



# Inclusive Urban Societies

**Towards inclusive urban societies: Addressing labour and housing precarity based on advanced Geographical Information knowledge**

**[IncUrSoc]**

## **Deliverable 5**

### **Methodology report on inquiring touristification and labour precarity across scales**

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## Executive Summary

With nearly one quarter of Greece's population employed in tourism-related activities, the country's economic and social reality are deeply dependent on the sector's growth and its complementary industries. This dependency has fostered the transformation and branding of places as marketable products designed for consumption by targeted audiences competing with one another to attract international flows of visitors. Tourism inherently orders space by transforming it into a specific kind of landscape that defines how various actors move, interact, and perform within it. Touristification intensifies this process, creating environments in which housing, labour, and mobility are both enabled and/or constrained, while individuals are forced to continuously adjust their practices according to the governing rules of the landscape.

A core pillar of tourism is the provision of temporary accommodation, particularly through short-term rentals (STRs), in the context of platform-mediated touristification. STR market facilitates the commodification of residential housing, converting homes into assets that can generate profit from tourists and transient population, thus, excluding local population. Digital platforms such as Airbnb have been central to this shift, profoundly reshaping urban housing markets and neighbourhood dynamics. Since its launch in 2008, Airbnb has expanded exponentially, followed by numerous similar platforms. This type of for-profit housing sharing economy has been increasingly linked to overtourism and the escalating housing affordability crisis in many countries, including Greece.

This report extends the work of the two previous in the frame of the Project "Towards Inclusive Urban Societies"; namely the "Report on state-of-the-art conceptualizations and methodologies around housing and labour precarity associated with touristification", which laid the theoretical/conceptual framework for the Project's research, and the "Empirical report on the spatial links between touristification and precarious labour", which operationalized the above framework at the regional level. For its part, the report at hand delves into the intra-urban level, offering a detailed examination of how the post-2008 touristification of the Greek economy and the proliferation of STRs have transformed everyday conditions at both city and neighbourhood levels. It extends beyond the scope of previous analyses by providing a nuanced account of how urban investments and STR expansion affect land values, housing accessibility, labour conditions and urban life at large. In doing so, it lays the groundwork for future comparative research on touristification in Southern Europe and its intersection with pre-existing processes of gentrification. The report fills a critical gap in empirical, secondary, and theoretical research by analyzing the impact of touristification and STRs, in particular, across both the city and neighbourhood scales. It features two complementary studies focused on the touristification contexts of Greece's two largest cities, Athens and Thessaloniki.

The first section, investigates the common factors that determine the link between short-term and residential rental markets in the two cities, using robust data on Airbnb listings, conventional hotels and residential rents, in order to conduct a neighborhood-level analysis. Specifically, it first examines the two markets separately and then inquires possible spatial and statistical interlinkages between the key variables employing various spatial and/or statistical correlation metrics as well as regression models. This section discovers that the geography of the two markets differs profoundly between the Athens and

Thessaloniki. The analysis confirms that higher density of short-term rentals is associated with increased residential rents, and documents how this correlation varies between different neighborhoods, with listings pricing playing a key role.

The second section expands and intensifies the analysis by exploring four areas identified as touristified: *Koukaki* and *Kerameikos* in Athens, and *Kamara/Navarinou* and *Vardaris* in Thessaloniki. These neighbourhoods were selected as illustrative case studies based on the extent of short-term rental activity and the magnitude of recent social and spatial transformations. The investigation employs an eclectic conceptual framework combining insights from Geographical Political Economy, Tourism Studies, and Biopolitics. This framework is operationalized through a mixed-methods approach. First, a secondary analysis sets the broader context using census data at multiple scales (national, regional, municipal) on employment, social conditions, and the housing market, together with granular point data on the residential and short-term rental markets of the two cities. Then, drawing on questionnaire-based fieldwork, a primary analysis examines residents' housing and labour conditions, as well as perceptions of neighborhood change, in two central neighbourhoods in each city. The findings refine the literature's accounts of touristification, identifying cases that range from long-standing gentrification processes that eventually spurred touristification to instances of "abrupt touristification" in previously disinvested areas.

The combination of the two studies presented here, advances the discussion by highlighting touristification's entanglement not only with housing precarity and STR proliferation, but also with labour insecurity and job intensification, furthering tentative observations in the literature. Within this context, the conversion of housing into a hard-to-access financial asset occurs in symbiosis with the restructuring of inner-city labour markets, revealing a new urban condition shaped by interwoven forms of precarities.

**Keywords:** Airbnb, Big Data, Athens, Thessaloniki, touristification, rent gap, mixed-methods approach, housing precarity, labour precarity

## Introduction

In the first report of IncUrSoc, we analysed Greece's growth models and instances of capital switching at the national scale, while we outline a chronology of Athens's gentrification and touristification. The second report, expanded the focus by highlighting direct correlations between touristification, GDP shrinkage, deindustrialisation, and deteriorating employment conditions, revealing the European Union geography of touristification. Building upon the conceptualisations and methodology from these earlier works, the present report narrows its geographical focus to two major Greek metropolises - Athens and Thessaloniki - through two complementary studies. The first explores the spatial geographies of short- and long-term rental markets in both cities, while the second examines how housing and labour precarities intertwine within touristified urban landscapes across four case-study areas in the cities. An emerging literature in tourism geographies and housing studies has underscored the multifaceted spatial and social transformations generated by tourism-driven urban change. Tourism, as both an economic activity and a cultural phenomenon, produces uneven effects across scales and places. One of its most pronounced effects, particularly under conditions of overtourism, is its impact on housing through the rapid growth of digitally mediated short-term rentals (STRs).

Launched in August 2008, Airbnb marked the rise of online peer-to-peer accommodation platforms (Zervas et al., 2017). Since then, the expansion of the platform has been exponential: within just four years, more than 10 million people had used it (Airbnb, 2012). Similar platforms, such as Vrbo, soon followed (Wyman et al., 2022), contributing to the consolidation of the so-called "sharing economy" (Hal et al., 2022). Despite initially promoted as tools for enabling people to travel affordably or monetizing underused properties in a collaborative way, these platforms have increasingly been associated with housing affordability crises by tenants' unions, local authorities, and research institutions. Their effect is also highlighted in the action plan of the European Commission's European Urban Initiative (2024) as well as UN-WTO reports on overtourism (Koens et al., 2018). Amid a 50% increase in house prices and more than 25% rise in rents across Europe since 2010 (Eurostat, 2025a), the housing crisis has become a crucial point of numerous political struggles across Europe.<sup>1</sup> Conflicts such as that between Airbnb and the city council of Barcelona - where local authorities' attempts to ban new listings were ultimately endorsed by the Spanish Constitutional Court (Airbnb, 2024) - illustrate the growing tension between platform capitalism and local governance. Although a growing body of research recognizes the impact of short-term rental (STR) platforms on housing affordability, several studies hesitate to claim direct links to displacement (e.g., Such-Devesa et al., 2021). Against this backdrop, the present work examines, at first, the link between short-term and residential rental markets, focusing on Greece's two main cities, Athens and Thessaloniki.

Tourism and its spatial expression of touristification, exert significant influence on labour as well. The interrelation between labour and tourism has been well documented in research on the precarious conditions faced by hospitality and catering workers. Stein (2015) explored the feedback loop between

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<sup>1</sup> E.g., see Die Linke's "You Deserve More" campaign. Accessed at: [https://www.die-linke.de/fileadmin/user\\_upload/Kurzwahlprogramm\\_Linke-BTW25\\_englisch\\_A4.pdf](https://www.die-linke.de/fileadmin/user_upload/Kurzwahlprogramm_Linke-BTW25_englisch_A4.pdf)

precarity and gentrification where rent hikes and labor precarity reinforce each other, focusing on the US context. Gourzis et al. (2019a) conceptualized the strong interlinkages between labour precarity and gentrification, while Gourzis et al. (2022) provided evidence from two Athenian neighbourhoods, challenging the notion of STRs as job generators. In particular, in their work the direct link between STRs and work precarity is highlighted as they interviewed employees of the hospitality sector, and food and drink businesses who consider STR expansion, in fact, a threat to their working conditions. Similarly, Watkins (2024), argued that revitalization efforts in tourist destinations, such as to Louisville, Kentucky, do not aim or succeed to improve the lives of service workers and residents who are the ones to sustain the appealing “foodie” character of the place. Building on these insights, this report focuses on the intersection of housing and labour precarity within touristified urban environments, exploring the *indirect* mechanisms through which touristification exacerbates labour insecurity via the housing market. This approach reveals the cyclical relationship in which housing and work precarity mutually reinforce one another.

The report is structured in two main sections, each addressing a distinct dimension of touristification. The first section explores the link between short-term and residential rental markets through spatial analysis. Specifically, upon examining whether each of the two markets displays specific or random spatial patterns, it inquires about possible interlinkages between Airbnb listings’ density and nightly prices, hotels’ density, and average residential rents. The analysis employs spatial autocorrelation metrics (Moran’s I), spatial association measures (Lee’s L), correlation metrics (Pearson’s R), as well as spatial and non-spatial regression models. Neighborhood-level secondary data were obtained through existing databases and the authors’ web scraping that allow for high-resolution spatial investigation. The above methodological schema combines state-of-the-art spatial and non-spatial methods (e.g. Wrede, 2022) with cluster analysis used in other disciplines (see Shreves et al., 2022, for medical research). Nevertheless, as will be explained below, this methodological approach diverges from that described in the Project’s first report, which described the development of a composite index comprising variables on various aspects of precarity at the intra-urban level. This change stems from the unsuccessful application to HELSTAT for census data at the building block level. In any case, the approach employed here is more advantageous for deciphering statistical relationships between different phenomena, which was the goal from the start. Through this approach, we map the geographies of the short-term rental markets in Athens and Thessaloniki, contributing to the scarce existing research (e.g., Gourzis et al., 2022; Katsinas, 2021), while also examining their residential rental markets, which remain largely under-researched (only certain parts of Athens have been examined by Holm et al., 2023). Moreover, we confirm significant spatial links between the two markets, aligning with the international literature (e.g., Wachsmuth and Weisler, 2018), while contributing to the limited evidence from the Greek context (an exception is Gourzis et al., 2019, limited to Athens with less robust data). Importantly, we observe how these links take different characteristics across urban zones (e.g., in the inner city, suburbs, peri-urban areas), contextualizing niche empirical findings (Wrede, 2022). Additionally, we highlight the role of Airbnb listings’ pricing in shaping rent levels, which has mainly been addressed indirectly (Iliopoulou et al., 2024), while we revisit research suggesting hotels’ limited capacity to “follow” STRs’ proximity to major urban landmarks (Segú, 2018). Lastly, we highlight the local context when studying the effects of peer-to-peer accommodation platforms, with our neighborhood-level analysis rendered feasible through the use of Big Data; this way, we go

deeper than many otherwise comprehensive analyses (e.g., see that by Mikulić et al., 2021, which refers to the city/municipality level).

The second section builds on these findings by focusing on four touristified areas in Athens and Thessaloniki and examining how housing and labour precarity intersect within them. Touristification is approached as a *biopolitical landscape* where housing, labour, and the urban environment are interwoven and subjected to its ordering through. Three key research questions navigate this study: first, to confirm or reject the existence of touristification processes in Greece's two major metropolises through research in two central neighbourhoods of each; second, to identify the distinct touristification landscapes that have emerged and their relationship with extant gentrification processes; and third, to decipher the relationship between housing and labour precarity within the context of touristification. To address these questions, we develop an eclectic critical conceptual framework of contemporary touristification relevant to both the EU South and beyond. This framework enriches existing conceptualisations of touristification as a spatial fix (Yrigoy, 2014) by linking it to the concept of biopolitical ordering embodied in the establishment of touristification landscape (Ek and Hultman, 2008). Touristification as a spatial fix generates landscapes with precarious labour conditions (Gourzis et al., 2022) and at the same time constitutes a biopolitical mechanism through which this precarity is imposed, defining how and by whom mobilities and socioeconomic interactions are performed (Foucault, 2004). To operationalize this conceptualisation, a mixed-methods approach is employed, combining a secondary data analysis that sets the broader context with questionnaire-based fieldwork in four case studies to capture the perceived forms and effects of touristification.

Concerning the structure of the report: The first section begins with a theoretical account on the concepts that are used in the study such as touristification, big data, and short-term rentals' impact on residential housing markets. Upon laying out its methodology, we present its empirical analysis, starting with the geography of the short-term and residential rental markets separately in Athens and Thessaloniki, before drawing spatial and statistical associations between average residential rents, Airbnb listings' density and average nightly price, and hotels' density, through various measures and types of regression. The second section proceeds as follows. It first reviews the relevant literature on tourism, housing and labour geographies, proposing a conceptual framework in order to frame the research questions. It then outlines the methodological approach before presenting secondary and primary data from the questionnaires. Subsequently, we discuss the findings through the concept of spatial fix as a biopolitical landscape shedding light on the perceived urban change, mobility ordering and the mutually reinforcing precarities of housing and labour precarity within touristified spaces.

Together, the two sections provide a comprehensive account of how touristification and STR expansion, in particular, reshape housing market and labour conditions in Athens and Thessaloniki. The report concludes with a synthesis of findings, situating them within broader debates on tourism and labour geographies, and highlighting the contribution of the IncUrSoc project into understanding the socio-spatial implications of touristification in contemporary Greek cities.



Section 1: The geography of short- and long-term rental markets in two Greek metropolises: implications from a spatial analysis

## Theoretical framework on overtourism and short-term rentals

### *Overtourism and touristification*

Since postwar decades, tourism has evolved into one of the most dynamic sectors of the global economy, with growing social, cultural, and economic influence. The shift from Fordism to post-Fordism after the 1970s Oil Crisis, combined with widespread deindustrialization and economic recessions, led many countries to embrace tourism as a new tool of growth (Bianchi, 2015, 2017). Former industrial cities, alongside established tourist rural destinations, sought to reinvent themselves by promoting their symbolic assets, such as architectural, cultural, and industrial heritage (Zukin, 1996). Although deindustrialization unfolded unevenly across regions (Massey, 1987), it remained a central driver of tourism expansion, reinforced by advances in transportation, communication, and information technologies that rendered travel and communication more affordable and efficient (Lauer et al., 2013).

The combined effects of these transformations have produced what is now commonly referred to as *overtourism*: the situation in which tourism activity exceeds “physical, ecological, social, economic, psychological, and political thresholds” (Peeters et al., 2018). These thresholds obviously vary in relation to local context (ibid.), but overtourism is generally recognized when it negatively affects residents’ quality of life or visitors’ experiences (UNWTO, 2018). Overtourism trends became particularly visible after the late 2000s, when the overaccumulation crisis evolved into a crisis of urbanization (Gourzis and Gialis, 2019). Simultaneously, the advent of online peer-to-peer accommodation platforms, with Airbnb as their poster-child, reshaped tourism geographies and scales (Mosedale, 2014; Zervas et al., 2017). These digital platforms allowed private property owners to enter the tourism market directly, fostering an unprecedented expansion of tourist accommodation capacity and affordability, at least at first, in both tourist and residential urban and rural areas.

Therefore, it is not a surprise that this platform-mediated mode of tourism has affected cities disproportionately from the 2010s onwards. Digital mediated short-term rentals (STRs) rendered expensive urban tourism markets more affordable and accessible to a wider range of visitors (Garay-Tamajón et al., 2022). Before the STR platforms, accommodation needs were covered exclusively by the hotel industry in the urban contexts, whereas in rural destinations cheap semi-formal and non-formal accommodation businesses were operating alongside conventional hotels (Papatheodorou, 2004). In the urban context, STRs expanded rapidly because they required minimal investment (Wachsmuth and Weisler, 2018) and could be established even in areas where hotels were restricted by zoning regulations or lack of available space (Segú, 2018). In Greece, specifically, owners of up to two listings are taxed on the same base as long-term rentals’ landlords, while hotels are subject to stricter safety and accounting standards (Adamopoulou et al., 2025). As a result, the speed and scale of STRs expansion have been encapsulated in the concept of *touristification* as the broader and intense transformation of urban economies, landscapes, and social relations through tourism (Cocola-Gant and Lopez-Gay, 2022). Although the term originally referred to the general reorientation of economies toward tourism (Ojeda and Kieffer, 2020), its contemporary use often refers to the urban and social transformation produced by platform-mediated tourism activity.

### *Big data in tourism research*

Tourism research has closely followed the sector's exponential growth since the 1960s, focusing on environmental, cultural, and economic sustainability (e.g., Hunt, 1975; Pizam, 1978). Quantitative analyses first emerged as a way to assess these impacts more precisely. Initially, analyses relied mainly on simple metrics - such as bed capacity in relation to local population- but they soon expanded to include more complex indicators, including tourist arrivals, expenditure, and the direct and indirect contribution of tourism to GDP (Buitrago and Iniguez, 2021), juxtaposing them to population and area to account for different market sizes (Peeters et al., 2018). The field continues to develop quantitative tools and approaches while trying to address ongoing conceptual and methodological challenges. Beyond the persistent scarcity and inconsistency of data, tourism's multifaceted nature has also led to frequent definitional issues - that is, difficulties in clearly distinguishing what constitutes tourism activity or its impacts (Bianchi, 2015).

Against this backdrop, large-scale quantitative approaches such as big data have become increasingly common and valuable for conceiving tourism dynamics, particularly when combined with other secondary and primary data (Mashkov and Shoval, 2023). The analysis in the field focuses in three main factors: a. tourists, through reviews (e.g., of lodgings, restaurants, landmarks, etc.), social media posts, and geo-tagged photos; b. devices such as cell phones, which generate for instance, GPS data; c. interactions like web searches and online bookings (Li et al., 2022).

However, big data must be interpreted carefully and critically as it has been associated with empirical inaccuracy resonating with longstanding epistemological and ontological discussions (Weaver, 2021). Crucially, analyses must consider the local context in which tourism phenomena occur (Peeters et al., 2018). By situating a phenomenon, it can be investigated as part of a whole system whose interlinkages are as much as important.

### *The impact of short-term rentals on residential housing markets*

The impact of short-term rentals on residential rents has been a central focus in tourism research and especially in the overtourism context, supported by large datasets obtained through web scraping and similar methods. Research interest on this relationship emerged around mid-2010s, initially focusing on major global cities such as Los Angeles (Lee, 2016), New York (Wachsmuth et al., 2018), Boston (Horn and Merante, 2017), San Francisco, Miami (Lane and Woodworth, 2016), and London (Quattrone et al., 2016). As the STR market expanded to peripheral yet important urban destinations around the world, research were also conducted in cities like Barcelona (Sans and Quagliari, 2016), Lisbon (Cocola-Gant, 2016), and Athens (Gourzis et al., 2019). More recently, research focus expanded to less prominent destinations including Turin (Curto et al., 2022) and Dublin (Rabiei-Dastjerdi et al., 2022).

First, the positive effects of STRs as reported by the literature should be accounted. They nurture complex economies of scale around lodging units, benefiting cleaning, transportation, food and drink businesses, and other services catering tourists, such as luggage storage and automated laundromats (Gourzis et al., 2022). Another impact, regards the transformation of previously unsafe neighborhoods into vibrant urban

hotspots as a result of STRs clustering (Athens Development Corporation, 2025). Moreover, converting residential properties into STRs has provided small homeowners or even renters with a supplementary income, particularly during the early stages of STR market's growth before the entry of larger, professional players (Gourzis et al., 2022).

