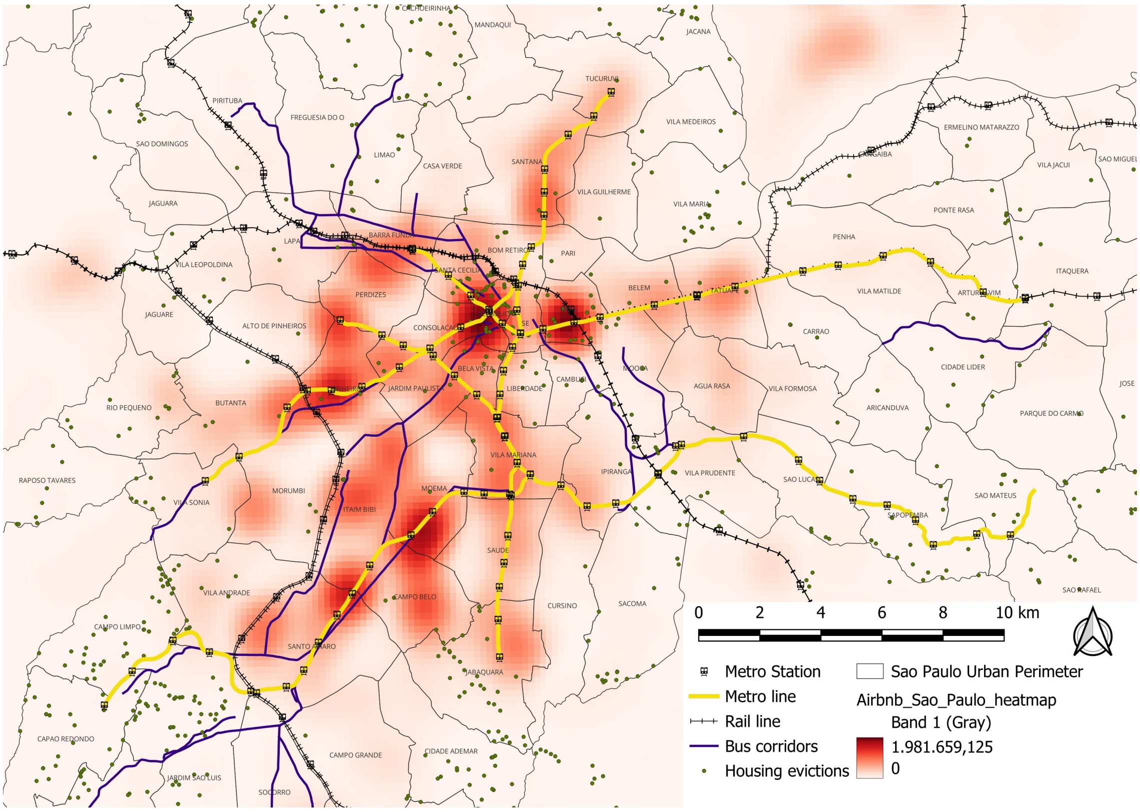

Figure 22 Airbnb Heatmap of the Municipality of São Paulo
Source: data scraped from Airbnb website (2025)

São Paulo's urban perimeter is far larger than Milan's; however, a significant portion of its territory, especially in the southern area, is composed of natural protection zones. Owing to this vast spatial extent, it is difficult to ensure comprehensive coverage of all urbanized areas through public transportation. Although São Paulo has been continuously expanding its infrastructure network, the current system remains far from adequate.

Against this background, the map highlights a clear concentration of Airbnb listings along the main transportation infrastructures. Like what is observed in Milan, the main clusters appear to be grouped around accessibility and connectivity; however, in São Paulo, business districts emerge as particularly strong focal points. The map also allows the identification of derelict buildings through housing eviction data.

In contrast to Milan, eviction records in São Paulo show a pronounced concentration in the central neighborhoods of República and Brás. In addition, significant clusters of eviction records are visible in the urban fringes, especially in southern districts such as Campo Limpo, Capão Redondo, Jabaquara, and Cidade Ademar.

The strongest presence of Airbnb listings is in the downtown area. São Paulo's historic center, despite its state of neglect, continues to attract a substantial number of visitors due to its cultural and architectural relevance, as well as its intense commercial and business activities. Brás represents another major concentration of listings, located to the east of the city center, and stands out as a key commercial district not only for São Paulo but also at the national scale.

Moving towards the northwest, the district of Barra Funda constitutes another important node. Here, one of the busiest bus terminals in the country is located adjacent to a major subway and railway station, serving thousands of daily commuters. In this area, the presence of the Allianz Park Arena further contributes to the polarization of short-term rental offers.

Vila Madalena, by contrast, is primarily known as a nightlife district, where bars, restaurants, and extensive street art attract visitors from across Brazil and abroad. Further south, the business districts of Pinheiros, Itaim Bibi, Moema, and Brooklin – currently the most important financial hubs in São Paulo – also display a high density of Airbnb listings. In these areas, short-term rentals are clearly embedded within a significant number of residential buildings, contributing to the clustering of listings in the southwestern portion of the city.

Slightly south of the city center, the presence of Ibirapuera Park appears to play a key role in stimulating short-term rental supply, as evidenced by the notable concentration of listings in its surroundings. Similarly, Avenida Paulista and the subway axis extending southward emerge as particularly attractive locations for Airbnb listings.

Finally, in the northern part of the city, another linear concentration of listings can be observed along the subway line from Tietê to Tucuruvi. This pattern is likely influenced by the proximity of major urban landmarks, including Campo de Marte Airport, the Tietê bus terminal and railway station, and the Expo Center Norte convention complex.