Nevertheless, the rapid proliferation of STRs in areas with weak or non-existent regulation impacted negatively has often produced negative impacts, reshaping the natural, cultural, and economic landscape of cities (Birenboim et al., 2023) fueling even residents' tourism-phobia (Christofoletti, 2025). Among the negative effects reported by the literature, local population and business are pressured to move or transform. Specifically, landlords may wish to evict tenants in order to convert their properties into tourist accommodation. This, reportedly occurring sometimes by offering financial incentives rather than resorting to coercion or exploiting expiring contracts (Cocola-Gant, 2016). Indirectly, but equally important, the expansion of the short-term rental market fuels displacement by contributing to rent hikes in two ways: houses are removed from the residential rental market in order to convert to STRs, which, coupled with rising demand due to urbanization trends, leads to further rent hikes (Lee, 2016; Merante and Horn, 2016; Wachsmuth et al., 2018). In extreme cases, entire buildings are converted into "ghost hotels" (Sideris, 2018), rendering whole areas in tourism-dependent cities as "visitor ghettos" (see Ioannides et al., 2019 for Utrecht). Importantly, the distinction between short- and long-term rentals has increasingly blurred due to the rise of platform-mediated medium-term rentals (MTRs) in Europe (Orozco Martinez and Gil-Alonso, 2024) and North America (Wachsmuth and Buglioni, 2024). MTRs cover the housing needs of highly mobile transnational population such as digital nomads, who are often more affluent potential tenants (Alexandri and Janoschka, 2020). This trend has, in some cases, transformed neighborhoods into "foreign-only enclaves" (Cocola-Gant and Lopez-Gay, 2022).

In the context of the above research, empirical studies have sought to quantify the effect of STRs on residential rents. For instance, Duso et al. (2020) estimated that each additional Airbnb listing in Berlin increases monthly rents by approximately €0.07 per m<sup>2</sup>. In Barcelona, neighborhoods with the highest Airbnb density have 7% higher rents and roughly 20% higher housing prices above the city average (García-López et al., 2019). In the US, Barron and colleagues (2020) estimated that a 1% increase in Airbnb listings can lead to a 0.018% increase in rents and a 0.026% increase in housing prices. Similarly, Franco et al. (2019) found that regulatory changes after 2014 caused housing prices to rise by nearly 35% and rents by over 10% in Portugal. In Croatia, Mikulić et al. (2021) demonstrated that tourism seasonality affects strongly housing affordability, with ten times greater impact than the concentration of tourism activity, a phenomenon closely linked to STRs which are characterized by this component.

Nonetheless, neighborhood-level effects are difficult to estimate precisely, as STRs' impacts vary widely in relation to location, type, and quality of converted properties (Wrede, 2022). Also, STRs' effects cannot be confined in their immediate clustering areas but transcend in urban space (Lee and Kim, 2023). Furthermore, the "rent gap" - the potential for profit maximization because of the difference between current and potential rent - benefits landlords who do not intend to convert properties but instead, increase rents (Horn and Merante, 2017). The concept of rent gaps has been used to decipher gentrification process (Smith, 2010) that is also adopted for analyzing touristification (Cocola-Gant and Lopez-Gay, 2022; Gourzis et al., 2022).

Building on this previous research, the present study examines the spatial distribution of Airbnb listings in relation to average residential rents in the two major Greek cities, without attempting to attribute causality between the two variables.

## Sample, data, and methods

The study at hand scrutinizes the geography of Airbnb listings vis-a-vis that of residential rents, while considering the position of conventional hotels, with the analysis being conducted at the neighborhood level.<sup>2</sup> Specifically, data used refer to (i) the density and (ii) average nightly price of Airbnb listings, (iii) the average monthly rent of residential apartments, and (iv) the density of conventional hotels.

Our study areas refer to the Athens Urban Area and Metropolitan Thessaloniki, with the final sample of neighborhoods comprising our study areas being cleaned from those with no data on residential rental prices.<sup>3</sup> However, due to data sparsity and to ensure the statistical significance of our results, parts of the analysis are narrowed down to two focus areas: the Municipality of Athens and the Thessaloniki Urban Area.<sup>4</sup> Table 1.1 shows some basic statistics for each study and focus area.

Airbnb data were obtained from Inside Airbnb,<sup>5</sup> for the listings located within the municipality of Athens and Thessaloniki Urban Area,<sup>6</sup> while for the rest of Athens Urban Area and Metropolitan Thessaloniki data were obtained through the authors' web scraping in [Airbnb.com](https://www.airbnb.com). All data refer to December 2024, and only the active listings were kept.<sup>7</sup> Data on conventional hotels was obtained through web scraping in [Booking.com](https://www.booking.com) in March 2025, filtering out all other property types but hotels. Data on residential rents was acquired from Spitogatos,<sup>8</sup> the largest Greek real estate platform, referring to the 12-month period between July 2023 and 2024.

The empirical analysis is divided into three steps. First, to look into the geography of short-term and residential rental markets, we detect and visualize statistically significant spatial clusters of Airbnb listings and average residential rents through Local Anselin Moran's I (as embellished by Xu et al., 2025). In addition, Global Moran's I<sup>9</sup> and Geary C<sup>10</sup> as well as their p-values<sup>11</sup> are used to determine whether the

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<sup>2</sup> As delineated by the Spigotatos platform (see Maps 1.1-1.4). Data coming from other sources (e.g., [insideairbnb.com](https://www.insideairbnb.com)), were processed so it refers to these neighborhoods.

<sup>3</sup> Namely, of the 643 neighborhoods in Athens 497 were kept, while of the 101 neighborhoods in Thessaloniki, 79 were kept.

<sup>4</sup> As delineated in their respective Regulatory Frameworks: L.4277/2014 for Athens and L.1561/1985 for Thessaloniki.

<sup>5</sup> A platform publishing web scraping of Airbnb data. Accessed at: [insideairbnb.com](https://www.insideairbnb.com).

<sup>6</sup> Specifically, Ampelikipoi-Menemeni, Kordelio-Evosmos, Neapoli-Sykies, Pavlos Melas, Thessaloniki, Kalamaria, Thermaikos, and Pylaia-Chortiatis.

<sup>7</sup> Namely, those having at least one rating during the past 12 months, i.e., December 2023.

<sup>8</sup> Accessed at: [www.spitogatos.gr](https://www.spitogatos.gr)

<sup>9</sup> Taking values from 0 to 1; the higher the value the higher the autocorrelation.

<sup>10</sup> Taking positive values; the lower the value the higher the autocorrelation.

<sup>11</sup> A value smaller than 0.05 indicates significant statistical confidence

overall spatial autocorrelation of the aforementioned variables is statistically strong and significant (Wu et al., 2020).

Second, to look into the co-locations of strong positive or negative spatial associations between the key variables (e.g. high Airbnb activity corresponding with high residential rents), we apply Lee’s L bivariate spatial association index (Shreves et al., 2022). Specifically, three variable pairs are examined: average residential rents on the one hand, and on the other, Airbnb listings’ density and average nightly prices, as well as hotels’ density. To assess significance levels we use p-value thresholds of 0.01 (highly significant), 0.05 (moderately significant), and 0.1 (marginally significant). Spatial relationships are defined through the K-nearest neighbors method.

**Table 1.1 Descriptive statistics for the key variables per geographical context**

Geographical context	Metric	Average rent prices	Density Airbnb	Average Airbnb prices	Density Hotels
<b>Study area 1: Athens Urban Area</b>	mean	9.8	61.5	80.9	24.5
	std	2.1	167.8	41.4	68.1
	min	5.6	0.2	19	0.4
	max	18.6	1600.4	319.6	506.6
<b>Focus area 1: Municipality of Athens</b>	mean	10.6	189.4	74.3	41.1
	std	2.3	298	27.9	87.8
	min	7.5	2.2	32.7	0.9
	max	17.9	1600.4	157.5	506.6
<b>Study area 2: Metropolitan Thessaloniki</b>	mean	6.7	35.8	79.9	2.2
	std	1.4	80.1	30	8.2
	min	4.2	0	38.5	0
	max	10.5	400.4	164.3	49.7
<b>Focus area 2: Thessaloniki Urban Area</b>	mean	7.3	53.6	73.4	3.4
	std	1.2	94.2	26.9	10
	min	5.1	0	38.5	0
	max	10.5	400.4	162.3	49.7

Third, we conduct a series of regression analyses, using the average rent price as the dependent variable, while the remaining variables serve as independent predictors. Two types of regressions are employed:

linear (non-spatial) and spatial.<sup>12</sup> Linear regression estimates rent prices in each neighborhood based solely on the values of the independent variables. In contrast, the spatial regression incorporates spatial dependencies by also accounting for rent prices in neighboring neighborhoods, thus capturing the influence of spatial autocorrelation on rent price levels.

It must be noted here that the above methodology diverges from that described in the Project's first report, "Report on state-of-the-art conceptualizations and methodologies around housing and labour precarity associated with touristification". There, it was stated that touristification and its effects at the urban level will be studied through a composite index comprising variables on both housing and labour precarity. Nevertheless, given the unsuccessful application to HELSTAT for census data at the building block level, and their replacement with respective data at the municipal level, the employment of the aforementioned methodology was not possible. To complement this drawback, the Research Team opted for using spatial regression; as a methodology, this is statistically more advantageous than the one initially planned, particularly for deciphering the correlation between various aspects of precarity within the context of touristification.

## Empirical analysis

### *The geography of short-term and residential rental markets*

In terms of Athens's rental market, Local Moran's I, as shown in Map 1.1, identifies clusters of high prices in the historic center, but also in several areas to the north (e.g., Filothei, Psychiko, Kifisia) and south (e.g., Glyfada, Vouliagmeni). Individual high-low outliers in Athens's western suburbs (e.g., Agios Eleftherios, Panorama) indicate expensive areas in affordable surroundings, while low-high outliers in Athens's northern (e.g., next to Kifisiia) and southern suburbs (e.g., next to Vouliagmeni) indicate affordable areas in expensive surroundings. Low-low clusters cover most of Athens's western periphery indicating the lower socio-economic status of the population there. Overall, both Global Moran's I and Geary C reveal a strong and statistically significant spatial autocorrelation for average rental prices across the whole Athens Urban Area; in fact, this spatial autocorrelation becomes stronger when calculated for the Municipality of Athens, since, there, neighborhoods with high or low rents tend to be surrounded by areas with similar values. In contrast, in the Urban Area there are many instances where low- and high-priced rental markets are adjacent, making spatial autocorrelation statistically insignificant (see Table 1.2).

In terms of Athens's Airbnb listings, Local Moran's I reveals strong clusters within the historic center of Athens, comprising neighborhoods around the Acropolis Hill (e.g., Kerameikos, Metaxourgeio, Ano Petralona) and in the Municipality of Athens in general. Outliers (high-low) can be found only in specific areas in the outskirts of the central municipality (e.g., Kato Petralona). Lack of either high-high or low-high clusters in the rest of Athens Urban Area indicates that, for the areas outside the central municipality, Airbnb activity displays a more randomized allocation. Low-low clusters can only be found in the eastern and northern of the Urban Area, in areas with population mostly of high social strata (e.g., Pallini, Kifisia),

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<sup>12</sup> ML Estimation of Spatial Lag Model.

although such clusters can also be found in some parts of the western suburbs, which are definitely as high-end population-wise (e.g., Petroupoli, Ilion). Overall, both Global Moran's I and Geary C show a strong and statistically significant spatial autocorrelation for Airbnb listings' density, as it did for rents. However, when calculated for the Urban Area of Athens, the value of Global Moran's I is much higher (0.67) than when calculated for the central (namesake) municipality, indicating that the spatial allocation is much more defined in the broader area than in the inner city.

Now, in terms of Thessaloniki's rental markets, Local Moran's I, as shown in Map 1.2, identifies clusters of high prices along the city center (i.e., around Aristotelous Sq. and Lefkos Pyrgos), as well as further eastwards (e.g., Kalamaria), individual high-low outliers (i.e., areas where prices are higher than neighbouring ones) are found north of Thermaikos (i.e., in Peraia), and low-low clusters can be found in the city's periphery (e.g., Oreokastro). The above are reflected in the values of both Global Moran's I and Geary C, which confirm a strong autocorrelation. However, for the case of Thessaloniki, the Urban Area has a less defined spatial allocation of rent prices in comparison to the broader Metropolitan Area (whereas in Athens it was vice versa).

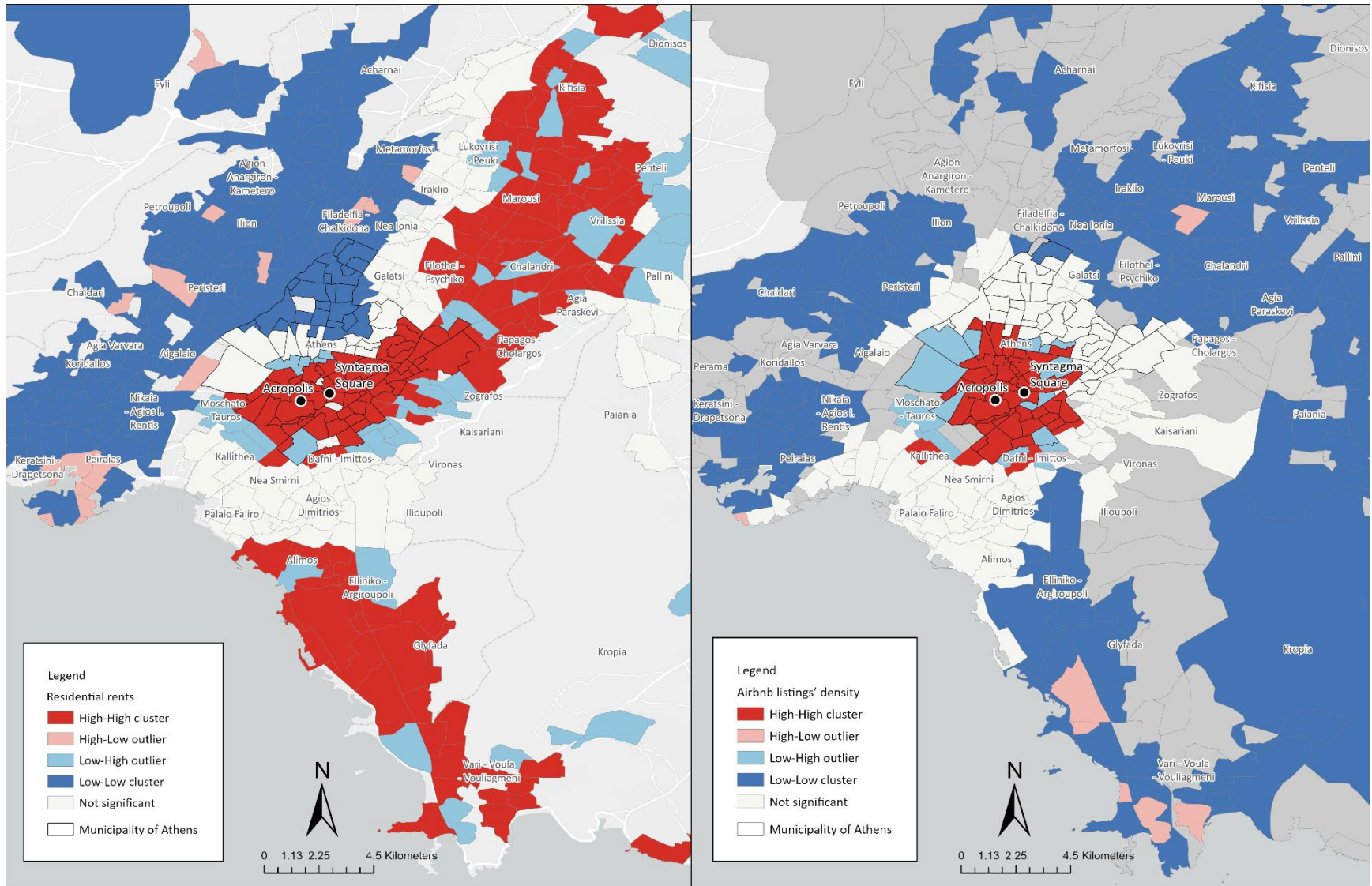
In terms of Thessaloniki's Airbnb activity, Local Moran's I, as shown in Map 1.2, limits the clusters of listings in the historic and commercial core (e.g., along the city's central waterfront around Aristotelous Sq. and Lefkos Pyrgos, and slightly northward). Around this area the index identifies a few low-high clusters. Low-low clusters are observed in the western (i.e. around the Delta area) and southeastern suburbs (e.g., Thermi, Thermaikos), where Airbnb's presence is minimal. In general, Airbnb activity is much more limited geographically wise in Thessaloniki as compared to Athens; this is reflected in the pertinent values of Global Moran's I and Geary C, which are generally higher in Thessaloniki. Having said the above, it must be noted though that the differences between the two cities are relatively small and may be affected by the different geography of the two areas.

**Table 1.2. Spatial autocorrelation measures for key variables per geographical context**

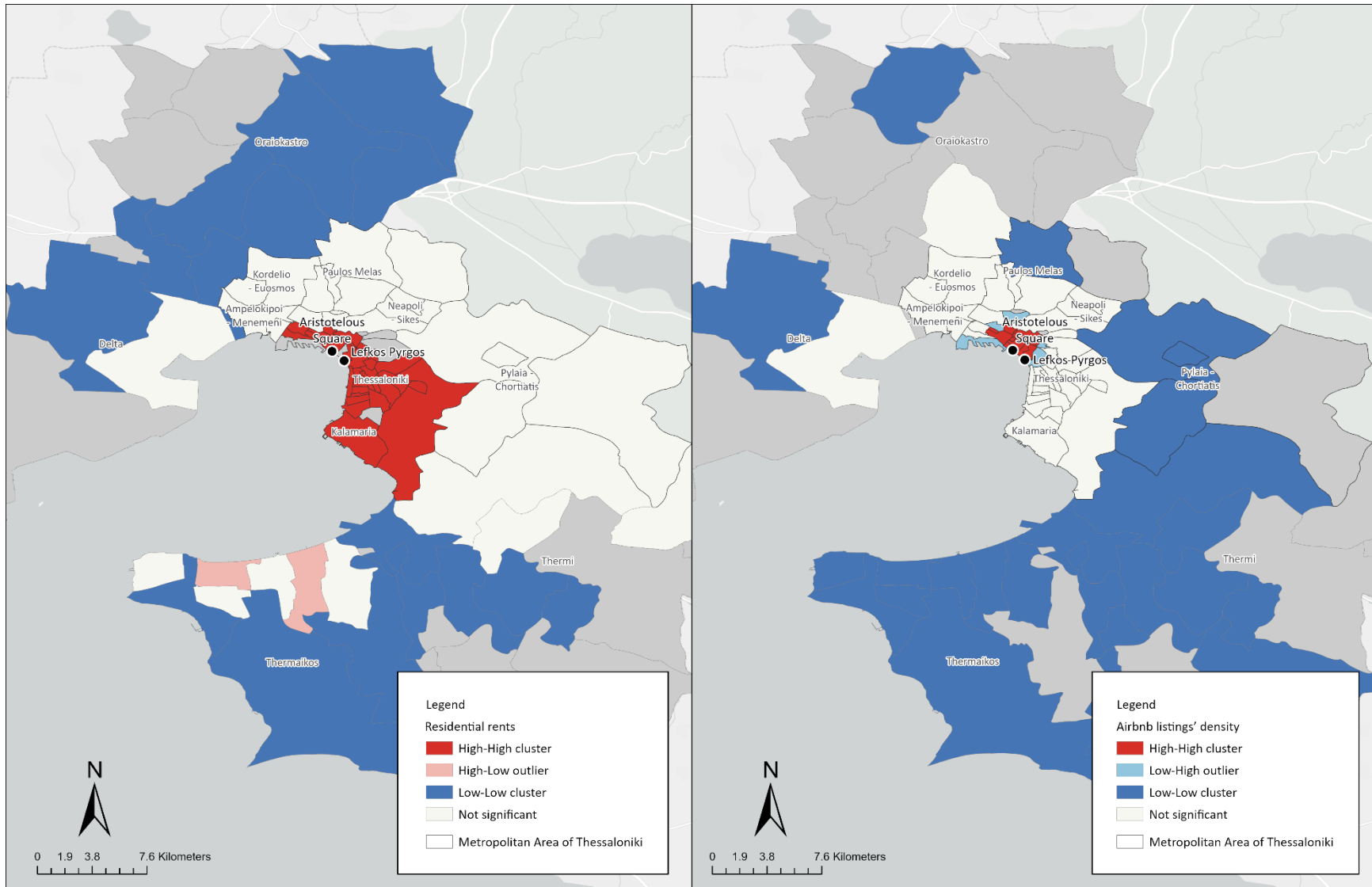
<b>Geographical context</b>	<b>Variable</b>	<b>Global Moran's I</b>	<b>p-value (Moran's I)</b>	<b>Geary C</b>	<b>p-value (Geary C)</b>
<b>Study area 1: Athens Urban Area</b>	Average rent prices	0.63	0.001	0.35	0.001
	Density Airbnb	0.67	0.001	0.4	0.001
<b>Focus area 1: Municipality of Athens</b>	Average rent prices	0.72	0.001	0.26	0.001
	Density Airbnb	0.56	0.001	0.49	0.001
<b>Study area 2: Metropolitan Thessaloniki</b>	Average rent prices	0.71	0.001	0.24	0.001
	Density Airbnb	0.71	0.001	0.31	0.001

<b>Focus area 2: Thessaloniki Urban Area</b>	Average rent prices	0.63	0.001	0.28	0.001
	Density Airbnb	0.67	0.001	0.35	0.001

Map 1.1. Local Moran's I for residential rents (left) and Airbnb listings' density (right). Athens.



Map 1.2. Local Moran's I for residential rents (left) and Airbnb listings' density (right), Thessaloniki.



### *Spatial associations between short-term rentals, residential rents, and hotels*

The correlations matrix in Table 1.3 indicates that in the Athens Urban Area, average rental prices are not particularly associated statistically with Airbnb listings' and hotels' density, although there is a mild correlation with Airbnb prices. Moreover, Airbnb prices do not appear to be affected by competition with hotels (as the Pearson's R is 0.11). In contrast, the density of Airbnb listings correlates strongly with that of conventional hotels (0.83). However, when narrowing down to the Municipality of Athens, the correlation of residential rents and Airbnb listings' prices becomes much stronger (0.63), as does with the density of the latter (0.56) and hotels (0.50). Importantly, beyond Pearson's R non-spatial associations, the bi-variate Moran's I (in parentheses) confirms that the relationships between variables are not just statistical but also spatially structured, as strong correlations tend to occur in geographically clustered patterns. For example, the pertinent value between average rents and average Airbnb prices (0.57) indicates that the two high rents and nightly Airbnb prices tend to co-locate in clusters that exceed the mere neighborhood scale. Overall, the combined interpretation of Pearson correlations and bi-variate Moran's I values highlights the dual nature of the relationships: statistically significant and spatially patterned.

Indeed, Lee's L (Map 1.3) shows that in the Athens Urban Area, there are several clusters of high Airbnb density and high residential rents, concentrated in the historic center and a broad zone south of it. Clusters of high Airbnb presence and low residential rents are observed in central neighborhoods north of the historic center, the population of which is of mostly low socio-economic status (e.g. Stathmos Larisis and Agios Panteleimon). On the other hand, clusters of low Airbnb activity and high residential rents are found mainly in the northern high-status (e.g. Kifisia, Marousi, Chalandri) and southern suburbs (e.g., Alimos, Glyfada, Vouliagmeni). Clusters of both low Airbnb activity and residential rents are located across the low status western suburbs of Athens (e.g. Ilion, Peristeri) and Piraeus (e.g., Nikaia, Keratsini). The low statistical significance of this spatial association for much of Athens Urban Area implies pockets of Airbnb activity in low status residential areas and vice versa, although the main reason for this is the lack of spatial autocorrelation of each variable separately (shown above). Interestingly, when looking into clusters of high nightly Airbnb prices and high rental prices, we see that these are not only located in tourist traffic-heavy central and southern Athens, but also in northern suburbs, which are mainly residential areas. Importantly, there are hardly any clusters of high Airbnb prices and low rents, located close to Athens's airport (e.g., Paiania, Pallini), while there are many more clusters of low Airbnb prices and high rents, located in areas that are central, but somewhat away from tourist attractions (e.g., Pagkrati, Zografos, Ellinoroson). Low-low clusters appear again in the city's low status western suburbs. Lastly, when associating Airbnb listings' and hotels' density, only Athens's inner city exhibits high-high clusters. This mainly reflects the almost total lack of clusters regarding both types of accommodation; nevertheless, in areas like the Athenian Riviera (i.e., the city's southern coastal suburbs), Airbnb density is often high, but only in specific pockets.

In Metropolitan Thessaloniki, the correlation between rents and Airbnb activity is much stronger (0.63) compared to the Athens Urban Area, while that between Airbnb listings' and hotels' density is similarly

strong (0.80). The rest of combinations do not exhibit any statistically significant associations.<sup>13</sup> Of those, the lack of statistical/spatial association between Airbnb nightly prices and rents comes in contrast to our previous observations (for Athens), although the value of Pearson's R becomes stronger when narrowing down to the Thessaloniki Urban Area. Similarly, most other statistical associations become stronger when narrowing down, following the patterns observed in the Municipality of Athens, except for that between rents and Airbnb nightly prices, which remains insignificant.

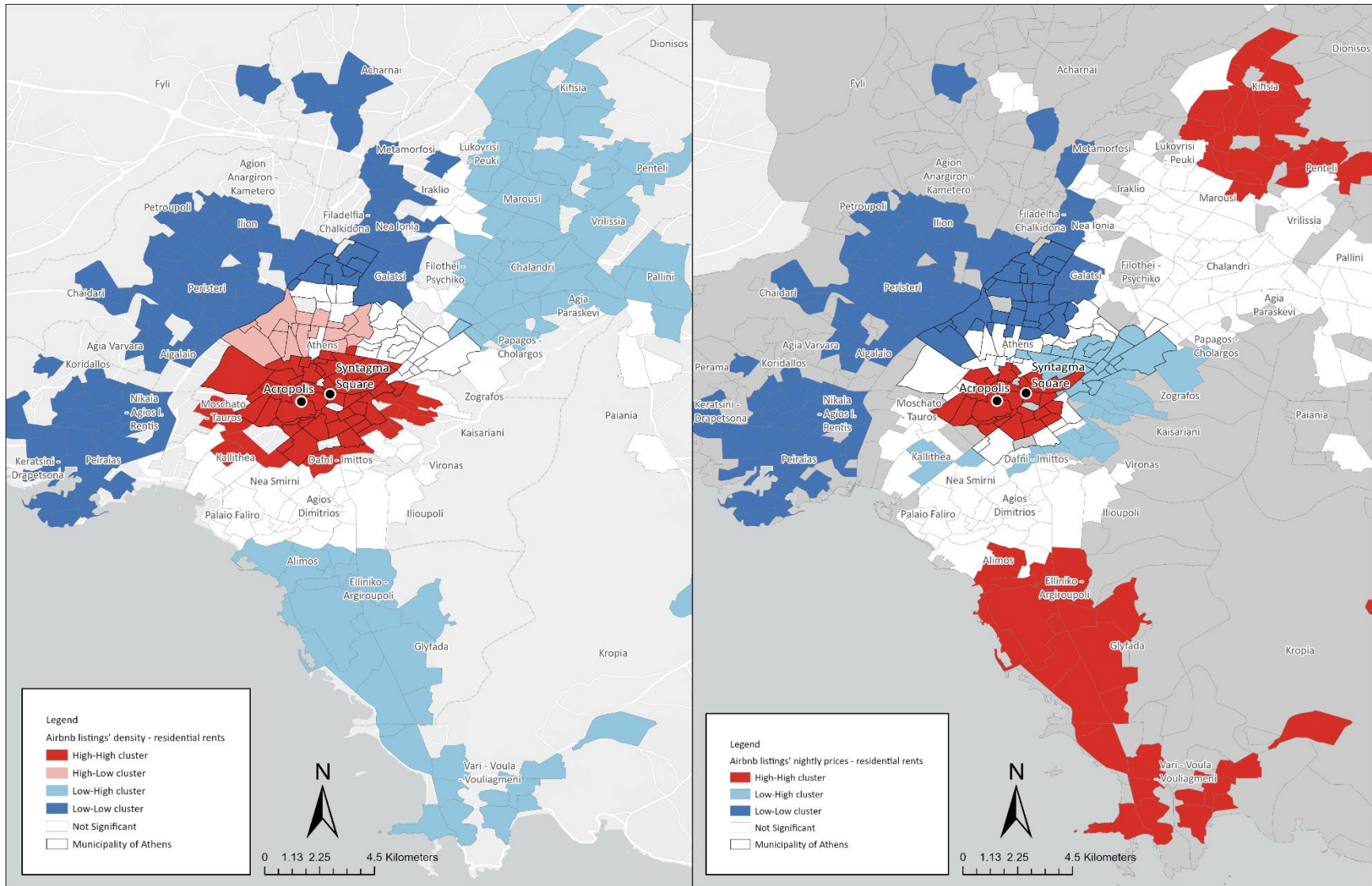
**Table 1.3. Correlations between key variables per geographical context<sup>14</sup>**

<b>Geographical context</b>		<b>Density Airbnb</b>	<b>Average Airbnb prices</b>	<b>Density Hotels</b>
<b>Study area 1: Athens Urban Area</b>	<b>Average rent prices</b>	0.36 (0.28)	0.48 (0.38)	0.35 (0.24)
	<b>Density Airbnb</b>		0.10 (0.29)	0.83 (0.50)
	<b>Average Airbnb prices</b>			0.11 (0.12)
<b>Focus area 1: Municipality of Athens</b>		<b>Density Airbnb</b>	<b>Average Airbnb prices</b>	<b>Density Hotels</b>
	<b>Average rent prices</b>	0.56 (0.40)	0.63 (0.57)	0.50 (0.36)
	<b>Density Airbnb</b>		0.48 (0.45)	0.83 (0.44)
	<b>Average Airbnb prices</b>			0.33 (0.36)
<b>Study area 2: Metropolitan Thessaloniki</b>		<b>Density Airbnb</b>	<b>Average Airbnb prices</b>	<b>Density Hotels</b>
	<b>Average rent prices</b>	0.63 (0.49)	0.02 ( --- )	0.46 (0.36)
	<b>Density Airbnb</b>		0.13 ( --- )	0.80 (0.56)
	<b>Average Airbnb prices</b>			0.46 ( --- )
<b>Focus area 2: Thessaloniki Urban Area</b>		<b>Density Airbnb</b>	<b>Average Airbnb prices</b>	<b>Density Hotels</b>
	<b>Average rent prices</b>	0.65 (0.44)	0.43 (0.25)	0.5 (0.33)
	<b>Density Airbnb</b>		0.32 ( --- )	0.79 (0.53)
	<b>Average Airbnb prices</b>			0.27 (0.15)

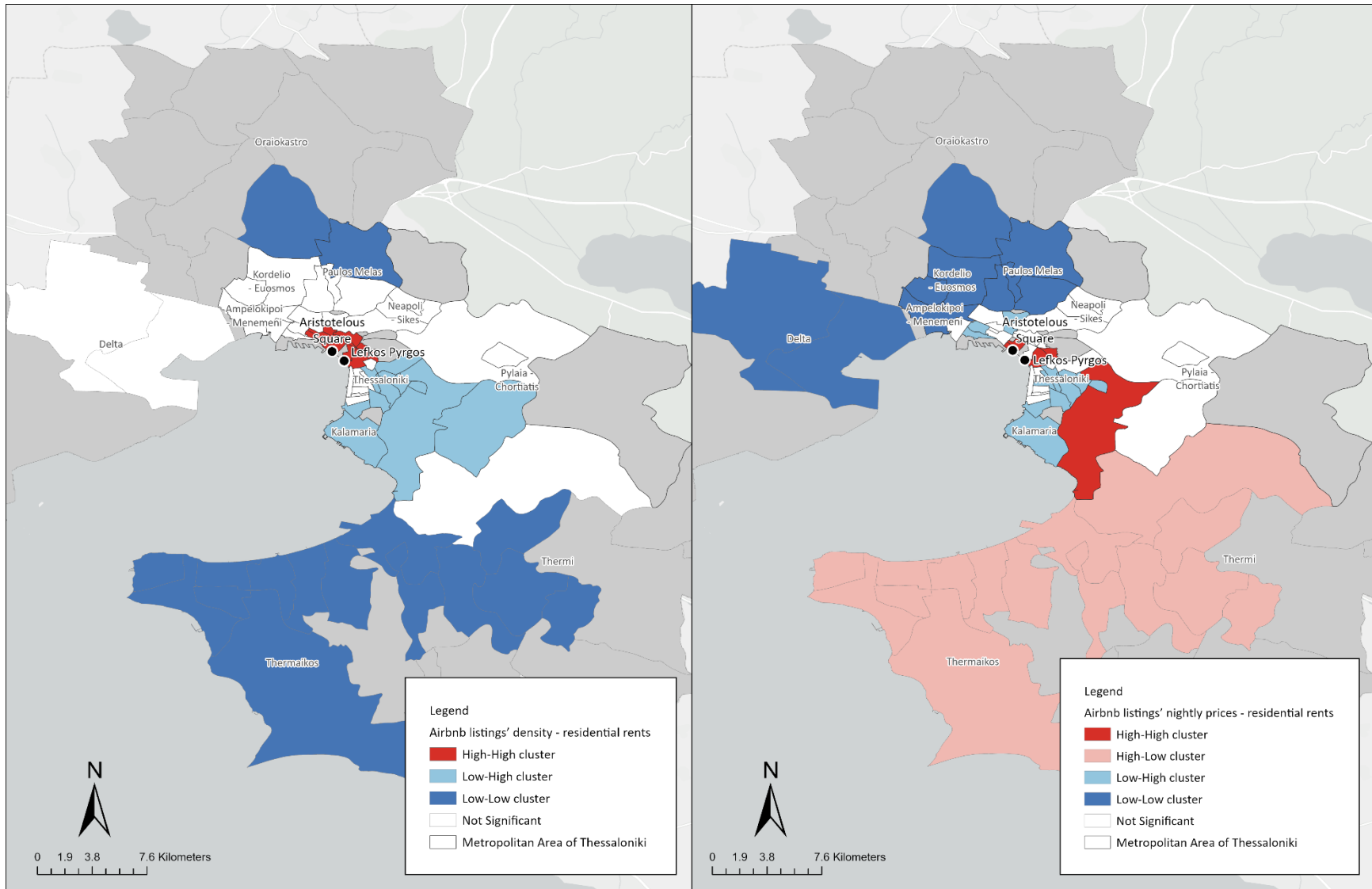
<sup>13</sup> Moran's I values with a p-value higher than 0.05 are not reported.

<sup>14</sup> Values: outside parentheses for Pearson's R, in parentheses for Global Moran's I.

Map 1.3. Lee's L for Airbnb listings' density - residential rents (left) and Airbnb listings' nightly prices - residential rents (right), Athens.



Map 1.4. Lee's L for Airbnb listings' density - residential rents (left) and Airbnb listings' nightly prices - residential rents (right), Thessaloniki.



Indeed, Lee's L (Map 1.4) shows that, only in the city center (between Aristotelous Sq. and Lefkos Pyrgos) and in the high-status parts of Pylaia, intense Airbnb activity is combined with high rents. Similarly, in the western and northern periphery, a low density of Airbnb listings coexists with low residential rents. Apart from that, there is a high occurrence of outliers. Specifically, in the vicinity of the railway station and the central neighborhoods east of Lefkos Pyrgos (e.g., Kalamaria) rents are (relatively) high despite low Airbnb activity, whereas in most of the eastern periphery (e.g., Themi, Thermaikos), the opposite is observed. Similarly, high nightly Airbnb charges and high rental prices co-locate only in the city center, whereas the central neighborhoods to the east combine low nightly charges with high rents. Lastly, clusters of high Airbnb listings' and hotels' density cover the entire historic and commercial center extending northwest toward Sykies, with Triandria (east of Lefkos Pyrgos) being the only high Airbnb activity - low hotel density. Notably, no low-low clusters are observed.

### *The effect of Airbnb listings and hotels on residential rents*

Table 1.4 presents the results for the performance of regression (right columns) under different scenarios. In each scenario we take into account different sets of dependent variables. For performance metrics we use the Root Mean Square Error (RMSE), where lower values indicate better performance (optimal is 0), and R-squared ( $R^2$ ) that indicates the fit of the regression and where higher values indicate better performance (optimal is 1). A sensitivity analysis is conducted for the spatial regression by testing a range of scenarios (#1 to #6), each incorporating different combinations of independent variables, with Scenario #4 accounting for all key variables. As expected, this scenario yields the best performance in all geographical contexts. In contrast, Scenario #1 uses the least information, relying solely on the rent prices of adjacent areas while omitting all other variables. Although its performance is understandably lower, it is noteworthy that it still outperforms the simple (non-spatial) regression, highlighting the value of incorporating spatial context alone. For each geographical context, the last line corresponds to the scenario of a simple regression. Compared to Scenario #4 of spatial regression, the performance of linear regression is clearly inferior, highlighting the importance of accounting for spatial dependencies. Specifically, incorporating rent prices from adjacent areas, as done in the spatial model, provides valuable information that significantly improves the accuracy of rent price predictions at the neighborhood level.