4.3.2 Milan

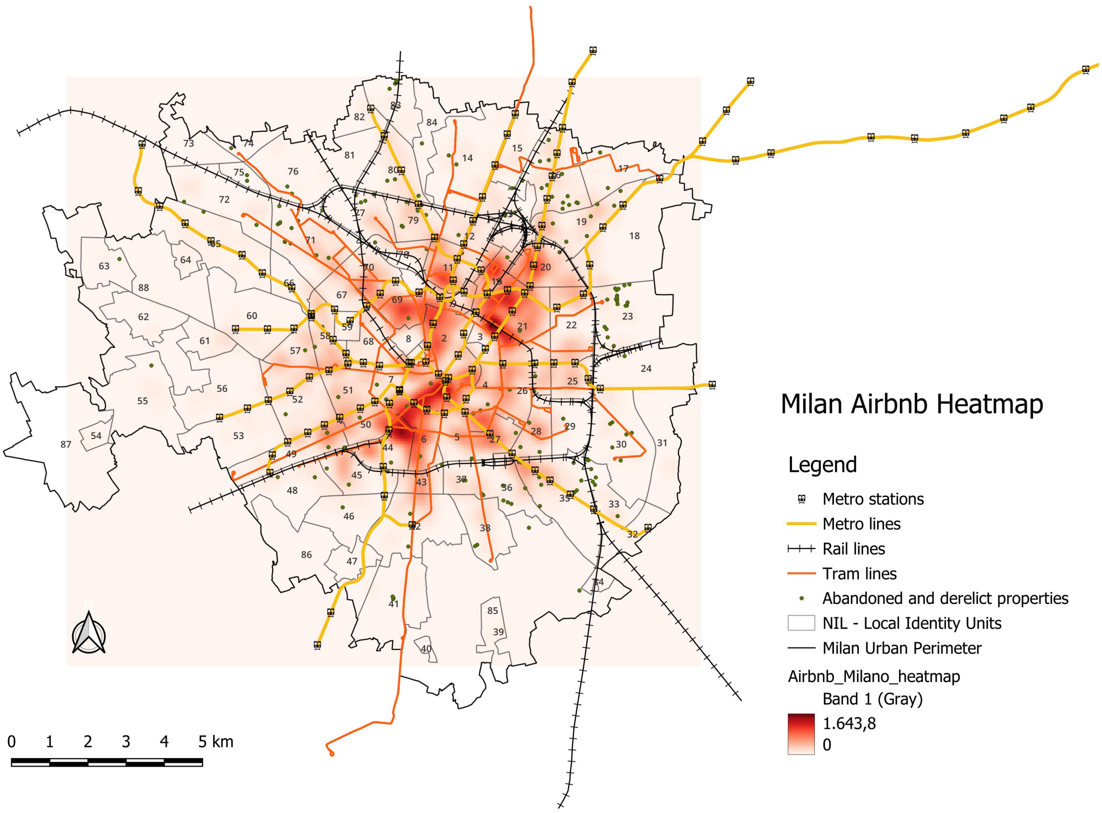

Figure 23 Airbnb Heatmap of Comune di Milano
Source: Inside Airbnb (2025)

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Milan is a compact city with very few areas unserved by public transportation. Metro and rail lines cover most of the densely populated zones, while bus and tram networks complement these corridors by providing access to more peripheral or less directly connected locations. As a result, public transport plays a central role in structuring daily mobility across the city.

Within this framework, the map reveals the expected concentration of Airbnb listings along the main transportation infrastructures. These patterns become even more pronounced in proximity to major urban landmarks such as the Duomo Cathedral, Central Station, the Navigli district – well known for its nightlife – and student-dominated areas including Porta Venezia and Loreto.

Milan's historic center concentrates the city's main touristic points of interest, which explains why this area displays the highest density of listings in the heatmap. Moving southwest along Via Torino, from Duomo towards Porta Genova, Airbnb listings appear clustered along the tram line. This corridor is especially active due to its vibrant nightlife and its proximity to several major university campuses, including La Statale, Cattolica, Bocconi, and IULM.

In the northwestern sector of the city, three additional focal points emerge, corresponding to the Chinatown, Porta Garibaldi, and Isola districts. These areas attract visitors primarily because of their intense cultural and commercial activities. Another strong conglomerate of listings is visible in the northeastern part of Milan. Here, the heatmap shows a dense concentration of short-term rental offers around Central Station, within the Porta Venezia district – particularly along Corso Buenos Aires – and in the Nolo district.

Milano Centrale represents the most important transportation hub in the city and attracts thousands of visitors daily, a condition that evidently incentivizes landlords to shift from long-term rentals (LTR) to short-term rentals (STR). Porta Venezia further reinforces this pattern, as it functions as a major hub for retail, bars, and restaurants, encouraging tourists to stay in the surrounding area. Nolo, in turn, presents a combination of attributes that increasingly attract visitors: its relative proximity to the city center, good infrastructure, strong connectivity to other districts, a wide range of services and businesses, proximity to universities such as Politecnico di Milano and Università degli Studi di Milano, and a diverse offering of bars, restaurants, and cafés. Notably, the area was historically very affordable, although this condition has been progressively changing over time.

Overall, the map shows that most listing offers are located within the "ring" formed by the railway infrastructure, which historically represents a significant barrier, particularly for pedestrian mobility. The influence of public transport is further confirmed by the clear condensation of listings along subway and tram axes.

Finally, as expected, the highest concentrations of short-term rentals occur in locations where multiple public transportation options are available, further confirming the central role of accessibility in shaping the spatial distribution of listings.

4.4 Airbnb and Neighborhood Change in São Paulo

Applying the Garay-Tamajón et al. (2022) neighborhood-clustering method to São Paulo's 96 districts, five clusters emerge that express the city's strong center–periphery divide. Airbnb is overwhelmingly concentrated in a small, high-income, central-southwest "affluent touristified core" (Pinheiros, Itaim Bibi, Moema, Vila Mariana, Jardim Paulista and neighbors) and in a redeveloping, high-vacancy downtown cluster (Sé, República, Brás), while it is almost entirely absent from the vast low-income periphery. Higher Airbnb intensity coincides with higher income, higher dwelling vacancy and the city's most expensive real estate – supporting hypothesis H1. The result mirrors the pattern found for Milan, but on a far more unequal urban canvas.

4.4.1 Method

The pipeline is identical to the Milan analysis: a district × variable matrix is standardized to z-scores; the number of clusters k is examined with the silhouette method; k-means is fitted (Euclidean distance, k-means++, 30 restarts); each cluster is read from its standardized centroid, named and mapped; and Airbnb intensity is read against the socio-economic variables to test the hypotheses. Silhouette widths peak at k = 2 (0.41) – reflecting São Paulo's stark rich-core/poor-periphery dualism – and settle near 0.23 from k = 3 onward; following Garay's interpretability rationale we retain k = 5. One extreme new-build outlier (Barra Funda, +132% population growth 2010–22) was excluded, as Cascina Merlata was in Milan; 95 districts were clustered.

4.4.2 Data and variables

Ten variables were assembled at district level. Airbnb listings were assigned to districts by exact point-in-polygon on the official boundary GeoPackage (SIRGAS 2000 / UTM 23S); 3,992 of the 17,519 scraped points fell outside the municipality (coastal/metropolitan mislabels) and were dropped.

Group	Variable	Source (year)
Demography	Population; population growth 2010–22; % single-person households	IBGE Census 2010 & 2022 / SMUL
Economy	Mean monthly income; % low income (≤2 min. wages); % high income (>10 min. wages)	IBGE Census 2010 (by district)
Housing	% vacant dwellings (not occupied)	IBGE Census 2022
Airbnb	Listings per 1,000 residents; % entire home; % professional (>10-listing) host	Scrape, Jul 2025

Table 11 Clustering variables. Two variables from the Milan model are city-level only in the Brazilian census and were omitted: graduates and foreign population. Real-estate prices (FipeZap) are not published by district, so district income is used as the value/affordability proxy; FipeZap's top-district ranking is used as corroboration (§4).

4.4.3 Cluster results

The standardized centroids (Figure 24) define each cluster. The affluent core is high on income, single-person households, Airbnb intensity and professional hosts; the downtown cluster is defined by extreme vacancy and rapid population growth alongside high Airbnb; the periphery is uniformly low on every status and Airbnb dimension.