**Table 1.4. Performance of regression under different scenarios of considering different sets of dependent variables for each geographical context**

Geographical context	Type of regression / number of scenario		Dependent variables taken into account			Accuracy metrics	
			Density Airbnb	Average Airbnb prices	Density Hotels	RMSE	R <sup>2</sup>
Study area 1: Athens Urban Area	Spatial Regression scenarios	#1				1.43	0.53
		#2	✓			1.41	0.55
		#3	✓	✓		1.38	0.56
		#4	✓	✓	✓	1.38	0.56
		#5		✓		1.4	0.55
		#6			✓	1.41	0.54
	Simple Regression	✓	✓	✓	1.81	0.25	
Focus area 1: Municipality of Athens	Spatial Regression scenarios	#1				1.23	0.7
		#2	✓			1.14	0.74
		#3	✓	✓		1.14	0.74
		#4	✓	✓	✓	1.13	0.75
		#5		✓		1.21	0.73
		#6			✓	1.14	0.74
	Simple Regression	✓	✓	✓	1.6	0.49	
Study area 1: Thessaloniki Metropolitan Area	Spatial Regression scenarios	#1				0.79	0.69
		#2	✓			0.73	0.73
		#3	✓	✓		0.68	0.76
		#4	✓	✓	✓	0.68	0.77
		#5		✓		0.73	0.73
		#6			✓	0.74	0.72
	Simple Regression	✓	✓	✓	1.03	0.47	
Focus area 2: Thessaloniki Urban Area	Spatial Regression scenarios	#1				0.71	0.65
		#2	✓			0.64	0.71
		#3	✓	✓		0.59	0.76
		#4	✓	✓	✓	0.58	0.76
		#5		✓		0.63	0.72
		#6			✓	0.65	0.71
	Simple Regression	✓	✓	✓	0.82	0.53	

When looking at the Municipality of Athens, in particular, Scenario #4 achieves a relatively good performance, with an RMSE of 1.13 (which corresponds to an average error of approximately 10% given that the mean average rent price is 10.6, see Table 1.1), and an R<sup>2</sup> of 0.75. As such, spatial regression explains a substantial portion of the variation in rent prices, expressed by the following formula:

$$p_{rent} = 0.001 * d_{Airbnb} + 0.012 * p_{Airbnb} + 0.005 * d_{hotel} + 0.661 * W + 2.4$$

where  $d$  and  $p$  denote the density and average price variables, and  $W$  is the spatial lag of rent prices (i.e., average rent in neighboring areas). The model fit is further depicted in Figure 1.1 (left).

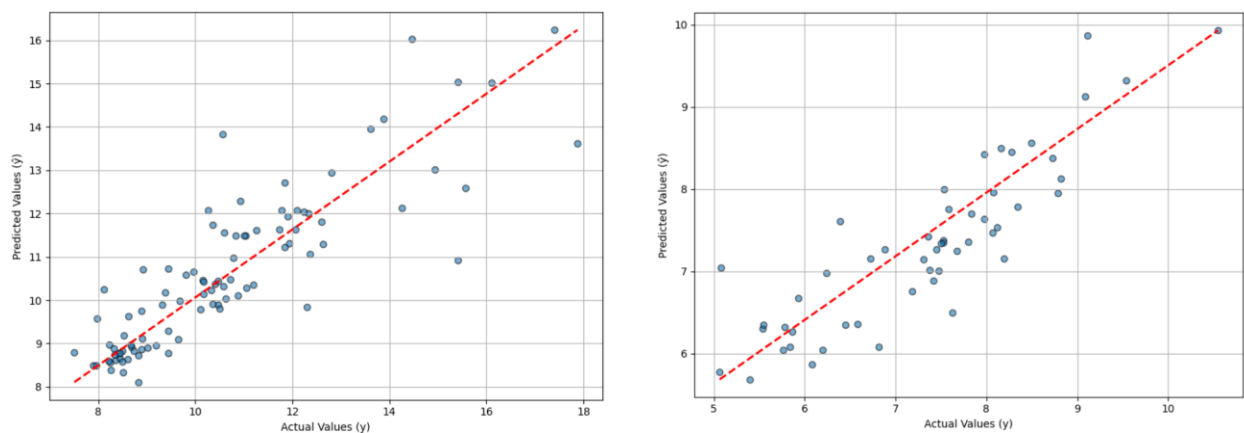
However, Scenario #2, which adds Airbnb density to the spatial lag, achieves a performance level very close to that of the full model (#4), suggesting that Airbnb density alone contributes significantly to explaining rent price variations. Specifically, the regression of Scenario #2 is expressed by the following formula:

$$p_{rent} = 0.002 * d_{Airbnb} + 0.731 * W + 2.4$$

According to the above, when  $\Delta d_{Airbnb}=100$  (i.e., the Airbnb listings in a neighborhood increase by 100 listings per km<sup>2</sup>), the expected change in rent price would be  $\Delta p_{rent}=0.2$  (with the average rent price being €10.6/m<sup>2</sup>, 0.2 represents a roughly 2% increase in rent). Moreover, spatial spillover effects captured by the 0.731 coefficient compound this trend.

For their part, Scenarios #3 and #4 (adding Airbnb prices and hotel density respectively) offer only limited added value. Comparing Scenarios where only one independent variable is included (#2, #5, and #6) we see that Airbnb density (#2) and hotel density (#6) contribute similarly and lead to a performance close to the best case (Scenario #4). In contrast, average Airbnb prices (Scenario #5) provide considerably less predictive power, suggesting that this variable is less informative in the spatial regression context.

**Figure 2.1. Scatterplot of the actual (x-axis) vs predicted (y-axis) values of the average rent prices for the case of the Municipality of Athens (left) and the Thessaloniki Urban Area (right)**



Broadening our scope to consider the Athens Urban Area, both spatial and linear regression can only achieve moderate accuracy. Beyond that, in this context all variables—including Airbnb prices—have similar predictive power.

Similarly, when looking at our focus area in Thessaloniki (the Urban Area), Scenario #4 of the spatial regression (including all dependent variables) achieves relatively good performance, with an RMSE of 0.58

(corresponding to an 8% error given that mean rent is €7.32/m<sup>2</sup>, see Table 1.1) and an R<sup>2</sup> of 0.76. While most findings are in line with those for the Municipality of Athens, a notable difference is that Scenario #3 (adding average Airbnb prices) improves regression accuracy considerably in comparison to Scenario #2 (Airbnb listings' density). The regression of Scenario #4 for the Thessaloniki Urban Area is expressed as:

$$p_{\text{rent}} = 0.003 * d_{\text{Airbnb}} + 0.009 * p_{\text{Airbnb}} + 0.009 * d_{\text{hotel}} + 0.671 * W + 1.48$$

Compared to the respective formula for the Municipality of Athens, the spatial component (W) has a similar effect, but that of the density of Airbnb listings is 3 times larger.<sup>15</sup> A depiction of the above is shown in Figure 1.1 (right).

Broadening our scope to consider the whole Thessaloniki Metropolitan Area, RMSE is higher by around 15% (i.e., slightly larger errors in the predicted values for rents) but R<sup>2</sup> is slightly improved. More specifically, spatial regression for this context shows that qualitatively, the effects of the key variables and the spatial characteristics to the average rent prices remain similar to those of the Urban Area.

## **Discussing the spatial relationship of short-term and residential rental markets in the Greek urban context**

With the above analysis, we examined the geographies of the short-term and residential rental markets in Greece's two major cities and whether these are interlinked. In what follows, we discuss our main findings.

Starting, our analysis confirmed that, comparing Athens with Thessaloniki, both markets appear to exhibit very different spatial characteristics. For one, average residential rents display a less defined spatial allocation in Thessaloniki, reflecting the city's more extensive social mixing. Although Athens—as most other Greek cities—is also characterised by extensive social mixing, with multi-story apartment buildings populated by various social strata depending on the floor (Leontidou, 1990), seems to comprise more areas of a certain social status, either high or low. At the same time, Airbnb activity is significantly more concentrated in Thessaloniki's central areas, which appear to be significantly more touristy than the city's periphery. In contrast, Athens's short-term rental market is evidently more dispersed, with several clusters across its Urban Area. Given the above, interlinkages between long-term and short-term rentals manifest quite differently in each city.

Nevertheless, what was shown from spatial regression was that Airbnb density can explain residential rents' allocation almost on its own in both cities. Although this partly has to do with independent variables being in many cases correlated with rents, the importance of Airbnb activity in estimating average rents

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<sup>15</sup> However, due to the factors of the other dependent variables and their intercorrelations, a direct interpretation cannot be deduced solely from these factors.

in both cities is unarguable. Furthermore, while the individual effect of each Airbnb listing is small, as shown by regression formulas, a stark increase in Airbnb activity—as often seen in highly touristic or gentrifying areas—can have a noticeable upward impact on rent prices. Over time or across neighborhoods, this can contribute to housing affordability pressures. Moreover, this becomes even more important considering that spatial spillover effects compound the trend, as shown from the pertinent coefficient in the aforementioned formulas. Relatedly, both Moran’s I and Pearson’s R showed that residential rents are closely associated with Airbnb activity in both cities and particularly their central (focus) areas. All in all, then, our study confirms the profound impact of short-term rentals on residential rents, resonating with much of the relevant literature (e.g., Lee, 2016; Wachsmuth and Weisler, 2018).

In fact, it must be noted that this is slightly more pronounced in Thessaloniki. At a first glance, this stems from its short-term rental market’s more concentrated geography. Indeed, the touristic central areas where Airbnb listings are concentrated in Thessaloniki are also mostly mid to high status. In contrast, in Athens, after its emergence in central touristic areas (e.g., Gazi, Psirri, Koukaki/Acropolis; see Gourzis et al., 2019), the market expanded into areas of lower status (e.g., Kipseli, Exarcheia, Vathi Sq.; see Gourzis et al., 2022). Nevertheless, even in Athens, and especially its central municipality, higher rents tend to be associated with areas that not only have more Airbnb listings but also higher Airbnb prices and more hotels. In Thessaloniki, the link between residential rents and Airbnb nightly prices is definitely less pronounced. This delineates two short-term rental markets of a widely different type. Specifically, Athens’s relied from the start on the city’s vibrant nightlife, thus, it was not necessarily concentrated in mid/high-status areas. To put it more precisely, Airbnb listings’ penetration in Athens’s urban fabric and their association with higher nightly prices, hotel density, and higher rents, imply intense processes of gentrification and touristification. Arguably, these processes have unfolded in this city more than in Thessaloniki (Gourzis et al., 2022; Katsinas, 2021). At the same time, it must be noted that the milder spatial association between rents and short-term rentals in Athens imply that there are areas where high Airbnb activity has not increased residential rents yet (e.g., Stathmos Larisis, Agios Panteleimon); although this might never happen, it already has in adjacent areas (e.g., Kipseli, Patisia, Exarcheia; Alexandri and Hodkinson, 2025).

On the other hand, Thessaloniki’s limited sprawl simply reflects a lower extent of maturity (Wachsmuth and Weisler, 2018). Indeed, whereas the Athenian short-term rental market emerged as soon as 2012-2013 and two years later it had already exhibited its first instance of rapid expansion (Gourzis et al., 2022), in Thessaloniki, the first significant clusters of Airbnb activity did not appear before mid- to late-2010s (Katsinas, 2021). Moreover, of the 20 million nights spent in short-term rentals in Greece in 2018, Thessaloniki received slightly above 4% (900 thousand), while the four central sectors of Athens received more than 16% (3.3 million; Eurostat, 2025). This is rather expected, given the significantly lower magnitude of Thessaloniki as an urban tourism destination, especially after the 2004 Athens Olympics and given that the city failed to grasp the country’s surging tourist arrivals after 2010 (Gourzis and Gialis, 2025).

Apart from the link between rents and Airbnb listings’ density, the two markets differentiate in terms of nightly prices of listings. Specifically, in neither city these prices appear to be particularly affected by the

local level of competition between listings. Interestingly, they do not appear to be affected by increased competition with hotels, despite the widely documented interlinkages between these two types of accommodation (Schäfer and Tran, 2020). Instead, in Athens, high Airbnb prices do not only cluster in touristy areas such as the inner city and the southern suburbs but also in the city's northern suburbs, which mainly comprise residential areas. To this direction, bivariate correlations and regression models revealed that, in the case of Athens, not only central touristy areas end up having higher accommodation prices regardless of their prior status but also that higher status areas tend to have pricier Airbnb listings, despite their position in relation to tourist attractions. The first observation is something widely confirmed across various contexts; indicatively Shokoohyar et al. (2020, p. 3873) note that "properties with more bedrooms, closer to the historic attractions, in neighborhoods with lower minority rates and higher nightlife vibe are more likely to have a higher return if they are rented out through short-term rental contract". The second observation, however, has just started being adequately underlined in the literature around the impact of Airbnb on rents, as beforehand, it tended to focus overly on recreational tourism. Namely, one of the ways short-term rentals impact on rents is that they not only substitute tourist accommodation, but also cater to transnational mobilities, the purpose of which transcends leisure (Alexandri and Janoschka, 2020) and which are catered by emerging markets such as medium-term rentals (Wachsmuth and Buglioni, 2024). For instance, pricier Airbnb listings in Athens's northern suburbs may cater to increasing flows of medical tourism into the area, which is characterized by high standards medical facilities such as the Hygeia private hospital.<sup>16</sup> Similarly, pricier Airbnb listings along Athens's southern waterfront (i.e., the Athenian "Riviera") caters not only to tourists, but digital nomads (Maloutas et al., 2025).

Having said the above, we must note here that profound differences were observed when comparing the Athens Urban Area as a whole to the city's central municipality. Specifically, residential rents are not particularly associated with Airbnb density, reflecting an overall weak link between the two variables that goes beyond having some cases of high Airbnb activity within lower status areas and vice versa. With this also being tested and confirmed by regression, we conclude that the short-term rental market affects different parts of Athens in different ways. As noted above, Airbnb listings can cluster in central touristy areas, eventually pushing residential rents up, as well as in suburban high-status areas, not having a significant effect on their rental market. This is highly important and resonates with findings in the relevant literature (e.g., see Wrede, 2022 for Berlin). However, it must be noted that clusters of high Airbnb activity and low residential rents can mainly be identified just north of central Athens (see Map 1.3), namely in areas such as Kipseli, the housing markets of which, as noted above, are reportedly receiving notable pressures at the moment (Alexandri and Hodkinson, 2025).

Moreover, closing, we must note that despite this lack of statistical association at the local level, the effect of short-term rentals on land values, manifested in both sales prices as well as rent levels, has been widely

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<sup>16</sup> Hygeia Hospital, The Greek Health Tourism Council. Accessed at:  
<https://www.elitour.org/members/hygeia/>

documented. Indicatively, numerous panhellenic surveys conducted by the international real estate franchise company RE/MAX have concluded that the advent of the short-term rental market played a key role in subverting downward trends in Greek real estate after 2017 (e.g., RE/MAX Greece, 2019; Eurobank Property Services, 2019). On a wider note, the short-term rental market has been a catalyst for the inflow of transnational capital in Greece (Alexandri, 2022), with its gradual growth and professionalization reflecting the increasing role of foreign investors in Greek real estate (Pettas et al., 2024) and a good part of the properties channeled into the market having been purchased through the Golden Visa Program (Bakas, 2024).

## Section 2: Labour and housing precarity interlinkages within touristification in Greece's two major metropolises

## **Theoretical framework: *Touristification* as spatial fix and biopolitical landscape**

This study examines the indirect interrelations between housing and labour precarity within touristified context, arguing that the two first feed each other's precarity in a neoliberal context. To explore these links, we employ an eclectic conceptual framework integrating insights from Critical Tourism Studies, Labour Geography, Political Economy, and Political Science. Our theoretical framework integrates three key conceptual developments. First, we situate tourism geography within a Geographical Political Economy (GPE) perspective. Second, we conceptualize touristification as a spatial fix - a mechanism through which capital seeks to overcome crises by expanding geographically (Harvey, 1981; 2001; 2006) and producing touristified spaces. Third, we extend this interpretation by considering touristification as a biopolitically constructed landscape informed by Foucault's notions of biopower and biopolitics.

### *Tourism geography in GPE*

At the definitional level, we see touristification as a broader reorientation of the economy in affected areas experiencing the abrupt expansion of both tourism-related output and labour (Ojeda and Kieffer, 2020). Although it has recently become synonymous with the proliferation of STRs (Estevens et al., 2023), it is certainly not confined to this phenomenon. Second, touristification refers to an advanced stage in a tourist area's evolutionary trajectory (Gourzis and Gialis, 2025), in which the tourism product encompasses natural and cultural endowments, as well as a wide range of recreation and accommodation options (Papatheodorou, 2004) and significant investment in the built environment (Yrigoy, 2014). The latter investment is often barely noticeable to passers-by, as it involves renovation work within buildings without altering their facades (Gourzis et al., 2022). Third, an abrupt increase in the supply of services in touristified landscapes is matched by a similarly significant increase in demand, locally manifested in heavy tourist traffic.

Our conceptual framework is further based on GPE notions on how capitalism shapes spatial and social relations. Since the 1970s, GPE has examined how tourism operates within global accumulation strategies and the social and international relations it generates, especially in the Global South, where states turned to tourism under political and economic pressure (Turner, 1976). An evident instance of this transition is that tourism has expanded alongside the successive waves of deindustrialization and reindustrialization associated with post-Fordism, relying on an expanding industrial reserve army of labour that, often, was previously employed in agriculture and manufacturing (Mosedale, 2014). This process intensified during post-Fordism, when these nations became incorporated into global markets and facilitated the construction of mega-resorts (Bianchi, 2017), enabling the transfer of surplus income from wealthy to developed nations and thus, shaping an "international division of leisure". Similar patterns appear in Southern Europe, where countries like Greece pursued tourism-led development through the Marshall Plan as a spatial fix aligned with external capital interests (Alifragkis and Athanassiou, 2013).

Globalization has facilitated the flexibilization of tariffs for tourism commodities and services, the increasing embeddedness of financial and commodity markets into a global circuit of exchanges, and the deepening of cultural intertwining between different geographical contexts (Lauer et al., 2013), as well as

investments in immovable and mobile infrastructure that enable the fast and cheap movement of commodities, people, information, and imaginaries, paving the way for uneven (tourism) geographical development (Harvey, 2001). Building on this, we understand touristified spaces as a spatial fix aimed at enhancing the profitability of places experiencing increased tourist flows. This process unfolds through a shift from the “primary circuit” of capital accumulation—the manufacturing of products consumed by tourists or tourism services—towards the “secondary circuit”: the production of the built environment (Yrigoy, 2014; Jover and Cocola-Gant, 2023). Particularly in Southern Europe, this shift has supported a transition from construction-driven to tourism-dependent development models, shaped by EU supranational arrangements (Gourzis and Gialis, 2025).

This process reflects what Harvey (1981; 2001; 2006) terms as ‘spatial fix’ describing the process of geographical expansion through spatial transformations undertaken to resolve capital overaccumulation crises derived from Marx’s theory of the geography of capitalist accumulation. As in other sectors, tourism capital, in order to avoid stagnation and idleness, expands its activities geographically by constructing, transforming, and reorganising the built environment - creating new “landscapes” more attractive to consumers of global tour operators’ products and supporting new rounds of accumulation. Through new spatial fixes, land - also tourism’s primary “raw material” - is further commodified. In the expansion of tourist activities, we can observe the dual nature of the ‘spatial fix’: capital geographically expands but is also “trapped” in the built environment (Yrigoy, 2014). During its expansion and fixation, capital also “fixes” social relationships, as well as labour and housing conditions, within and beyond the transformed area. Simultaneously, one of the spatially imprinted contradictions of capitalism is that it must “fix” a place, creating a “landscape” to support its current activities, only to demolish and restructure it when it is no longer profitable, making way for new spatial fixes perpetually (Harvey, 2001).

### *Biopolitics in tourism*

To unpack the mechanisms jointly driving housing and labour precarity within touristified urban contexts, we also draw on political science and in particular the Foucauldian concepts of biopower and biopolitics, which provide a lens to examine how individuals are disciplined, governed, and resist within the complex system of tourism. In brief, Foucault (2003) presented an enlightening image of the neoliberal state in contrast to its earlier forms (i.e. the sovereign state), exposing the subtle forms of power employed to manage life through diverse institutions, policies, and the market. In his lectures *Society Must Be Defended* (1975–76), he describes a shift from “take life or let live” to the neoliberal logic of “make live and let die.” This transformation signals the emergence of biopower, a form of power that operates through institutions, policies, and markets to regulate life itself, rendering subjects productive according to capital imperative. Biopolitics, as a mode of biopower utilised by diverse institutions (e.g. governmental, non-governmental, symbolic), entails techniques and strategies that regulate and manage individual bodies and the population as a whole, treating social reproduction as a political problem (Foucault, 1978, 2003).

This shift from sovereign to biopolitical governance finds a particularly revealing expression in the neoliberal organization of work and everyday life. Work in the neoliberal context is being flexibilised and

becomes an experience and social token entangling relations between life, reproduction, and capital (Foucault, 1997; Veijola, 2009). A crucial feature of biopolitical governance is the internalization of market rationale by individuals themselves; biopolitics governs both formal labour and broader conditions of social reproduction, shaping how individuals participate in economic and social life. Individuals are not only regulated externally but also self-disciplined in alignment with neoliberal prosperity. In the touristification landscape this can be demonstrated e.g. by the growing phenomenon of individuals converting their homes into short-term rentals or engaging in the consumption and performance of culture within touristified areas (Lapointe and Coulter, 2020). This reflects what Brown (2015) describes as the economization of previously non-economic spheres, where social and cultural practices are restructured to serve the logic and ethics of the market. In touristification context, amateur hosts usually embark on STR activity because of financial or labour insecurity, seduced by the neoliberal promise of “becoming one’s own boss”. Indeed, as previous research indicates, both precarious workers and parts of gentrifying middle-class seek supplementary income through platform-mediated sharing economy (Gourzis et al., 2019). In Greece, where high homeownership intersected with post-2008 economic recession, small property owners turned to STRs as what Gourzis (2020, p.159) calls “a logical response to emerging opportunities,” particularly in gentrified or touristic areas and those in proximity to medical or educational facilities.

Biopolitics entered critical tourism studies from political-philosophical debates during the last few decades especially in relation to labour (Tzanelli, 2022). The “biopolitical sorting of labour” in tourism has been discussed by scholars in relation to both tourists and those employed in the hospitality and catering sector as well as professional/business commuters (Ek and Hultman, 2008; Lapointe and Coulter, 2020; Tzanelli, 2015). Tourism studies also focused on the types of landscape that tourism is establishing in relation to labour. Indicatively, Jover and Barrero-Rescalvo even if they do not explicitly address labour precarity, their approach to touristification as a landscape points to what they term “labor landscapes or flavoursapes” (2023, p.23-4) as an interplay between touristification and transnational gentrification. These kinds of landscapes are created from food ventures’ practice in touristic destinations when they adjust their menus to tourists’ taste moving away from the local preferences. A related notion from service industry research, the *servicescape*, first introduced by Bitner (1992), adopted by many scholars afterwards (e.g. Arnould et al., 1998; Ek and Hultman, 2008). In critical tourism studies, a servicescape refers to the material and spatial ordering through which tourist experience and subjectivity are produced and regulated - the governmentality of their mobilities, exchanges, performativities (see also Ek and Hultman, 2008).

We build on this work to propose *the touristification landscape* as a biopolitical formation—a spatial and social order in which tourism dictates local and transient mobilities, work, and reproduction. Within this landscape, tourism functions as both a symbolic and material ordering/worldmaking force that governs who moves, who belongs, and who is excluded (Franklin, 2004; Lapointe and Coulter, 2020). It restructures land use and urban functions prioritising certain forms of life while marginalising others, thus translating economic logics into biopolitical hierarchies. This is especially true for countries like Greece, where

tourism has become the dominant economic activity that monopolises social and economic life (Gourzis and Gialis, 2025).

Spatial restructuring, combined with the rebranding impact of touristification, fosters a context of precarious and opportunistic work relations and conditions, a petri dish for testing how much labour and housing distress can a population handle before it collapses. Underemployed people and starved businesses are a fertile ground for giving in the fast profit of STRs induced touristification. GPE proposes the concept of platform touristification, which refers to a tourism-oriented overhaul of local economies (Ojeda and Kieffer, 2020) assisted by digital platforms (Estevens et al., 2023). As housing becomes assetized (Gil, 2024), STRs serve as an additional tool for urban accumulation, alongside traditional mechanisms such as city branding and the commercialization of open spaces, enabling profit at the cost of displacement. Within this regime, only those who continuously align with market goals are deemed worthy of preservation (Agamben, 1998; 2002; Minca and Roelofsen, 2021), making precarity a structural necessity for ongoing accumulation. That said, short-term rentals (STRs) - a prominent feature of touristification - can be regarded as biopolitical mechanisms that privilege property owners while deepening housing inequalities.

Many scholars have investigated Airbnb platform as a biopolitical machinery linking tourism with biopolitics (Ek and Hultman, 2008 ; Minca, 2009 , 2011 ; Simpson, 2016). In particular, an inspiring branch of work focuses on the datafication of sharing economy through the platforms' review and rating system which dictates a social disciplining (Minca and Roelofsen, 2021; Roelofsen and Minca, 2018). According to Minca and Roelofsen (2021, p. 748-9) Airbnb's social disciplining "influence people's behavior and contributes to implement modes of social relations that were unknown until its algorithms allowed them to emerge". The mechanism of platform/sharing economy promotes a self-disciplining strategy for the hosts (and the guests) to behave in order to thrive or even to survive. This dictated strategy is also the source of self-exploitation that hosts are dragged into as we mentioned before and we will analyse further. As Minca and Roelofsen (2021, 2018) demonstrated in their works, Airbnb algorithms act as a biopolitical technology that extract value out of various everyday life aspects. Tourism and non-touristic activities are becoming entangled with no clear boundaries (Lepointe and Coulter, 2020). It started from sharing an intimate space, home, and now it involves other activities like eating, strolling, celebrating and more with the locals who -with a price- are welcoming them in their -orchestrated for tourists- lives. A biopolitical machinery needs constantly new territory to expand, new needs to cover, new goals to achieve which can be translated to new experiences spatial and cognitive for the tourist. The biggest problem is that all these datafied experiences are elements of real life affecting people's lives in multiple ways.

Taken together, these dynamics reveal that touristification, as both a spatial fix and a biopolitical landscape, reveals how neoliberal governance operates spatially to manage populations and enable capital accumulation. Spatial fixes that support touristification presuppose urban transformations that establish a specific ordering of economic, political, social, and environmental practices and discourses, thereby excluding others. Landscapes - like spaces - are not fixed; they are the outcomes of decisions,

processes, conflicts, and imaginaries that occur within them (see also Smith, 2003), inherently biopolitical. Within this framework, housing and labour precarity emerge not merely as socioeconomic outcomes but as biopolitical mechanisms through which neoliberal governance orders everyday life.

## Methodology and case studies

To operationalise our research questions we utilized a mixed-methods approach in Athens and Thessaloniki. Together, the two cities represent more than half of Greece's population, with each one having followed a different trajectory regarding touristification in recent years (see Alexandri, 2022; Katsinas et al., 2025). As such, their inquiry allows for a comparative interpretation of touristification's footprint. Specifically, the secondary analysis starts with scrutinizing data on population by educational attainment level, employed persons by occupation, economic activity, professional status, and commute time, and conventional dwellings by occupancy status and type of ownership. This data refers to the national, regional, and municipal levels and was retrieved from the last two censuses of the Hellenic Statistical Authority (ELSTAT), which refer to 2011 and 2021. Additionally, the secondary analysis maps at the neighborhood level the average rents for residential apartments (acquired from [Spitogatos.gr](https://www.spitogatos.gr), the largest real estate platform in Greece, referring to the period between July 2023 and July 2024) and the density of Airbnb listings (web scraped by the authors from [airbnb.com](https://www.airbnb.com) in December 2024, a winter month during which densities are expected to be lower than actual) with both types referring to 2024.

For its part, fieldwork yielded 96 questionnaires in total between April and June 2025, following a snow-ball sampling method implemented in four neighborhoods in Athens (Koukaki and Kerameikos) and Thessaloniki (Kamara/Navarinou and Vardaris). Questionnaires were administered to residents, comprising open- and close-ended questions regarding: their dwelling (type, condition, tenureship status); their neighborhood (reasons for settling, potential changes in population, public spaces, building stock, and economic base); the short-term rental market (opinion, associated opportunities and threats, personal engagement); and their employment (sector, occupation, education level, salary, location of work). The sample of respondents was diverse in gender, age, and income; however, the vast majority (87%) had attained a tertiary education degree (bachelor's or higher). Moreover, the sample was diverse in terms of tenure status, comprising 58 tenants and 27 homeowners, as well as 11 individuals hosted by family or friends.

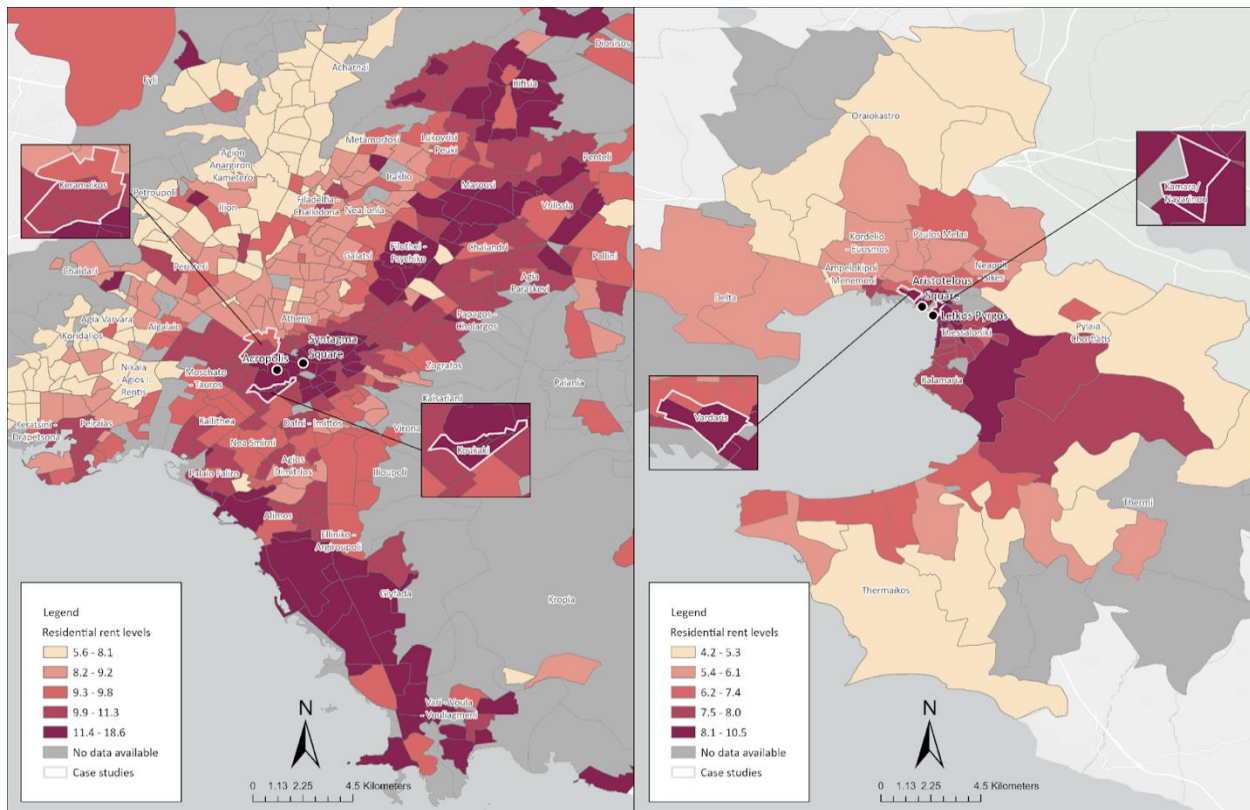
Case study selection was informed by existing literature and an examination of the short-term and residential rental markets in the two cities. Specifically, Koukaki had been a middle-class neighborhood, but due to its central position and accessibility (through metro, tram, and bus lines), as well as close proximity to world renowned tourist attractions (the Acropolis Hill and Museum), it underwent rapid touristification from 2014 onwards (Gourzis et al., 2022). Kerameikos hosted in recent decades a working-class population, including Roma. However, as part of a wider inner-city transformation during Athens's preparation for the 2004 Olympic Games, Kerameikos started experiencing multiple waves since the late 1990s (Alexandri, 2018) and was among the first sites that short-term rentals appeared in the city (Gourzis

et al., 2022). For its part, Kamara/Navarinou has traditionally attracted a youth population and assorted recreational uses, being close to two universities (Aristotle University and University of Macedonia). Moreover, it is characterised by a significant pedestrian street (Gounari Str.) and several important monuments (Lazaridou, 2008). Lastly, Vardaris had historically hosted small-scale industrial activity but gradually underwent urban decay, despite its central position and vicinity to the railway station and important recreational hubs (Ladadika, Valaoritou). After a recent redevelopment of its open spaces (Mavili Sq.) and streets (Dardani, 2021), the area became an epicenter of the short-term rental market.

### **Secondary analysis for the two metropolitan areas**

Table 2.1 shows that owner occupancy rates fell notably in Greece between 2011 and 2021 (from 73% to 70%). This trend is mirrored at the regional and municipal levels, with both metropolitan municipalities showing lower owner-occupancy rates (57% in Athens and 63% in Thessaloniki) than their surrounding regions (i.e., Attica and Central Macedonia respectively). Simultaneously, the dwellings available for rent or sale decreased significantly everywhere except for the Municipality of Athens, which, along with that of Thessaloniki have notably higher rates than their surrounding regions. This reflects their more vibrant real estate markets, albeit these markets have tightened, as the aforementioned contraction shows. Importantly, dwellings that are vacant due to unspecified reasons (likely those remaining unused) decreased over the study period in Attica and Athens, while the opposite occurred in Central Macedonia and Thessaloniki. For one, this points to the devalorization of housing that occurred particularly in Thessaloniki in the aftermath of the 2008/2009 Global Crisis (Katsinas, 2021). Additionally, this observation contrasts a widely adopted narrative in Greece, which attributes the deepening housing crisis of recent years primarily to the large numbers of vacant properties (Money Review, 2024).

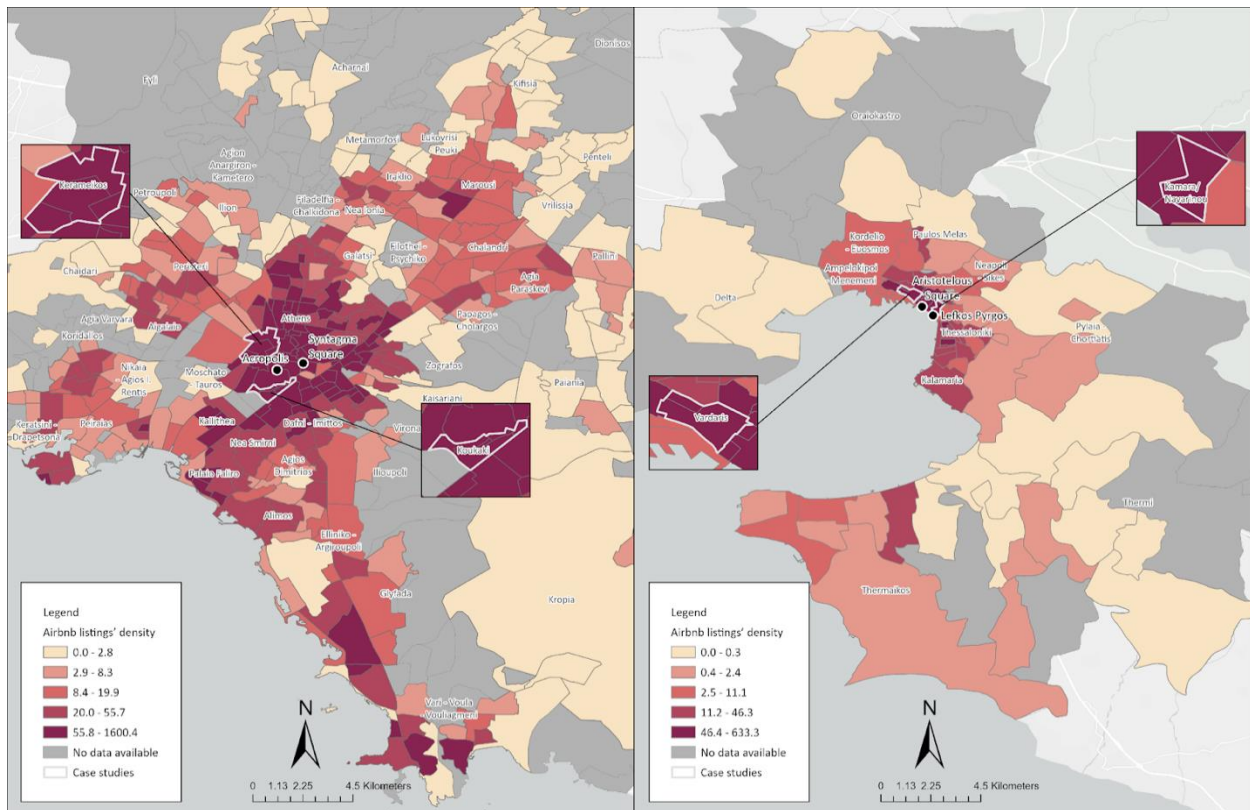
**Map 2.1. Average rents per km<sup>2</sup> for apartments per neighbourhood, July 2023-2024, Athens (left) and Thessaloniki (right) Source: [Spitogatos.gr](https://www.spitogatos.gr), author's elaboration**



Delving deeper into the housing market of the two cities, Map 2.1 shows that high rents in Athens are clustered in the inner city (e.g. Psyrri, Monastiraki, Kolonaki), as well as in the northern (e.g., Filothei, Psychiko, Kifisia) and southern suburbs (e.g., Glyfada, Vouliagmeni). This highlights a profound change in Athens's residential rental in recent years, as its inner city had mostly low average rents until the mid-2010s (Gourzis et al., 2019). Regarding our case studies, Koukaki (€12-€14 per m<sup>2</sup>) lies within this expensive zone of Athens's centre, whereas Kerameikos does not (€9-€12 per m<sup>2</sup>), although it has surely followed the steep expansionary trends of the rest of Athens. In Thessaloniki, high residential rents are again observed primarily in the city centre (around Aristotelous Square and Lefkos Pyrgos) and east of it (e.g., Kalamaria, Pylaia). Both Kamara/Navarinou (€9 per m<sup>2</sup>) and Vardaris (€7-€9 per m<sup>2</sup>) exhibit high rents in comparison to the city's average. Particularly for Vardaris, this is rather striking, given it constituted a characteristically disinvested central area until the late 2010s. Similarly, the above indicates that Kamara/Navarinou has clearly ceased to be an affordable student area. As in Athens then, Thessaloniki's rental market has shifted over the past decade, with inner-city rents now often exceeding those in traditionally wealthy suburbs (e.g., Panorama), or even up and coming areas (e.g., Pylaia).