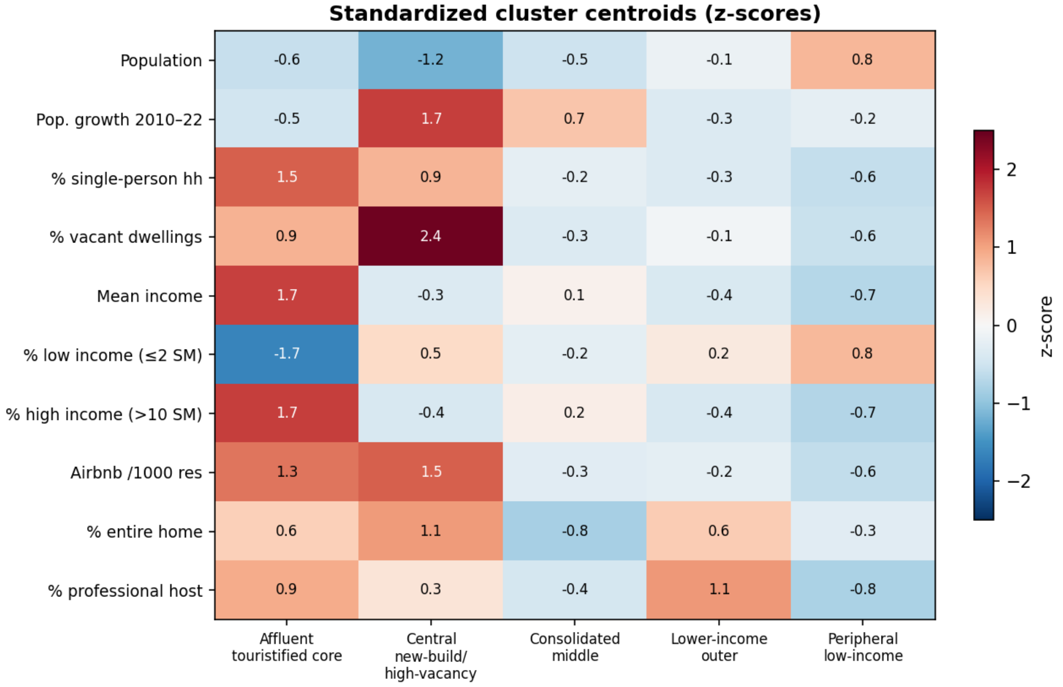

Figure 24 Standardized cluster centroids (z-scores). Red = above the city average, blue = below.

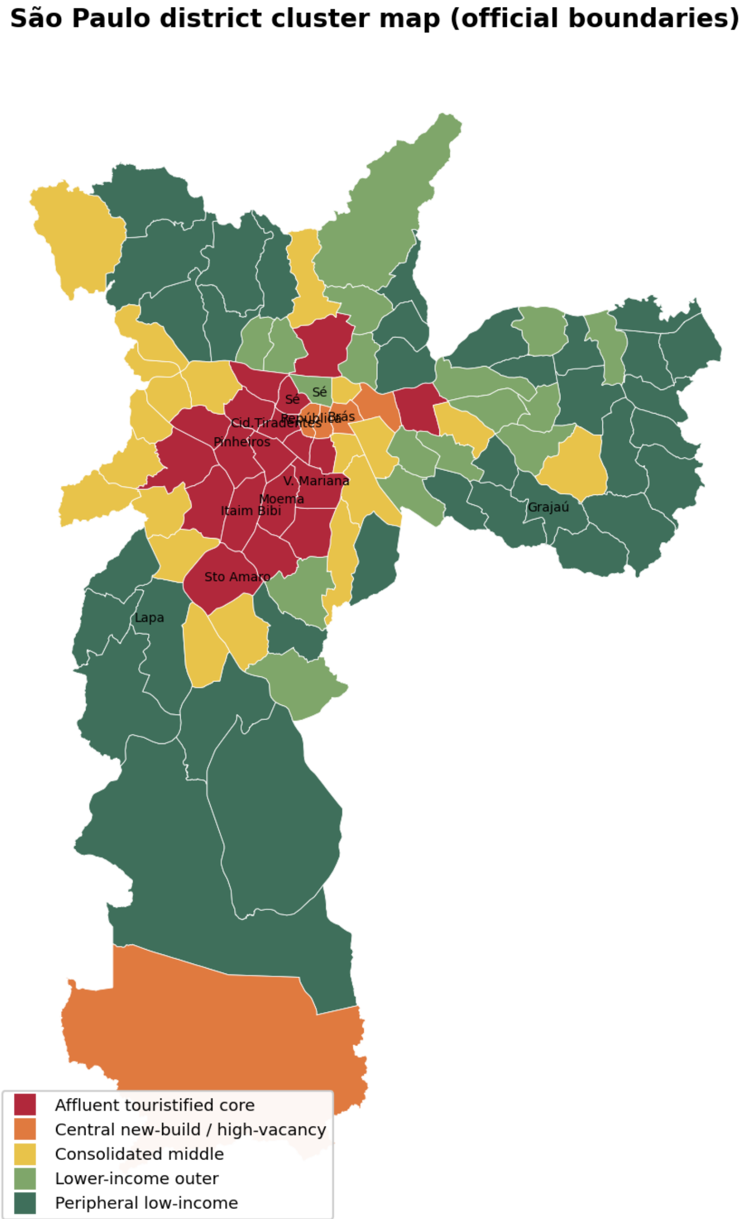

Figure 25 District cluster map using the official São Paulo boundaries (SIRGAS GeoPackage), each district shaded by its cluster. Note the affluent core in the center-southwest and the low-income periphery.

Cluster	Districts	Airbnb /1,000	Mean income (R$)	% low income	% high income	% prof. host
Affluent touristified core	18	5.2	3,543	17.1	11.5	31.0
Central new-build / high-vacancy	5	5.7	1,137	38.8	2.0	20.7
Consolidated middle	20	1.1	1,659	31.4	4.6	7.5
Lower-income outer	17	1.1	1,097	36.5	2.1	33.6
Peripheral low-income	35	0.2	712	42.1	0.6	1.5

Table 12 Cluster profiles (raw means). Airbnb intensity and income fall together from the core to the periphery.

4.4.4 The five clusters

Affluent touristified core (18 districts): Pinheiros, Itaim Bibi, Moema, Vila Mariana, Jardim Paulista, Campo Belo, Perdizes, Santo Amaro, Consolação, Bela Vista, Santa Cecília and similar – the wealthy central-southwest "vetor sudoeste". Highest incomes, most single-person households, the highest Airbnb intensity (5.2/1,000) and professional-host share (31%). The São Paulo counterpart of Milan's touristified core plus trendy ring.

Central new-build / high-vacancy (5 districts): Sé, República, Brás, Belém (plus the rural anomaly Marsilac). The historic downtown, marked by very high dwelling vacancy (24%), rapid population growth from residential verticalization, and high Airbnb intensity dominated by entire homes (90%). This is the gentrifying/"retaking the center" front.

Consolidated middle (20 districts): Lapa, Mooca, Ipiranga, Vila Leopoldina, Saúde-area and others – middle-income, established residential districts with modest Airbnb presence.

Lower-income outer (17 districts): Penha, Jabaquara, Vila Prudente, Tucuruvi, Casa Verde and similar intermediate districts – lower incomes and little Airbnb, though with a notably high professional-host share among the few listings.