**Map 2.2. Active airbnb listings' density, December 2024, Athens (left) and Thessaloniki (right)**

**Source:** Authors' web scraping



Map 2.2. reflects that Athens's short-term rental market emerged in the inner city and especially around the Acropolis Hill. Moreover, it documents how, gradually, the city's market expanded outwards, even in lower status areas (e.g., Vathi Sq.; Gourzis et al., 2019). Both Koukaki and Kerameikos have been among the first areas to see short-term rentals in the city, with the northern part of the former neighbourhood (i.e., Makrygianni) hosting over 1,000 active Airbnb listings per km<sup>2</sup>. Kerameikos, as well as the rest of Koukaki exhibit dense—but much lower—concentration (around 260 per km<sup>2</sup>). Additional loci have recently emerged southeast of Athens's centre (e.g. Kallithea), as well as along the city's southern waterfront (i.e., from Piraeus to Vouliagmeni). In comparison, Thessaloniki's short-term rental market exhibits much less sprawl. Specifically, most listings concentrate between the area around Aristotelous Square and Lefkos Pyrgos, with both Vardaris (around listings 220 per km<sup>2</sup>) and Kamara/Navarinou (around 260 per km<sup>2</sup>) being part of this cluster. Albeit displaying lower densities, Thessaloniki's short-term rental market has expanded along the city's downtown waterfront, including relatively wealthy areas such as Kalamaria. The markets of the two cities then display notable differences regarding the intensity of the phenomenon under study, as well as its sprawl. Another distinguishing feature is the level of professionalization; Athens's market exhibits a much higher rate of hosts with multiple listings than Thessaloniki's (Katsinas, 2021).

Seeing Airbnb listings' densities vis-à-vis average residential rents, a notable geographical overlapping can be observed (resonating with recent studies' findings; authors, 2025). Amidst this conjuncture, Greece exhibits the highest rate in housing cost overburden, with almost 30% of households spending more than 40% of their disposable income on housing-related costs and almost 45% staying behind on payments. Both Attica and Central Macedonia regions follow national trends, while especially regarding housing cost overburden, the latter region had the highest rate in the EU in 2024 (36%).

Turning to sectoral priorities, Table 2.1 confirms widespread tertiarization trends. For one, employment in trade (NACE G) increased by over 10% nationally during a period during which total employment increased by 7%. This trend is more intense in all geographical units under study (regions and municipalities) except for Central Macedonia. Moreover, it must be mentioned that the share of this sector in the two metropolitan municipalities is slightly smaller than their surrounding regions. In contrast, the share of accommodation and catering (NACE I) has expanded in these two municipalities (almost by 70% in Athens and by above 90% in Thessaloniki) more than in the country overall (50%), resulting in their shares being higher than in their surrounding regions. The above findings are rather expected, given the Greek economy's profound touristification in the aftermath of the 2008/2009 Global Crisis (Gourzis and Gialis, 2025).

Lastly, comparing the two metropolitan municipalities to their surrounding regions reveals that they generally concentrate significantly higher rates of highly educated population and workers in high skill-level occupations. This reflects significant socioeconomic shifts within Greece's most urbanized municipalities, given that the share of both variables contracted over the study period nationally and regionally, while significantly expanding in the Municipality of Athens and remaining stable in that of Thessaloniki. Another significant observation is that solo self-employment recedes rapidly nationwide and especially in Athens Municipality, at the same time while the rate of employers consolidates in both metropolitan municipalities. Combined, the above shows that both cities' centers become gradually populated by a workforce of higher skill and working in higher positions.

**Table 2.1. Demographic and labour market metrics, national, regional, and municipal levels. 2011, 2021.**  
Source: HELSTAT population and housing censuses in 2011 and 2021, authors' elaboration

Variable	Time reference	Greece	Attica (NUTS-2)	Athens Municipality	Central Macedonia (NUTS-2)	Thessaloniki Municipality
Dwellings occupied by owner	<b>change 2011-2021</b>	<b>0.6%</b>	<b>3.3%</b>	<b>1.2%</b>	<b>-2.5%</b>	<b>-1.6%</b>
	share in occupied dwellings 2021	70.3%	65.2%	53.0%	71.8%	57.8%
	share in occupied dwellings 2011	73.2%	68.4%	56.7%	75.7%	62.7%
Vacant dwellings for rent or sale	<b>change 2011-2021</b>	<b>-14.1%</b>	<b>-15.6%</b>	<b>3.8%</b>	<b>-28.9%</b>	<b>-16.6%</b>
	share in all dwellings 2021	7.1%	7.0%	13.0%	7.2%	11.4%
	share in all dwellings 2011	8.5%	8.5%	12.8%	10.4%	14.0%
Unused/vacant dwellings	<b>change 2011-2021</b>	<b>-7.8%</b>	<b>-22.8%</b>	<b>-5.6%</b>	<b>21.0%</b>	<b>9.6%</b>
	share in all dwellings 2021	5.0%	4.8%	5.6%	5.4%	5.5%
	share in all dwellings 2011	5.6%	6.3%	6.0%	4.6%	5.1%
Total Employment	<b>change 2011-2021</b>	<b>6.9%</b>	<b>8.3%</b>	<b>6.1%</b>	<b>8.4%</b>	<b>15.6%</b>
Employment in Trade and Repair of Vehicles (NACE G)	<b>change 2011-2021</b>	<b>10.4%</b>	<b>13.2%</b>	<b>13.4%</b>	<b>10.2%</b>	<b>14.8%</b>
	share in total employment 2021	18.1%	19.7%	17.2%	19.7%	19.4%
	share in total employment 2011	17.5%	18.8%	16.1%	19.4%	19.5%
Employment in Accommodation and Catering (NACE I)	<b>change 2011-2021</b>	<b>49.9%</b>	<b>64.3%</b>	<b>68.6%</b>	<b>57.5%</b>	<b>91.8%</b>
	share in total employment 2021	11.0%	8.8%	11.4%	9.9%	11.5%
	share in total employment 2011	7.8%	5.8%	7.2%	6.8%	6.9%
Population with tertiary education (ISCED 5-8)	<b>change 2011-2021</b>	<b>22.1%</b>	<b>19.6%</b>	<b>15.9%</b>	<b>23.0%</b>	<b>22.5%</b>
	share in total population 2021	21.1%	26.6%	29.2%	20.8%	31.5%
	share in total population 2011	16.7%	22.2%	24.4%	16.1%	25.2%
High-skilled labour (ISCO 1-3)	<b>change 2011-2021</b>	<b>3.1%</b>	<b>3.7%</b>	<b>7.0%</b>	<b>3.6%</b>	<b>10.7%</b>
	share in total employment 2021	31.7%	37.7%	36.7%	31.6%	44.1%
	share in total employment 2011	32.9%	39.4%	36.4%	33.1%	46.1%
Employers (self-employed with staff)	<b>change 2011-2021</b>	<b>1.7%</b>	<b>-0.2%</b>	<b>20.4%</b>	<b>1.1%</b>	<b>16.7%</b>
	share in total employment 2021	7.0%	5.9%	4.7%	7.2%	6.4%
	share in total employment 2011	7.4%	6.4%	4.1%	7.7%	6.5%
Solo self-employment	<b>change 2011-2021</b>	<b>-18.4%</b>	<b>-25.3%</b>	<b>-29.7%</b>	<b>-21.0%</b>	<b>-15.3%</b>
	share in total employment 2021	17.1%	10.8%	10.1%	18.6%	13.3%
	share in total employment 2011	22.4%	15.7%	15.2%	25.6%	18.7%
Employed persons in close proximity of work	<b>change 2011-2021</b>	<b>12.4%</b>	<b>44.1%</b>	<b>9.5%</b>	<b>10.9%</b>	<b>0.3%</b>
	share in total employment 2021	64.8%	48.7%	68.4%	63.2%	70.0%
	share in total employment 2011	61.7%	36.6%	66.3%	61.8%	80.7%

## Questionnaire-based fieldwork analysis: Effects of touristification in urban space and labour markets

In this section we are going to analyse the responses from the questionnaires regarding the perceived impact of touristification in the areas under study according to three major themes: neighborhood change, housing, and labour.

### *Perceived neighbourhood change*

Fieldwork results render clear that almost all respondents (above 80%) see significant change in their neighbourhoods. Specifically, almost half of them state that the residents relocating to other neighbourhoods do so involuntarily, as do relocating businesses, which are replaced by tourism-oriented food and drink businesses. Importantly, a negative sentiment against STR activity is expressed across the sample. Namely, most (almost 80%) believe that it affects their neighbourhoods negatively, while very few (less than 20%) believe that it can be associated with building improvements. On the contrary, one respondent living “in an apartment building that is almost exclusively used for Airbnb”, notes that those dwellings’ inadequate maintenance, including “damaged pipes and structural problems from

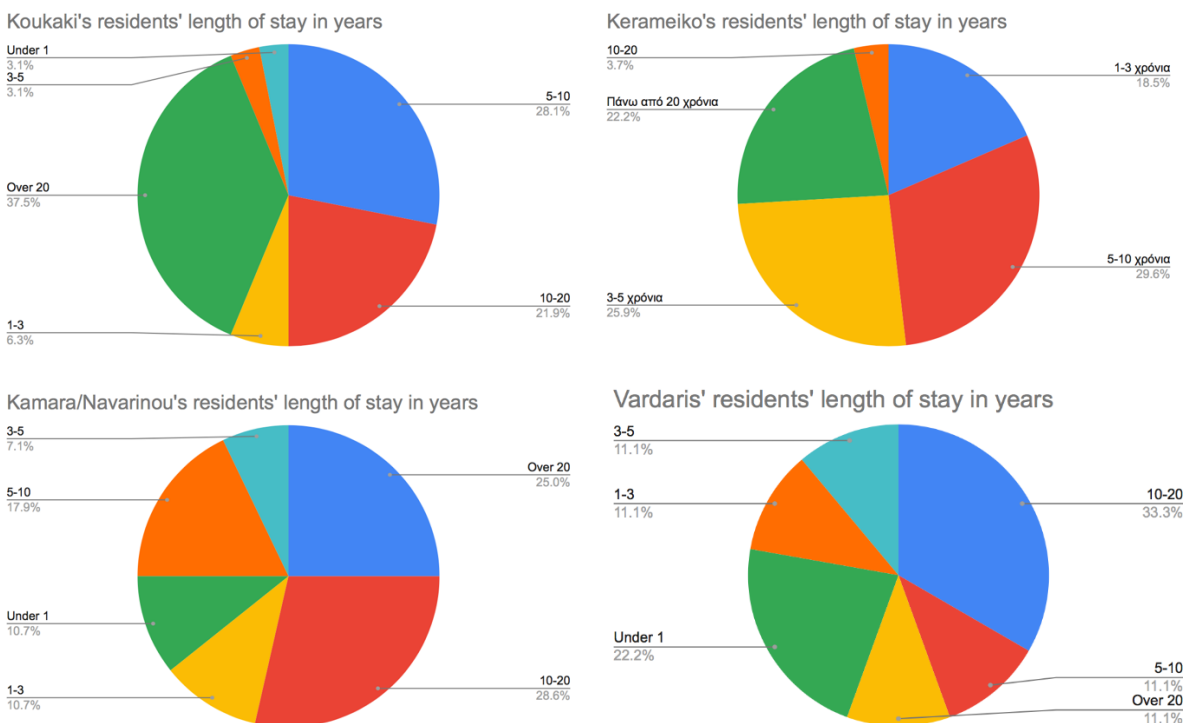
*renovations”, “affect living conditions within the building as a whole.”* More importantly, almost all respondents attribute hikes in residential rents and sale prices, as well as population displacement, to its expansion in recent years. As such, it is rather expected that the majority (almost 80%) sees that STRs only benefit hosts and related business owners, generating no significant volume of jobs, and only a small minority (less than 20%) deems as important that they produce revenue for the state. Below, we delineate the idiosyncrasies of each case study.

In Koukaki nearly all residents report changes in the population base, with almost half placing the neighbourhood’s transformation to have begun between 2015 and 2020. Two-thirds attribute the former to involuntary displacement and almost half note the inflow of affluent foreigners and Greeks. Moreover, nearly all respondents find new food and drink businesses targeting a tourist clientele and adhering to a mass recreation model. Equally important, they find that most other businesses have similarly changed, with one resident noticing even *“supermarkets making changes in their offered products and isles’ organization based on the needs of tourists”*. In this context, another notes that *“all shops that provided services to permanent residents have closed.”* A great part of the displacement of both longtime residents and economic activities is attributed to the STR market. Specifically, respondents’ view of this is probably the most negative across the sample, as, not only all link it directly to rising rents and nearly all to population displacement and house prices, but the majority also associates it with skyrocketing prices in recreational establishments, clashes between residents within apartment buildings, and noise pollution (each reported by around 70% of respondents), while many note the production of waste and increasing prices in commercial stores (each reported by around 35%). Importantly, residents there stressed more persistently than elsewhere the *“serious issue of noise pollution due to certain establishments that systematically disturb the peace during quiet hours”*, as well as the *“daily traffic jams caused by tourist buses.”* The above resonate with literature pinpointing Koukaki’s abrupt touristification in the mid-2010s (see Methodology), but they also indicate signs of a subsequent transnational gentrification. As such, those noticing building improvements are more than elsewhere (more than half), although these are not always perceived positively, with one resident noting the uniformity of the area’s building facades due to the expansion of hotels and STRs *“watering down the neighbourhood’s character”*. Simultaneously, no significant changes in public changes are reported; on the contrary, many respondents stress the municipal authorities’ absence. For instance, one notes that *“Filopappou Hill has remained completely neglected and it is not properly maintained in recent years, including regarding irrigation”*. This insight is especially significant because respondents from Koukaki have lived there longer than those in the other case studies (nearly 40% have been residents there for more than 20 years).

Similarly, in Kerameikos, almost all respondents (above 80%) notice neighbourhood change, while half of them confirm involuntary population displacement. However, there is no consensus as to who settled in. Some (one-quarter) indicate affluent and/or young Greek households, while others less affluent residents. This underlines Kerameikos’s non-linear evolutionary trajectory, which possibly entails touristification side-by-side with marginal gentrification. As in Koukaki, most see no significant change in public spaces. Regarding the building stock, however, views are mixed, indicating extensive renovation of apartment blocks, including their facade, alongside urban decay. As one respondent put it, this is a *“rather*

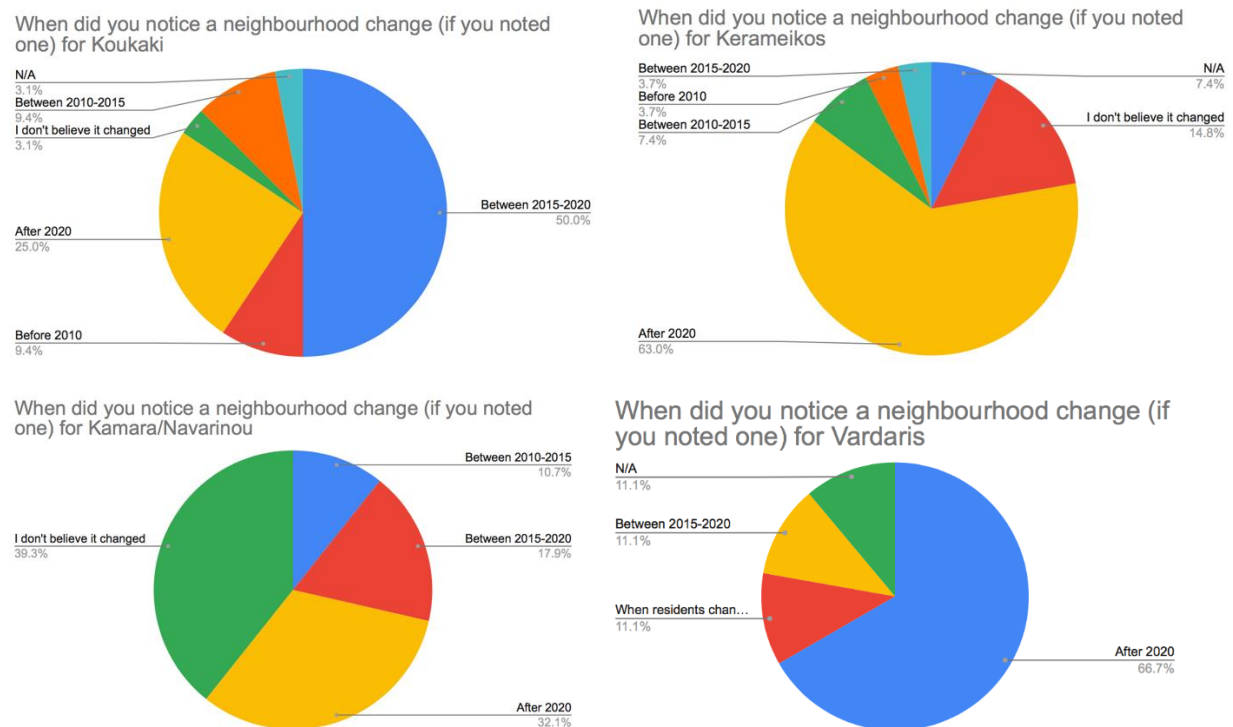
*complicated issue; only the buildings that were converted into Airbnbs were improved*”; this phrasing points to ghost hotels operating there (Gourzis et al., 2022). Moreover, another revealed that *“most vacant buildings and warehouses have been renovated as hotels”*. The above have led to a landscape where *“numerous homeless people live in tragic conditions outside empty Airbnb apartments.”* Nevertheless, Kerameikos is the only case study in which respondents regard that local food and drink businesses now target wealthy urbanites too, rather than just tourists. Indeed, prior research has noted the area’s culinary scene, which has developed over the past 20 years (Alexandri, 2018). The extent of change noted by respondents in terms of the neighbourhood’s character, population and economic base, and building stock, indicates that Kerameikos has undergone gentrification, which in recent years has adopted touristification characteristics. In this context, sentiments regarding STRs are similar to Koukaki, only a bit milder. It must be noted however that most respondents find neighbourhood change to have occurred after 2020, which contrasts relevant studies following gentrification processes there since the late 1990s (Alexandri, 2018). As such, this should be seen in conjunction with respondents’ average length of stay (more than half have lived in the area for less than 10 years), which is lower than in the other case studies. The above suggests that many respondents are themselves part of recent gentrification/touristification waves, and their responses imply a new round of urban transitions taking place in Kerameikos during and especially after the COVID-19 lockdown period.

**Figure 3.1. Residents’ length of stay per neighborhood.**



Respondents in Kamara/Navarinou noticing significant neighbourhood change are notably fewer (around 65%) than in Athens’s case studies, although those who do, place it after 2020. More specifically, a notable share does not see changes in the area’s economic (around 30%) and population base (40%). Nevertheless, it must be noted that many observe involuntary displacements and the inflow of more affluent Greek households. Moreover, albeit the area’s milder transition, the extensive STR penetration that was confirmed through secondary analysis is noticed by respondents, with one stating that “*at least three apartments within each building around here operate permanently as short-term rentals.*” Therefore, although literature has not documented notable gentrification pressures in the area, more than half of respondents noted that there has been extensive and involuntary population displacement, with some identifying affluent Greeks as the inflowing population. These are directly associated with the proliferation of STRs (by around 80% of respondents), although in general, the latter’s negative externalities are stressed to a lesser extent than in the Athenian case studies. This is an important observation, given that the density of Airbnb listings there is almost as high as Kerameikos’s that may pertain to the longer touristification processes in Athens as compared to Thessaloniki (see secondary analysis). Importantly, almost half reported that public spaces there have improved, not just aesthetically. However, many—in comparison to other neighbourhoods—(more than a quarter) deem that the building stock is deteriorating. The above appear to be valid findings, given that more than half of the respondents have lived in the area for more than 10 years.

**Figure 2.2. Timeline of neighborhood change per area**



Similar observations can be made for Vardaris. Specifically, more than half of respondents noticed significant changes after 2020, while almost 90% noted that the population base has changed in recent years. Nevertheless, those noting a touristification of local food and drink businesses are more (around 35%) than in the latter neighbourhood, with one stating that they have “*gradually altered the neighbourhood’s character*”. This is not always deemed as negative, as praising the “*vibrancy they have granted the area*”, which probably counterweights urban decay. In fact, the extent of disinvestment in the neighbourhood was noted frequently, with one resident noting that “*it is difficult (for the neighbourhood) to become uglier*”. Similarly to Kamara/Navarinou, STR activity is viewed negatively, but it must be noted that the neighbourhood’s proximity to traditionally working-class commercial areas is probably related to the high number of those noting STRs’ impact on prices in shops. In contrast to all previous cases, most respondents are not indifferent to changes in public spaces, reporting either improvement, or worsening. This indicates that redevelopment has targeted very specific pockets of this neighbourhood (e.g., in Mavili Sq.; see Methodology Section).

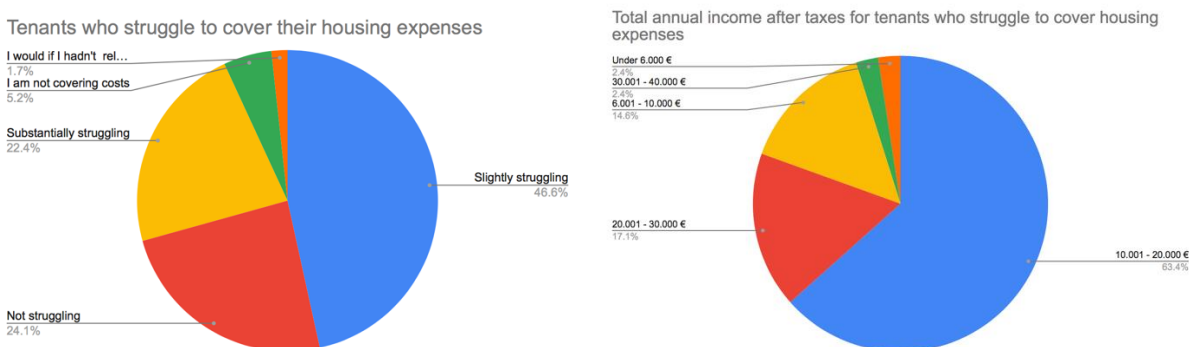
### *Housing precarity*

As shown above, there are clear signs of transitions that put pressure on local populations and businesses. Questionnaires’ sections regarding housing cost overburden can provide further insight regarding the pressure exerted on the former. First and foremost, precarity seems to be pervasive across the sample, as the majority faces some extent of difficulty to cover housing costs (over 60%). This is particularly striking, given that most respondents have received tertiary education (35% with a BSc degree and 45% with a postgraduate degree), hold permanent waged jobs or run their own businesses, and their overall earnings (see Methodology) are deemed as high (within a context where €800 monthly salary is fairly common; Alexandri, 2022). Moreover, another indication of the sample’s privileged status is that the quality of daily life (40%) ranked above finding a cheap rent and proximity to work (30%) as a reason for settling in.

As expected, housing precarity is particularly pronounced among tenants, with half of them facing relatively minor difficulties and another one-fourth facing great difficulties in paying their rent. As found in the secondary analysis, rents in Koukaki appear the highest, with over half of tenants there paying 500€ or more for one- or two-bedroom apartments, whereas the most common rent category across the sample is 300€ to 500€. Moreover, the majority of tenants report a recent increase in their rent (almost 75%). The above is reflected in most of them considering relocating (almost 95%), with high rent being the most frequently cited reason (around 55%). Rent increments in Kerameikos are reported less frequently (by around 35%), as well as thoughts of relocation (65%). Nevertheless, those indeed considering it cite rent level as a prominent reason, alongside problems with their house (size, condition; both cited by 30%). At the same time, Kamara’s tenant population appears to be facing the greatest difficulty—at least to some extent—paying rent (80%), which should be seen in conjunction with the population’s lower earnings in comparison to the other case studies (the €10,000-€20,000 category is the widest there while the €20,001-€30,000 the narrowest except for Vardaris). Combined with the

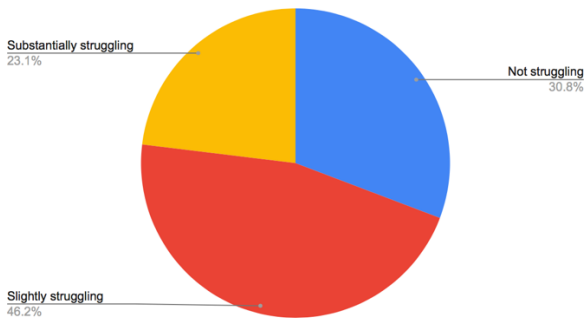
observations about the neighbourhood’s transitions, it is indicated that reintensified processes of gentrification render the position of marginal gentrifiers increasingly difficult in the area. In Kamara, rent increases are reported by half of the respondents and thoughts of relocation are expressed by slightly more (65%). Notably, the cited for the latter differentiate from other neighbourhoods, as moving closer to work or education stands out (25%). Lastly, in Vardaris, which concentrates the largest population with earnings lower than €10,000 annually, rent increments as well as thoughts of relocation due to this are reported by one-third of tenants, indicating that the area’s gentrification/touristification has commenced fairly recently. Overall, although much of the sample would wish to move elsewhere, most are unable to do so due to a widespread escalation of rents. This brings forth some type of forced immobility, which constitutes an overlooked type of housing precarity. One resident in Koukaki indicated that they are *“forced to stay at a friend’s property with a lower rent, as moving to a more likable area is impossible”*. Similarly, another resident there stated that they *“often think of moving to a newer dwelling, but seeing how expensive rents have become, they change their mind”*.

**Figure 2.3. Tenants’ struggles with housing costs**

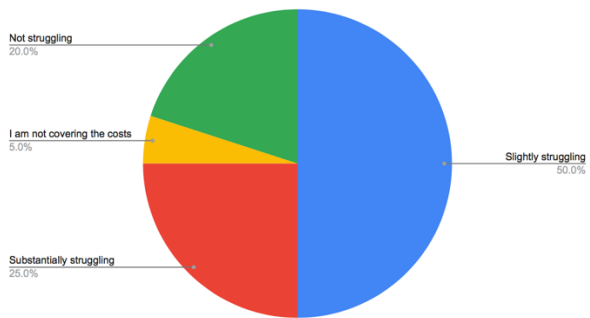


Precarity for owner-occupiers is markedly lower. Specifically, homeownership correlates with longer residence in a neighbourhood, with Koukaki’s long-term residents being owner-occupiers. Conversely, this implies a widespread replacement of the neighbourhood’s tenant population by short-term visitors (Gourzis et al., 2022), which highlights homeownership as the strongest safeguard against displacement pressures in contexts of intense touristification. Nevertheless, the majority of owner-occupiers in our fieldwork were found to struggle covering their housing expenses (almost 65%), with those in Kamara/Navarinou and Koukaki appearing to be in a worse position. Equally important, despite homeownership being widely viewed in Greece as a long-term safety net (Adamopoulou et al., 2025), the number of those considering selling (25%) was not negligible. The above is striking given that this sample segment is relatively privileged. Not only do most have no active loan on their property (around 80%) but also most received or acquired it through family support (almost 65%).

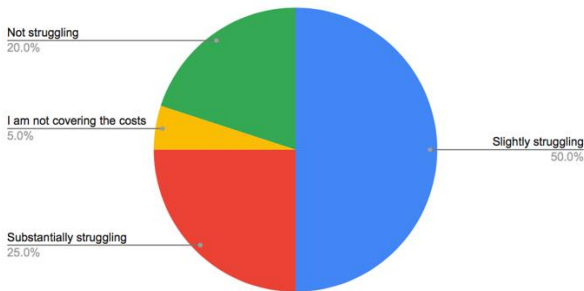
Koukaki's tenants who struggle to cover housing expenses



Kerameiko's tenants who struggle to cover housing expenses

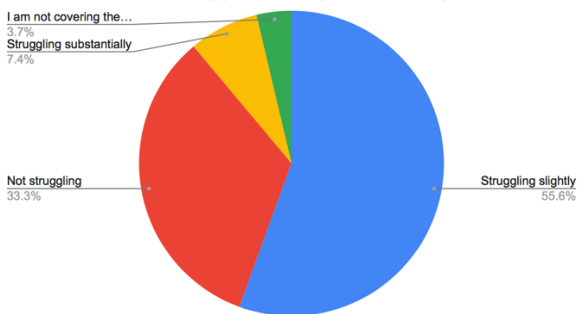


Kamara/Navarinou's tenants who struggle to cover housing expenses

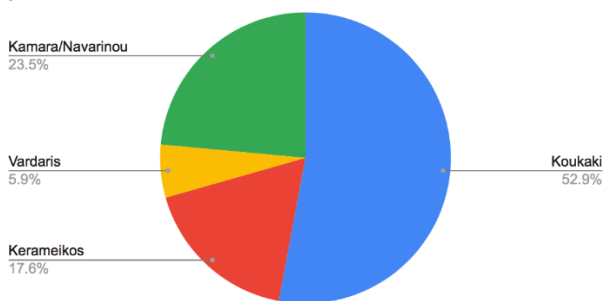


**Figure 2.4. Homeowners' struggles with housing costs**

Homeowners who struggle covering their housing expenses



Homeowners who struggle to cover housing expenses per area



Widespread housing precarity across the sample has generated various strategies. Primarily, (intergenerational) family support in acquiring property, covering costs, or paying rents and mortgages is recurring (resonating with Dagkouli-Kyriakoglou, 2018). Additionally, STRs emerge as a notable coping strategy, with many homeowners (40%) and tenants (25%) stating that they own or would like to own such listings, mainly to generate extra income or cover property expenses rather than as a primary occupation. Importantly, this was not expressed only by those viewing STRs positively or indifferently but also by many who view it negatively (almost 20%), which highlights the precarity of their position in the housing market. As a strategy, resorting to home-sharing extends beyond the urban context, with one homeowner noting that they have “*uploaded their country house to the platform*”. This draws a direct link

between increasing precarity within urban housing markets and the proliferation of STRs in countryside ones.

### *Housing conditions*

In all four case studies, the responses regarding housing conditions correlate with those regarding the overall condition of the building stock. Specifically, many respondents reported serious problems regarding their house (almost 60%), including poor insulation affecting temperature regulation and related soundproofing issues (each reported by 35% of respondents), as well as extensive humidity (25%). Paradoxically, most consider their dwelling to be in good condition (almost 70%). Indicatively, in Koukaki respondents consider their dwelling to be in good condition (70%), while more than half report at least one serious issue, including poor window frames (35%) and insulation (25%). In Kerameikos, where slightly more than half consider their dwelling's condition good, almost half appear unable to keep it to a good temperature. Most characteristic is the case of Kamara/Navarinou, where almost 80% state a good dwelling condition but almost 70% report a serious issue (primarily soundproof and insulation related). The above implies that these neighbourhoods' expectations for their dwelling are generally low, which can be viewed as an indirect form of housing precarity.

**Figure 2.5. Condition of the residence per area**



As expected, renters were found to be particularly vulnerable against poor housing conditions, as most (above 75%) reported at least one serious issue. Relatedly, one in Kamara/Navarinou noted that *“tenants constantly face accessibility issues and damages in the shared parts of buildings, which deeply affect their daily lives”*, while more specifically, another mentioned that *“the building is very old and the elevator is dangerous and needs to be replaced.”* Nevertheless, the same noted that *“the owners are unwilling to bear costs (of maintenance)”*, and in general, there is a widespread sentiment that *“(owners) do not consider tenants’ problems, nor do they respond to reasonable requests.”* In some cases, persisting problems with their dwellings become a prime reason for tenants considering relocation, as in Kerameikos. With direct pressures for evictions being uncommon, owners’ unwillingness to engage with maintenance issues could be seen as an indirect form of pressure, not usually for converting their apartments into STRs but for raising rent between tenants (Stein, 2015).

Homeowners themselves are not insusceptible to such issues, as many reported similar problems (above 50%), without being able to address them. This implicitly refers to an increased housing cost overburden, which either way affects one-third of the population in the entire respective regions (Attica and Central Macedonia; see secondary analysis). Moreover, the above constitutes a crucial finding, given that most respondents should be regarded as rather privileged, characterised by job stability and increased—in comparison to the country’s average—earnings (see below).

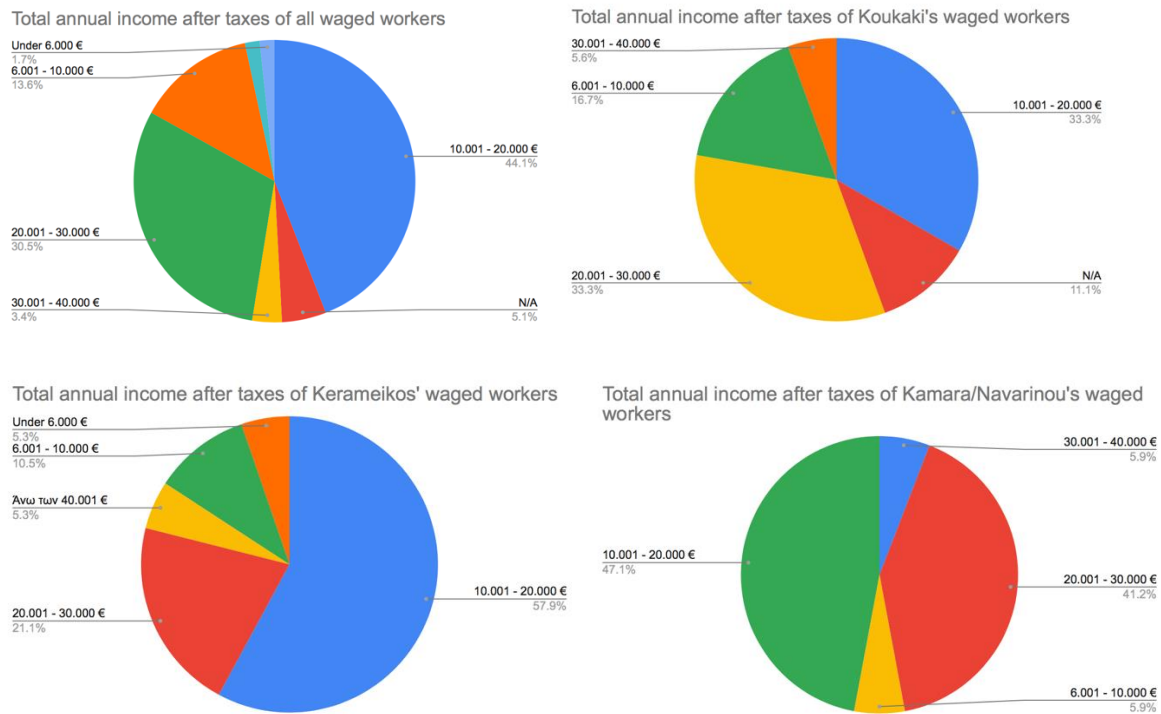
### *Labour conditions*

Resonating with the secondary analysis’s findings regarding Greece’s two metropolitan municipalities, our fieldwork sample was found to be more educated and holding higher skill-level positions than the general population (see Methodology). Nevertheless, signs of labour precarity, which extend beyond traditional indicators of job security and income levels, can be inferred from fieldwork, especially among waged workers and solo self-employed.

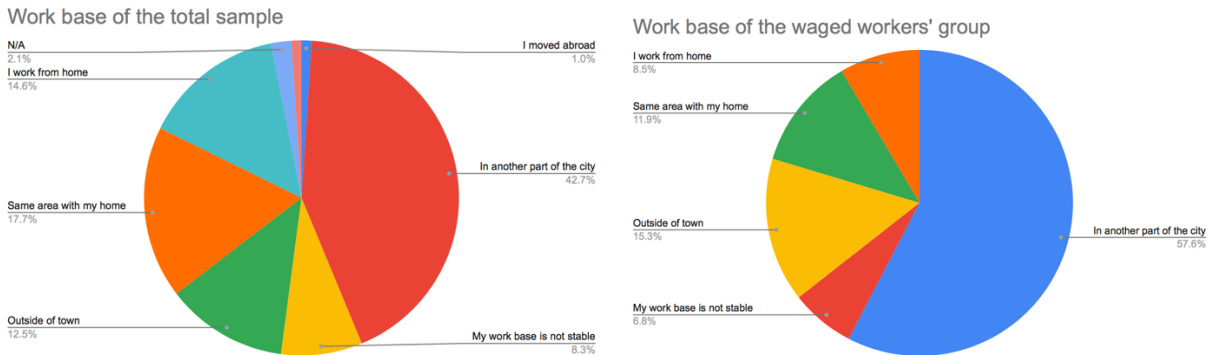
More specifically, employees, despite holding full-time and permanent jobs (90% in both categories), and their earnings to fluctuate very often above €20,000 annually (30%) with upward trends (almost 65% enjoying a raise in recent years), admitted that their workload has increased to a lesser (40%) or greater (35%) extent. Moreover, although more than half avoid identifying as precarious workers (60%), the rest reported contract breaching in terms of working hours (30%) and unpaid overtime (20%), while a notable number hold more than one job to sustain their livelihood or face extremely flexible schedules (10%). The above is clearly reflected in Kerameikos, where half of employees identify as precarious and almost all (above 80%) find that their work has intensified in recent years. Moreover, above 20% work multiple jobs, with their age (most are aged 31-40) and years in the neighbourhood (most settled in fairly recently) suggesting that they are marginal gentrifiers (see Gourzis et al., 2022, on poly-employment in the area). Characteristically, one resident of Kerameikos with a postgraduate degree noted that *“they work two jobs to make a living [...], often without pay.”* In contrast, employees in Koukaki, who occupy a smaller share (50%) than in the other case studies (60% in Kamara/Navarinou, 70% in Kerameikos), display high rent

levels, with 40% earning above €20,000 (25% in Kerameikos), and not likely identify as precarious (30%). Similar is the case of Kamara/Navarinou, where many waged workers are highly paid (45% earn over 20,000) and few identify as precarious (35%). Lastly, disproportionately many—in relation to other sample segments—work far from their residence (60%). Considering that proximity to work constitutes a prime reason for settling in for the sample (reported by 35%) and achieved by many workers in the Greek urban context (see Secondary Analysis), longer commuting time seems to be affecting populations in touristified areas disproportionately. As such, it refers to housing precarity, stemming from a forced mobility, as well as labour precarity, as it has been found that changing the place of work for an individual has been used as a form of pressure for resigning, in activities like warehouses, malls, and supermarkets (Gourzis et al., 2022). Overall, distance from work constitutes an overlooked form of precarity that puts multidimensional pressure on everyday life.