Peripheral low-income (35 districts): the large periphery – Grajaú, Capão Redondo, Brasilândia, Cidade Tiradentes, Parelheiros, Itaim Paulista and many more. The lowest incomes, highest poverty shares, largest populations and almost no Airbnb (0.2/1,000). Over a third of the city's districts, home to most of its residents.

4.4.5 Hypotheses for São Paulo

H1 – Airbnb concentration is associated with higher housing values. Supported. Airbnb intensity rises steeply with district income (Figure 26), and the districts with the most listings are also the most expensive: FipeZap's ten highest-priced sale districts in 2022 – Itaim Bibi (R$15,506/m²), Pinheiros, Jardins, Moema, Vila Mariana, Paraíso, Perdizes, Bela Vista – are all in the affluent-core cluster. Since district-level price series are not published, income and this price ranking jointly stand in for the rent/value variable.

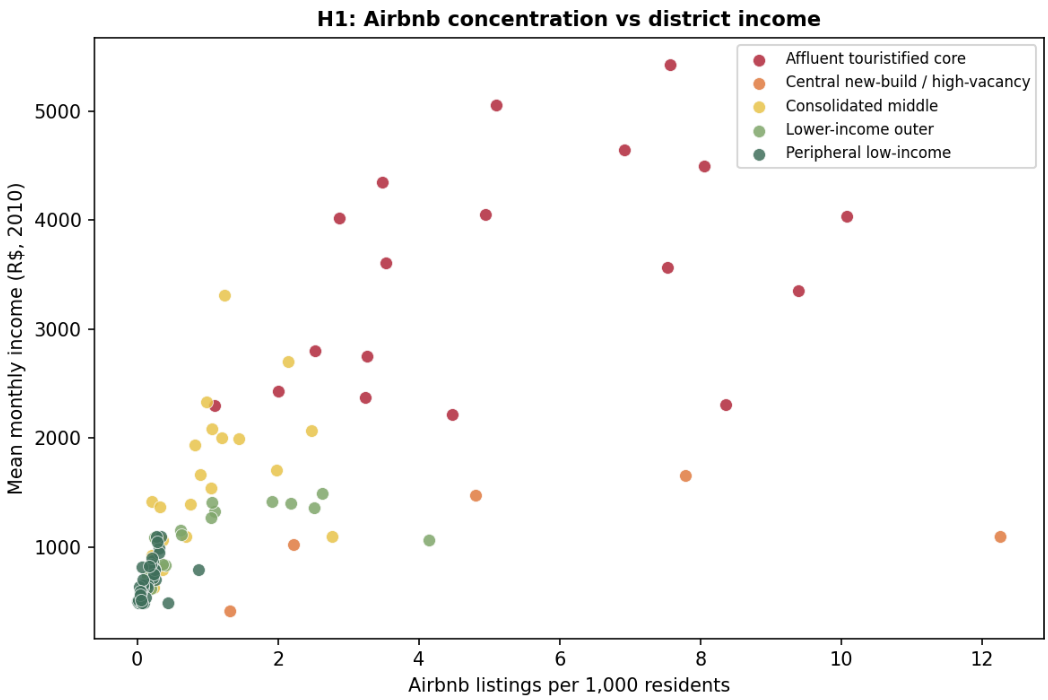

Figure 26 H1: Airbnb listings per 1,000 residents vs mean district income, colored by cluster.

H2 – Airbnb-related demand is associated with displacement / population change. Partially supported. The affluent core and the downtown cluster combine high single-person-household shares with stagnant or negative resident growth (core −1.9%) and high vacancy, while the periphery holds the bulk and growth of the lower-income population – the classic São Paulo center–periphery structure that the platform reinforces rather than creates.

H3 – Indirect upward pressure on peripheral housing. Not testable here. Without district-level price series for the periphery, the indirect-price hypothesis cannot be evaluated; the near-absence of Airbnb in the periphery (0.2/1,000) means any effect would in any case be weak and diffuse.

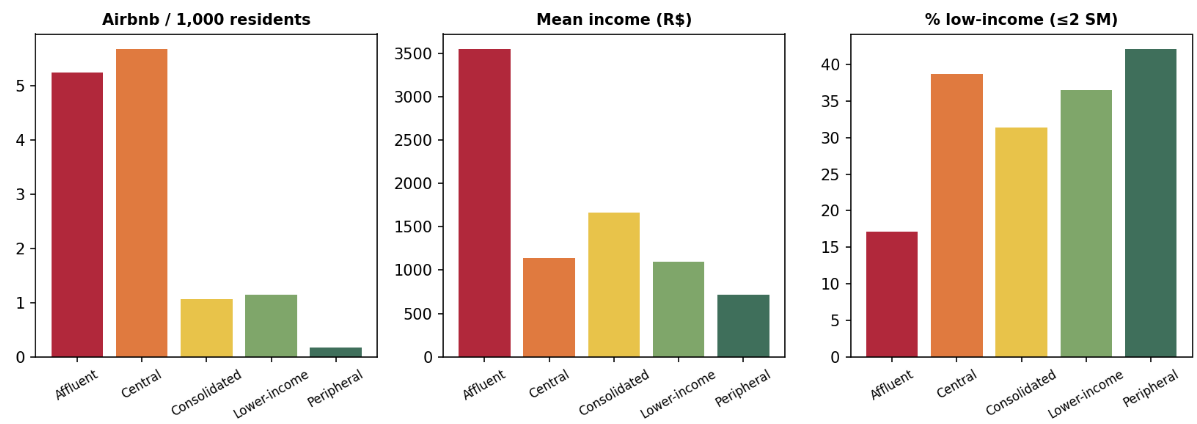

Figure 27 Cluster means for Airbnb intensity, income and poverty share – the co-movement underlying H1.

4.4.6 Limitations

Spatial join: exact point-in-polygon on the official boundaries, with coordinates as scraped (lightly jittered by the platform). Variables: graduates and foreign population exist only at city level in the census and were omitted; income is 2010 (latest district-level census income), against a July-2025 Airbnb snapshot and 2022 demographics; real-estate prices are not published by district, so income proxies value and FipeZap's ranking corroborates it. The downtown cluster includes the rural outlier Marsilac, grouped by its high vacancy. Cluster labels are interpretive. None of these changes the robust central result: in São Paulo, Airbnb is concentrated where incomes and property values are highest, and absent from the low-income periphery.

4.5 Airbnb and Neighborhood Change in Milan

Following Garay-Tamajón et al. (2022), we treat the neighborhood as the unit of analysis and apply k-means clustering to Milan's 88 Local Identity Nucleus (NIL), combining Airbnb intensity with demographic, economic and housing-market variables. Five clusters emerge that map closely onto the paper's Barcelona typology: a small historic touristified core, a trendy/affluent semi central ring, a large consolidated middle ring, a peripheral lower-income belt, and a handful of sparse/park-edge areas. Airbnb is heavily concentrated in the core and the trendy ring – precisely the clusters with the highest rents and property values – supporting hypothesis H1. Migration and demographic gradients are consistent with H2 (central renewal alongside peripheral out-migration), and rising peripheral rents give partial support to H3.

4.5.1 Method

The pipeline reproduces Garay-Tamajón et al. (2022): assemble a NIL × variable matrix; standardize all variables to z-scores; select the number of clusters k with the silhouette method; fit k-means (Euclidean distance, k-means++ initialization, 25 restarts); interpret each cluster from its standardized centroid; name and map the clusters; and read Airbnb intensity against the housing variables to test H1–H3.

Silhouette widths were modest and declined with k (0.29 at k=2 to 0.20 at k=5), as in the original study, whose total explained variance was also moderate (43%). Following the authors' interpretability rationale, we retained k = 5 to obtain a classification with enough discrimination to be meaningful. One new-build outlier NIL (Cascina Merlata, 100% vacant at the 2021 census) and four near-uninhabited park

NIL were excluded, exactly as the authors excluded the anomalous Marina del Prat Vermell; 83 of 88 NIL were clustered.

4.5.2 Data and variables

Twelve variables span the paper's four groups. Airbnb listings were assigned to NIL by a nearest-centroid spatial join on the official NIL geometry (Comune di Milano ds964), because the InsideAirbnb neighborhood labels are a separate geography and cannot be matched to NIL by name.

Group	Variable	Source (year)
Demography	Population; % foreign; % graduates; % single-member families; net migration /1,000	Comune di Milano / ISTAT (2023)
Economy	Employment rate (proxy for local economic activity)	ISTAT census (2021–23)
Housing	% vacant dwellings	ISTAT permanent census (2021)
Housing	OMI residential sale value (€/m^2); OMI rent (€/m^2/mo)	Agenzia delle Entrate (2021) zone→NIL
Airbnb	Listings per 1,000 residents; % entire home; % professional (large) host	InsideAirbnb (Jun 2025)

Table 13 Clustering variables and sources. Income brackets, IMI and tourist arrivals are reported separately (Section 6) as they are available only at city or CAP level.

4.5.3 Cluster results

The standardized centroids (Figure 28) summarize what defines each cluster. The historic core stands out on every Airbnb and price dimension; the trendy ring is the graduate-rich, rising semi center; the peripheral and sparse clusters are negative across the board.

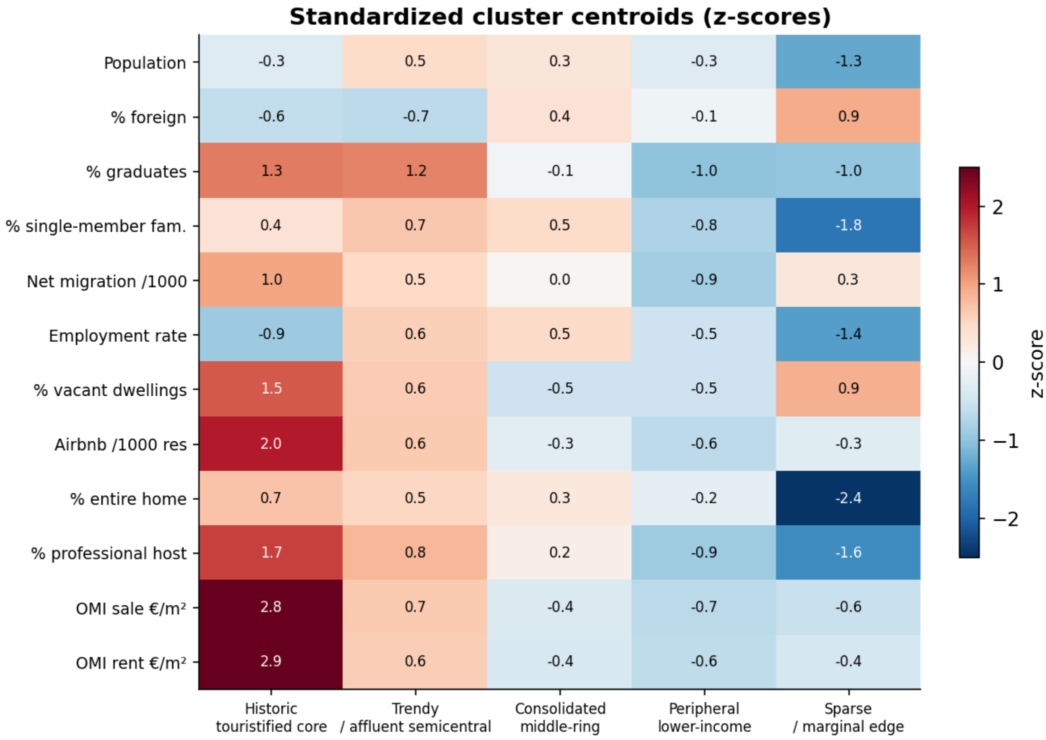

Figure 28 Standardized cluster centroids (z-scores). Red = above city average, blue = below.

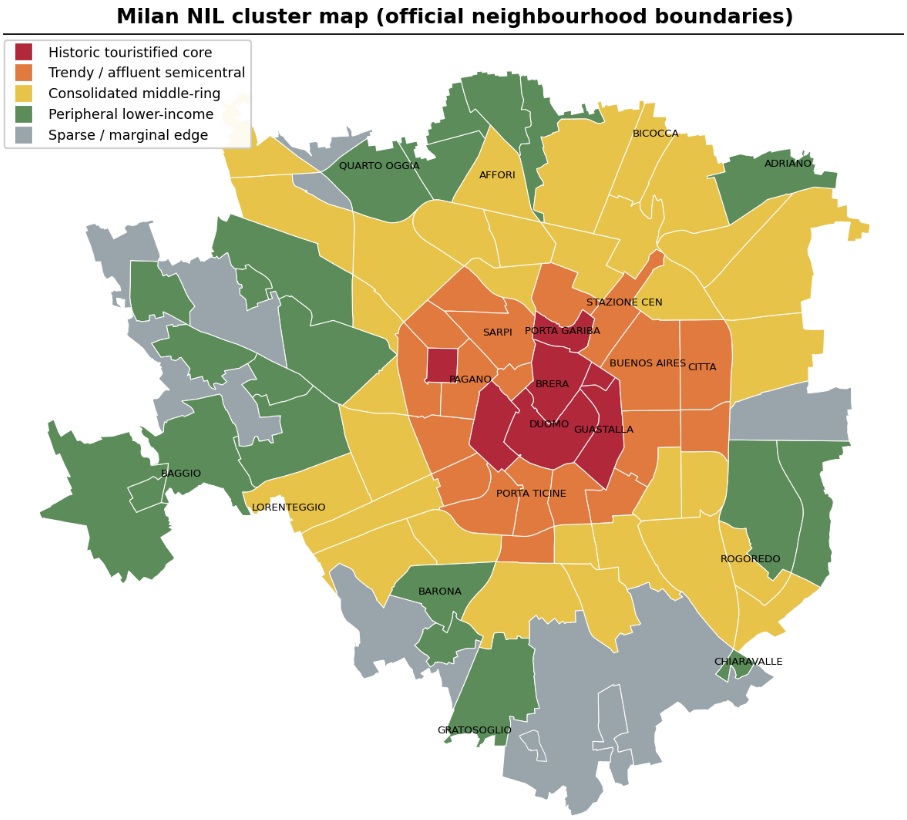

Figure 29 Cluster map using the official NIL administrative boundaries (Comune di Milano ds964 shapefile), each neighborhood shaded by its cluster. The concentric structure – touristified core → trendy ring → middle ring → periphery – is clear.

Cluster	NIL	Airbnb /1,000	Rent €/m²	Sale €/m²	% graduates	% prof. host
Historic touristified core	6	51.3	24.3	8,288	42.9	45.7
Trendy / affluent semi central	18	28.0	14.2	4,735	42.2	34.2
Consolidated middle-ring	31	12.3	9.7	3,089	28.9	25.5
Peripheral lower income	21	5.4	8.5	2,561	19.3	11.7
Sparse / marginal edge	7	11.6	9.0	2,663	19.6	2.8

Table 14 Cluster profiles (raw means). Airbnb intensity, rents and values fall monotonically from core to periphery.

4.5.4 The five clusters

Historic touristified core (6 NIL): Duomo, Brera, Guastalla, Magenta–S. Vittore, Porta Garibaldi–Porta Nuova, Tre Torri. The highest Airbnb intensity (51 listings/1,000 residents), the highest professional-host share (46%), the highest rents (€24/m²) and sale values (€8,290/m²), high graduate share and high dwelling vacancy (28% – partly second homes and short-let use). This is Milan's equivalent of Garay's "historic, highly touristified" cluster.

Trendy / affluent semi central (18 NIL): Navigli/Ticinese, Isola, Buenos Aires–Porta Venezia, Stazione Centrale, Sarpi, Porta Genova, Città Studi, Pagano, XXII Marzo, Porta Romana and similar. Strong Airbnb presence (28/1,000), the city's highest graduate share, high employment and the strongest in-migration – the "trendy"/"affluent" combination, the second wave of touristification.

Consolidated middle-ring (31 NIL): the large ordinary-residential belt (Loreto–NoLo, Bicocca, Lambrate, Niguarda, Affori, Lodi–Corvetto, Giambellino and others). Moderate on all dimensions, with a substantial foreign population; this is where Airbnb is now diffusing outward.

Peripheral lower income (21 NIL): Baggio, Gratosoglio, Quarto Oggiaro, Barona, Gallaratese, Comasina, Forze Armate, etc. Low graduate share, low prices, minimal Airbnb (5/1,000), and – distinctively – negative net migration (residents leaving). The “lowest income” periphery.

Sparse / marginal edge (7 NIL): park-edge and low-population areas (Parco Forlanini, Quintosole, Ronchetto delle Rane, the agricultural-belt NIL). Very small resident populations and a high share of private rooms; included for completeness but statistically marginal.

4.5.5 Hypotheses for Milan

H1 – Airbnb concentration is associated with higher rents. Supported. Across NIL, Airbnb intensity and residential rent rise together (Figure 30): the touristified core averages 51 listings/1,000 and €24/m², the trendy ring 28/1,000 and €14/m², while the periphery sits at ~5/1,000 and €8/m². The association also holds over time: between 2011 and 2021 OMI sale values rose +20% in the central band and +50% in the semi central “trendy” band – the very areas where Airbnb concentrates.

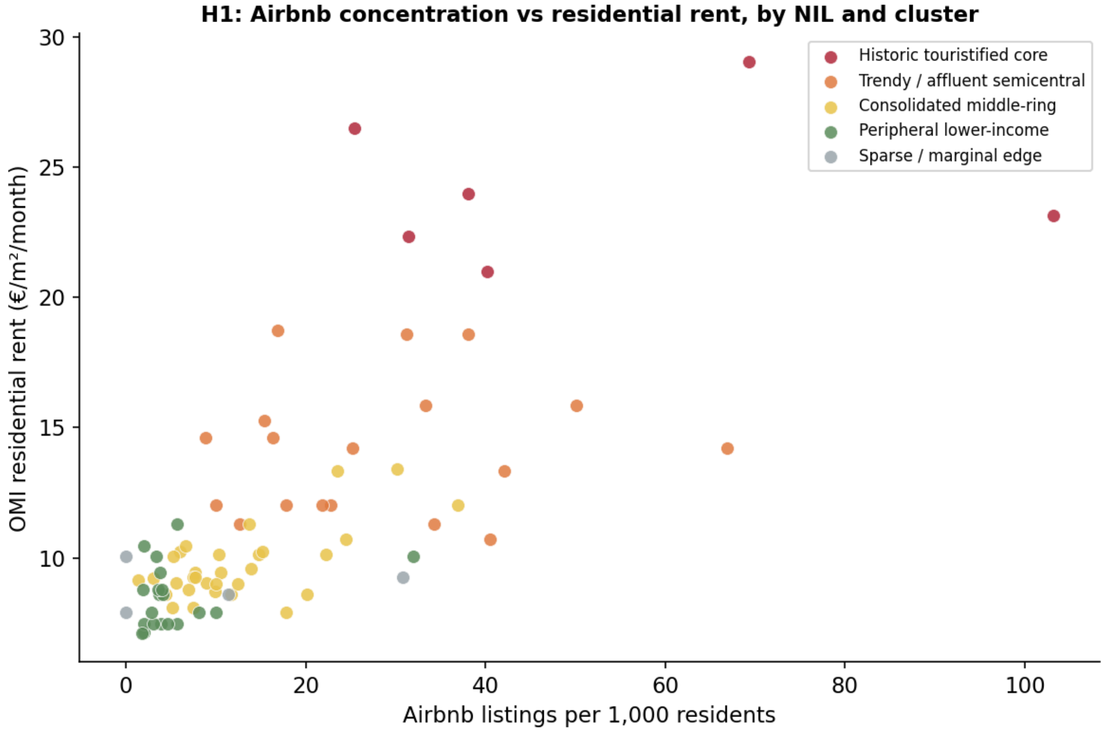

Figure 30 H1: Airbnb listings per 1,000 residents vs OMI residential rent, by NIL, colored by cluster.

H2 – Airbnb-driven demand is associated with displacement toward the periphery. Partially supported. The central and trendy clusters combine high graduate shares, high single-person-household shares and strong in-migration, while the peripheral lower-income cluster shows net out-migration (−22 per 1,000). This is consistent with the paper's finding that touristified cores are demographically renewed (younger, more qualified, more international residents) while the original, more vulnerable population thins out and peripheral areas absorb movement. The data are cross-sectional, so this is an association, not a measured flow.

H3 – Displacement indirectly raises peripheral property prices. Partially supported. Peripheral rents rose +22% between 2011 and 2021 despite low Airbnb presence, consistent with spill-over demand from residents priced out of the center; the effect is smaller than in the core and uneven across the periphery.

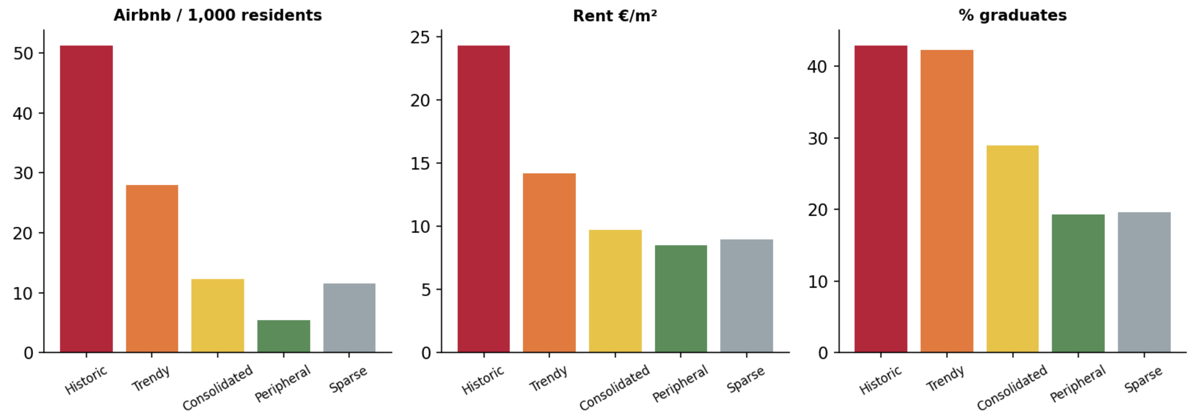

Figure 31 Cluster means for Airbnb intensity, rent and graduate share – the co-movement underlying H1–H2.

4.5.6 Requested variables available only at city/CAP level

Three of the requested variables do not exist at NIL level in the open sources and are reported here as context rather than as clustering inputs:

1. Income (declarant brackets, 2021, by CAP). City-wide, about 23% of declarants report ≤ €10,000 and 3.8% report over €120,000; the high-income share concentrates in the central CAPs that coincide with the touristified core and trendy clusters, reinforcing their "affluent" character.
2. IMI (real-estate market intensity). Computable at city level as transactions over stock: ≈26,950 residential transactions against ≈810,000 dwellings give a city IMI of about 3.3% for 2021. OMI publishes transaction counts only by municipality, so a NIL-level IMI cannot be derived from the open data.
3. Employees (addetti). Not published at NIL level; the resident employment rate (from the census) is used in the clustering as the available economic-activity proxy.

Tourism demand context: total arrivals to Milan recovered from 1.9 million in 2020 to 9.1 million in 2024 and 9.7 million in 2025, well above the 2019 pre-pandemic level (7.5 million) – the demand backdrop to the short-let expansion documented here.

4.5.7 Methodological notes and limitations

Spatial join. The 22,540 listings were assigned to the official NIL by nearest-centroid (Voronoi) assignment on the ds964 NIL centroids, validated against the InsideAirbnb labels (e.g. listings labelled “DUOMO” map to NIL Duomo, “BUENOS AIRES” to NIL Buenos Aires). InsideAirbnb coordinates are slightly jittered, which can misplace a few border listings but does not affect NIL-level aggregates.

OMI to NIL. OMI values are published by OMI micro-zone; each NIL was assigned the value of the OMI zone(s) covering it via a descriptive-name crosswalk (41 zones → 88 NIL), with peripheral NIL inheriting their band’s value. This reproduces the central–peripheral gradient but smooths within-zone variation.

The analysis is cross-sectional (mostly 2021–2023 socioeconomics against a June-2025 Airbnb snapshot); silhouette values are modest (as in the source paper); and income/IMI/addetti enter only as context. Cluster labels are interpretive. None of these qualifications changes the central, robust finding: Airbnb in Milan is concentrated where rents and values are highest and where the population is being renewed.

4.6 Comparison São Paulo with Milan

The two cities share the core finding: Airbnb concentrates in the most central, highest-value, most professionalized areas and is scarce elsewhere, and a small professional-host segment dominates the busiest districts. They differ in urban form. Milan is compact and monocentric, with a clear gradient from a touristified historic core through a trendy ring to a modest periphery. São Paulo is far larger and far more unequal: its Airbnb market sits in a privileged central-southwest wedge and a reviving downtown, set against a vast low-income periphery – more than a third of all districts – where the platform is essentially absent. In São Paulo the story is therefore less about a touristified core displacing residents outward and more about Airbnb tracking, and reinforcing, a pre-existing socio-spatial divide.

CHAPTER 5 – CONCLUSIONS

This thesis aimed to examine how the absence of dedicated short-term rental (STR) regulation shapes housing dynamics in two financially central but structurally different cities, São Paulo and Milan. Combining a case-study approach with a replicable, neighborhood-level clustering analysis adapted from GarayTamajón et al. (2022), it compared how the same platform economy inscribes itself onto two markedly different urban fabrics.

On the regulatory question, the two countries share a common starting point: neither has a dedicated national STR statute, and both govern the phenomenon through instruments that predate the sharing economy. Remarkably, both have converged on the same constitutional resolution – the social function of property – with the judiciary moving ahead of the legislature in each case. The decisive difference lies in institutional maturity: Italy regulates through a layered, multi-level machinery (the CIN, the *cedolare secca* regime, and emerging regional models such as Tuscany's and Emilia-Romagna's), whereas in Brazil effective authority is displaced downward onto condominium assemblies and the courts.

On the spatial and housing question, the empirical analysis reached a consistent finding across both cities: Airbnb concentrates in the most central, highest-value and most professionalized neighborhoods and is largely sparse elsewhere. In Milan this produces a clear concentric gradient from a touristified historic core; in São Paulo it tracks and reinforces a pre-existing center – periphery divide. In both, the withdrawal of dwellings from the long-term market, upward pressure on rents, and even the capture of subsidized and social housing show that the regulatory gap is not neutral – it operates in practice as a subsidy to speculation.

Taken together, the comparison suggests that the disruptive potential of STRs is not a fixed property of the technology but a function of the regulatory environment – and, above all, of enforcement. Policy responses that follow from this analysis include mandatory host registration and genuine platform data sharing, primary-residence requirements and density caps in saturated central areas, tying bonused building rights to permanent or affordable housing, and active protection of social-housing stock – measures that address the housing impact without resorting to outright bans.

The study has limitations that also mark directions for future research. The clustering analysis is cross-sectional, pairing recent Airbnb snapshots with census and registry data of differing origins, and several variables (notably district-level prices in São Paulo) were not available at the chosen scale. Longitudinal data, finer grained price series, and qualitative work with residents and hosts would help move from the associations documented here toward firmer causal and lived experience accounts of how platform-mediated STRs reshape the right to housing.

In the preparation of this thesis, I inform to have used artificial-intelligence-based tools (Claude – Anthropic) for the following limited and supervised purposes:

I. grammar and spelling correction;
II. language and stylistic enhancement of text originally drafted by me;
III. support in data analysis (for example, assistance with code, suggestion of analytical methods, and verification of interpretations).

These tools were employed solely as a support. The intellectual authorship of the work remains entirely mine: all content, results, and conclusions were conceived, verified, and validated by me.

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Annex I – Technical Note on Primary Data Collection for the Municipality of São Paulo

1. Overview and justification for custom tooling

Airbnb operates as a closed platform: no public API exposes its inventory, and no official data feed covers host profiles, listing attributes, or geographic distribution of properties. Following the work of Tambelli (2020), primary listing data from the municipality of São Paulo was obtained directly from the platform's web interface through an automated extraction process known as web scraping, whereby a software program navigates pages and systematically records information from them without manual intervention.

Several open-source scraping tools targeting Airbnb exist in the literature, but none offered the combination of spatial granularity, field selection, and reproducibility required here. The decision was therefore taken to build a purpose-specific program in Python 3, designed from the outset around the analytical needs of this research rather than around the broadest possible data capture. The program is organized as a multi-module package and is the sole source of the dataset used throughout this work.

2. Program architecture and technical stack

The collection program is structured as a Python package whose source code lives under a top-level src/ directory, subdivided into five sub-packages with clearly separated concerns:

- builder – assembles the search URLs and geographic query parameters sent to the platform;
- extractor – parses the HTML returned by the browser and retrieves individual data fields through targeted regular expressions;

- models – defines the internal data classes used to represent a listing record and a geographic grid cell;
- navigators – wraps the browser-automation layer and exposes a uniform interface for loading and capturing page sources;
- utils – provides shared helpers for file input/output, reverse-geocoding requests, diacritic-insensitive text normalization, and structured logging.

The entry point, main.py, accepts four parameters – target city, country, check-in date, and check-out date – and writes the consolidated output to a CSV file on completion.

Two request mechanisms are used in tandem, each chosen for a specific stage of the collection. First, direct HTTP requests via the requests library handle the initial fetch of search-result pages: this is lightweight and fast, and the raw response contains enough embedded JSON to extract the pagination cursor needed to advance to the next page. Second, a headless Chrome browser managed through Selenium WebDriver is responsible for all rendering: both search-result pages (to capture the fully injected listing cards) and individual property pages (to capture the detailed attribute JSON embedded in <script> elements) are loaded through the browser before their source is captured. The rendered HTML is in both cases parsed into a traversable document tree by BeautifulSoup using Python's built-in html.parser.

The complete list of third-party dependencies is:

- Python 3.x
- Selenium WebDriver (requires a compatible Chrome or Chromium binary)
- BeautifulSoup4
- Pandas
- Requests
- Unidecode

3. Spatial coverage strategy: geographic grid and geocoding

Because Airbnb's search interface is designed for point-to-point travel queries rather than for exhaustive territorial surveys, obtaining complete coverage of a large municipality requires dividing the study area into manageable sub-regions and issuing a separate query for each. This work addresses that challenge by constructing a uniform geographic grid over the target city.

The grid generation procedure works as follows. The program first submits a forward-geocoding request to the Nominatim API (OpenStreetMap) to retrieve the administrative bounding box of the target municipality — specifically, the southernmost and northernmost latitudes and the westernmost and easternmost longitudes that define its extent. That bounding box is then tiled into rectangular cells of 0.02 degrees on each side, producing a lattice that covers the entire municipality without gaps. For every cell in the lattice, the geographic midpoint is submitted to Nominatim in a reverse-geocoding request to associate the cell with a street name and neighbourhood label. The resulting grid — each row containing the cell's four bounding coordinates, its centroid, the inferred neighbourhood, and the inferred street — is persisted to a local CSV file. Subsequent runs of the program read that file directly, skipping the geocoding step unless the operator explicitly triggers a refresh.

Each cell of the grid is used to parameterize an Airbnb search URL with four bounding-box query parameters: sw_lat, sw_lng, ne_lat, and ne_lng. By supplying these coordinates, the platform constrains its search results to properties whose map pin falls within the cell's boundaries, making it possible to systematically enumerate all listings across the municipality by iterating through the grid.

4. Collection procedure and pagination

For each grid cell, the program executes the following sequence. An initial HTTP request fetches the first page of search results for that cell. A regular expression scans the inline script tags in the response for the nextPageCursor token; if found, the token is appended to the URL and the request is repeated for the next page. This loop continues until no cursor is returned, indicating that all result pages for the cell have been retrieved. The HTML of every page is then loaded through the headless browser and saved as a plain-text file in a local directory hierarchy keyed by country, city, date range, and the rounded bounding coordinates of the cell, ensuring that the raw source is available for re-inspection without requiring a new browser session.

Once all result pages for a cell have been saved, the link-extraction step identifies listing cards by locating HTML elements carrying the itemprop="itemListElement" attribute, retrieves the canonical listing URL from the anchor tag within each card, and appends the travel-date parameters before recording the link for later processing.

Each listing URL is then opened in a dedicated headless browser session. The fully rendered page source is saved locally under a parallel directory structure and passed to the field-extraction module. That module searches the inline script-tag JSON for six target fields: the host's display name, the host's numeric identifier, the nightly rate in Brazilian reais, the accommodation category (entire place, or private / shared room), the property type (apartment, house, etc.), and the decimal latitude and longitude of the listing pin. For any listing whose page does not embed its own sub-area boundary, the neighborhood and street values from the parent grid cell are used as a fallback.

5. Resulting dataset and data cleaning

The collection run documented in this dissertation covered the municipality of São Paulo, Brazil, with a check-in date of 14 December 2025 and a check-out date of 18 December 2025. At the end of the collection procedure, 14,964 records were consolidated into a single CSV file containing 20 columns.

It is worth noting that the grid design queries each cell in a single pass. A listing therefore appears more than once in the dataset only when its geographic pin lies within the overlapping boundary area of two adjacent cells — not as a result of repeated survey rounds, which is the source of duplication in multi-pass collection strategies. This distinction matters for downstream deduplication: records with the same listing URL but different cell coordinates should be treated as spatial duplicates of a single property rather than as independent observations.

Two cleaning operations are applied to every record before it is written to the output file, both integrated into the extraction logic rather than deferred to a post-collection stage. First, the nested internal objects – a geographic descriptor and a coordinate set – are flattened into a single-level dictionary so that every attribute occupies its own named column. Second, all place-name strings (city, country, neighborhood) are passed through the Unidecode library, which strips diacritical marks and converts whitespace to hyphens, producing consistent representations such as sao-paulo regardless of the original encoding. This normalization also governs the folder names used when caching raw HTML locally, so file paths and dataset values always agree.

The schema of the final dataset is as follows:

```
{
  "host_name"            : "string",
  "host_id"              : "string",
  "accommodation_size"   : "string",
  "accommodation_type"   : "string",
  "checkin"              : "string",
  "checkout"             : "string",
  "price"                : "string",
  "url"                  : "string",
  "ativo"                : "boolean",
  "street"               : "string",
  "neighborhood"         : "string",
  "city"                 : "string",
  "country"              : "string",
  "sw_lat"               : "number",
  "sw_lng"               : "number",
  "ne_lat"               : "number",
  "ne_lng"               : "number",
  "latitude"             : "number",
  "longitude"            : "number",
```

```
  "grid"                 : "number"
}
```

Each row in the file corresponds to one listing observation. The ativo field records whether the listing was marked as active at the time of collection. The sw_lat, sw_lng, ne_lat, and ne_lng fields carry the bounding coordinates of the grid cell from which the record was obtained, while latitude and longitude hold the precise pin coordinates of the property itself as extracted from the listing page.