**Figure 2.6. Waged workers' characteristics**



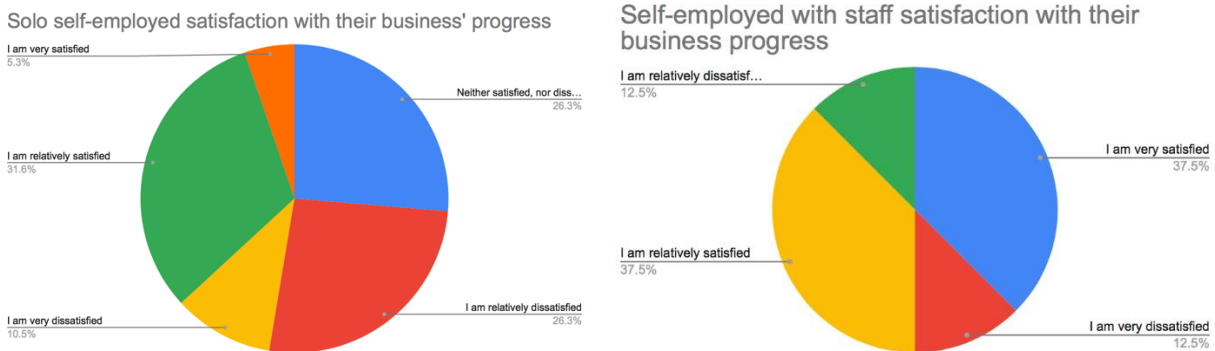
**Figure 2.7. Distance from work according to work status.**



The solo self-employed appeared to be another sample segment under evident precarity. Not only their earnings are lower (85% below €20,000) but the majority considers terminating their activity (75%), being often left without work or working permanently for just one client (each 25%). Ultimately, many within this group appear unable to cope with the wider economic environment and rising costs (each 20%), with one freelancer noting that *“taxation takes 50% of their income.”* In the cases where earnings are adequate, it is because *“workload has multiplied”*, as another freelancer noted. As a result of the above, it is rather expected that most within this group are either indifferent (over 25%) or dissatisfied with their business (37%).

The above-analysed group of self-employed should be distinguished from those with staff. The latter, despite leading very small ventures (1-3 employees), are mostly satisfied with their activity (75%), not having any thoughts for terminating it (almost 90%). This group within our sample mainly concentrates in Koukaki, with this being one of the main reasons for the area’s higher income levels in Koukaki than the other case studies. Nevertheless, this reflects the neighbourhood’s actual social composition, when viewed in conjunction with the above findings regarding homeownership and waged workers. Specifically, it becomes apparent that long processes of touristification since the mid-2010s (see Methodology) have filtered out the area’s less wealthy population, leaving upper middle-class employees and business owners. This is a crucial finding, as it highlights a touristification-led gentrification.

**Figure 2.8. Self-employed participants' satisfaction with their business' progress**



## Discussion

The combined analysis of secondary and primary data underscored the interweaving of housing and labour precarity in the context of touristification revealing the pervasive effect of touristification in the living and working conditions in the areas under study. This section analyses the perceived impact of touristification upon urban environment, housing, and labour through a GPE and Political Science and in particular, through the conceptualization of touristifications' spatial fix as a biopolitical landscape: the *touristification landscape*. The ordering within this landscape impacts the mobility of actors and materials in multiple levels: tourists, infrastructure, investments, and local population are ordered to relocate or stay put in ways that are profitable for capital. These processes impact, reshape or even erase elements of nature, built environment, and culture in pursuit of economic growth. The discussion proceeds in three parts: first, it outlines the distinct characteristics of the various forms of *touristification landscapes* observed across the four areas; second, it examines the (im)mobilities ordered by biopolitics; and third, it explores the interlinkages between labour and housing precarity within this landscape.

Overall, our findings reveal that housing and labour precarity intertwine, forming a complex nexus. Even in a privileged on the surface sample with strong qualifications, relatively stable work conditions, no prevalent housing debts and high family support, precarity cut across multiple sectors of urban living reinforcing itself. Characteristically, one-third of participants who reported difficulties in covering housing costs declared annual incomes exceeding €20,000, while even individuals without apparent job precarity faced financial difficulties.

### *Perceived change: touristification led urban transformations*

Framing touristification as a *spatial fix* (Harvey, 2001), we argue that capital reterritorializes through the transformation of both built environment and social relations. In Greece, longstanding labour surpluses and weak unionization - exacerbated by the post-2008 crisis (Hadjimichalis, 2014; Mavroudeas, 2014) -

created fertile ground for touristification, generating precarious and exhausting employment across retail, leisure, and hospitality sectors (Gourzis et al., 2022).

According to our findings, the four study areas represent distinct stages of the touristification process. Indicatively, Koukaki represents a mature touristification landscape according to secondary data, residents' observations and previous studies (Gourzis et al., 2022). Kamara, on the contrary, seems to be "touristification in the making" - an earlier stage of tourist growth, activity and dependence. Kerameikos, conversely, presents a hybrid landscape where gentrification - initially driven by cultural and recreational developments since the early 2000s (Alexandri, 2018) - persists alongside an emerging touristification trajectory observed since 2013 (Gourzis et al., 2022). This coexistence resembles what Cocola-Gant and López-Gay (2020) describe as a dual process, combining features of both gentrification and touristification while attracting transient gentrifiers and tourists alike as the two groups share spatial practices. Vardaris, based mainly on secondary and literature indications, shows early signs of touristification - evident in minor urban interventions, increasing rents, and a growing STR and tourist presence. Crucially, half of our respondents being residents for less than five years, may also be part of the new landscapes' configuration unable to detect previous transformations. Therefore, they themselves represent a new urban composition, possibly attracted by the lifestyle and consumption patterns nourished in the landscape.

Perceptions of neighbourhood transformation vary according to the sovereignty of touristification in place. Indicatively, Koukaki's residents acknowledge the change widely, coinciding with the growth of STR activity and tourist flows after 2015 – documented also by existing research on the area. However, some scholars, observed an increase of tourist flows in the area already since 2009 (Stergiou and Farmaki, 2020). This highlights the link between urban and social transformation and platform-mediated tourism in the context of touristification. Residents also report high local and transient population mobility, conversions of local businesses to cater to tourists and affluent nationals, and limited public investment benefiting locals. In the hybrid gentrification–touristification landscape of Kerameikos, perceived change is more recent (post-2020) and a bit less intense, acknowledging only the last of the configurations occurring in the area. As most respondents settled after gentrification was established, earlier changes remain outside their perception. However, the transformations reported reflect both ongoing gentrification and growing tourist pressures, marked by the "invasion" of affluent nationals and foreigners reshaping the social fabric and commercial life, while urban environment is deemed as stable to deteriorating, showing stagnant investments towards local population wellbeing. In Kamara, a less advanced touristification case, the impact is less acknowledged around the post-2020 period with the rise of STRs and tourist inflows. Concerning the commercial restructuring in the area, a servicescape designated for tourists emerges, while Kamara uniquely shows signs of urban improvement - suggesting investment typical of an early spatial fix. The proliferation of food and beverage outlets, oriented toward mass rather than individualized leisure across the areas, reflects a biopolitical ordering of space through the massification (versus individualization) of leisure (Veijola and Jokinen, 1994), reinforcing the performative and disciplinary aspects of the touristified city.

It is interesting to examine also the perceptions of those who directly benefit from touristification and, in particular, STR hosts. Although nearly all hosts acknowledged the detrimental role of STRs in raising rents, about half nonetheless, viewed neighbourhood change positively - a much higher proportion than in the general sample. This divergence reveals a moral and material divide between beneficiaries and those displaced, consistent with gentrification research (Gourzis et al., 2022). However, even hosts remain embedded within and exposed to the same precarity that touristification produces as it is discussed later.

Despite significant socio-demographic changes and transformed commercial activities, respondents, especially in the Athenian cases, widely noted a lack of corresponding public or infrastructural investment. In contrast to conventional urban regeneration narratives, touristification - particularly through digitally mediated STRs - has led to the degradation rather than improvement of the built environment. While Koukaki, the most touristified area, saw some perceived enhancement in building functionality (Balampanidis et al., 2021; Gourzis et al., 2021), public spaces were largely considered stable or deteriorating across the Athenian areas. These responses echoed the case of Napoli where activists, scholars and politicians point out that the city is being degraded by the touristification (Sapio, 2025). Interestingly, residents in Kamara - the least touristified site - noted some improvements in public space, despite limited STR penetration. This may reflect early-stage speculative investment or a state-led attempt to revalorize the area.

Although the establishment of the touristification landscape presupposes significant public and private investment, respondents highlighted its absence, echoing Gourzis et al. (2022), who note that such interventions are often imperceptible. Even without visible investment towards residents' wellbeing, spatial and social transformations are irreversibly impacting socio-economic conditions for the inhabitants (see also Sapio, 2025). The spatial fix of touristification thus extend beyond the built environment to the governance of mobility itself. In this sense, the touristified area becomes a biopolitical landscape where movement of residents, workers, and tourists is selectively enabled or constrained. The following section focuses on these (im)mobilities.

### *Ordering (Im)Mobility*

The touristification landscape concept is especially helpful to analyse how power determines who moves, who stays, and how these flows are governed. Our findings illustrate how “everyday bodily politics of moving through and occupying space and place” (Alderman, 2018, p. 718) unfold across neighbourhoods under different configurations of touristification and gentrification.

In Koukaki, a formerly residential now heavily touristified area, a high-mobility regime imposed by touristification emerges with long-term and newer residents coexisting amid a significant outflow of locals, echoing Gourzis and colleagues (2022). Kerameikos, where gentrification preceded touristification, shows a different configuration - most respondents moved in within the past decade, reflecting earlier waves of marginal gentrifiers. In Kamara, a less consolidated touristification landscape, residents

displayed greater stability (average residence of ten years), suggesting that intensified mobility is yet to come.

Across all three sites, the growth of short-term rentals (STRs) intensifies these dynamics by producing imposed mobility that affects locals, tourists, and capital alike. Both our data and existing research indicate an inverse correlation between STR density and housing affordability. Touristified areas face dual displacement pressures: housing withdrawal from the long-term market for STR conversion and rent increases beyond residents' means. Rent hikes were most pronounced in Koukaki, moderate in Kamara, and lower, yet still burdensome, in Kerameikos. Housing precarity orders and constrains mobility, forcing relocation in a search of a new (affordable) home and neighborhood, while trapping others who cannot move within the wider touristified context. Hosts engaging in the "sharing economy" indirectly exacerbate this situation by catering to tourists and transient workforce, thereby inflating rents and property values (Gourzis et al., 2022). This reflects a biopolitical mechanism of touristification in which many are effectively "let homeless" - rephrasing of Foucault's 'let die' - so that markets and elites may profit. Additionally, as neighbourhoods transform, long-term residents increasingly perceive them as unattractive, intensifying the desire - or necessity - to leave, as evidenced in Koukaki. To sum up, the local population -except for the hosts - who "constitutes the local experience" for Airbnb-led tourism is excluded and penalized by the place-branding imaginaries that promote their neighbourhoods to visitors.

Our survey responses confirm that these pressures are widely perceived: half of all participants observed the displacement of local populations in recent years, while one in four noted the influx of affluent Greeks and foreign nationals. The demographics among "incomers" also aligns with the landscape type. In Koukaki, expectedly, participants pointed to affluent foreigners - and to a lesser extent affluent Greeks - as "invaders" attracted by the landscape tailored for their needs. In Kerameikos, affluent Greeks were the dominant demographic of the inflows followed by transnational residents, while Kamara reported weaker inflows overall, but residents indicated both affluent Greeks and foreigners. Residents widely associated STRs with rising rents and property prices, leading to reduced housing availability and affordability and, consequently, the involuntary displacement of local populations. However, the responses regarding the impact of STRs in each area depended on the stage of touristification: in Koukaki and Kerameikos most residents viewed them negatively, while in Kamara one in four did not notice their impact. Whereas gentrification typically entails class-based replacement, touristification tends to cause depopulation of an area from local population (Sequera and Nofre, 2020), though recent work points to hybrid forms exhibiting traits of both and in fact, that tourism development reinforce transnational gentrification (Cocola-Gant and López-Gay, 2020). These forms of mobility are not confined to housing but intersect with other lie domains like labour, education and social life.

Beyond localized effects, touristification and STRs contribute to broader housing precarity. Housing mobility, is shaped by a biopolitical ordering in which housing precarity cuts across labour statuses and housing conditions. The rent and housing costs hikes, landlord pressure, as well as the social, cultural and material transformation of the touristified areas exacerbate housing insecurity and dissatisfaction pushing

residents towards relocation or trapping them in their current unsatisfying situation amid a lack of affordable alternatives.

### *Labour in and beyond touristification landscape*

The direct interrelation between labour and tourism has been extensively documented in studies examining the precarious conditions faced by hospitality and catering workers in diverse contexts. Indicatively, Gourzis and colleagues (2019a) propose a theoretical framework linking gentrification to precarious labour conditions. Gourzis and his colleagues' subsequent empirical work (2022) further destabilizes the prosperity myth surrounding STRs as job generators, showing - through interviews with hospitality and food service workers in Athenian neighborhoods - that these constitute, in reality, threats to labour conditions. Similarly, Watkins (2024), highlights how revitalization projects in tourist destinations often marginalize service workers, despite their central role in maintaining the symbolic and material infrastructure of tourism-led urban imaginaries. This study, however, shifts attention to how housing and labour precarity intertwined within the touristification landscape.

Although our participants represent a relatively privileged labour group, nearly half face some form of labour precarity and in particular intensification. This pattern aligns with a biopolitical reading of touristification, wherein productivity is maximized not solely through disciplinary mechanisms, but through governing life itself (Foucault, 1979). In a biopolitical landscape, Labour becomes a site of the 'micro-physics of power' - a terrain where bodily utility and political docility are carefully regulated. The ordering of the touristification landscape interweaves different life domains of the population in a way that they can be as compliant as possible or otherwise excluded, to make space for people that are willing to submit.

A biopolitical ordering of mobility linking housing and labour is evident in the strong association between intensified work and spatial distance from workplaces. In our study areas, over half of respondents work outside their residential area or even the city with many lacking a stable job base altogether. This is a significantly higher percentage than the national average for Greece ( $\approx 35\%$ ) and those for Athens ( $\approx 30\%$ ) and Thessaloniki ( $\approx 20\%$ ). This contrasts broader trends showing an increasing proportion of people working in proximity to home. This spatial mismatch reflects broader dynamics of labour precarity and the erosion of traditional proximities between home and workplace noted in gentrification research (Stein, 2015; Gourzis et al., 2022; Maloutas, 2020). In both cities, inadequate and unreliable public transport further exacerbates these pressures, disproportionately affecting lower-income populations without private means of transportation (for transportation and class see also Sanborn, 2018; Watkins, 2024). Commuting, thus, becomes a form of imposed mobility - an embodied expression of the spatial ordering of the touristified city- that distresses the everyday life of the less privileged population putting pressure on both housing and labour conditions. Indeed, changing the place of work has been used as a form of pressure for workers to resign in sectors like warehouses, malls, and supermarkets (Gourzis et al., 2022). These conditions exemplify how biopolitical rationalities - especially in the context of Greece's

protracted financial crisis - are deployed to govern populations through the normalization of intensified demands on bodies and time (Mavelli, 2017).

Although the study does not explicitly centre on the direct impact of touristification on labour precarity, responses from 13 STR hosts allow for a brief reflection on the STRs as a job. Several hosts turned to STR activity to cover housing costs rather than for entrepreneurial gain or better work conditions, using it as a resort amid housing difficulties and insufficient income. Simultaneously, non-host residents who view STRs negatively, aspire to become hosts, highlighting the desperation they face financially in the housing market. This reveals a recursive dynamic in which housing and labour precarity are mutually reinforced. This aligns with Gourzis et al. (2022), who argue that STR expansion undermines labour conditions in the hospitality and service sectors of Athens.

A further manifestation of landscape-induced precarity concerns what we identify as *marginal gentrifiers*: recent, highly educated residents employed in creative or knowledge-based sectors facing dual precarity in the context of touristification. Combined with secondary data, we observe a proliferation of high-skilled and higher status workforce in the centers of the two cities, being attracted to the landscape on offer. Despite their socio-cultural capital, many navigate insecure labour conditions and unsatisfactory or stressful housing situation. Their particular situation exposes the contradictions of neoliberalism where even those embodying its ideals of education, lifestyle, consumption patterns face intensifying labour and declining living standards.

To sum up, the biopolitical ordering of touristification regulates the right to space and mobility - displacing or excluding lower-income residents while facilitating the circulation and exploitation of more affluent or transient populations until they too are rendered expendable. Access to housing, services, and urban infrastructures actively produces material and symbolic boundaries, producing differentiated rights to enter, remain, or be displaced and even erased within the touristified city.

## Conclusions

The two complementary studies presented in this report highlight the multifaceted impact of touristification on housing and labour precarity across Greece's two largest Metropolises. Together, they contribute to critical tourism studies, labour geography, political studies and political economy by applying innovative theoretical and conceptual frameworks and diverse methodologies to examine how tourism-driven urban transformations reshape housing, work, and everyday life at both the city and neighbourhood level.

The first study investigates the relationship between housing precarity and STRs' growth, within the underexplored context of Greece. Its strength lies in the use of secondary and Big Data analytics that together reveal the dynamics underpinning this relationship. The second study's originality derives from its eclectic conceptual framework, informed by global political economy and political theory. Its empirical part is also particularly robust, combining secondary data with questionnaire-based fieldwork to capture

how touristification constitutes a biopolitical landscape that orders everyday life and in particular, housing and labour conditions.

Findings from both studies confirm the interdependence of short-term and long-term housing markets. Despite their complex nuances and lack of causal effects, the evidence indicates that the expansion of STRs intensifies housing precarity by driving up rent and displacing local population but also other productive uses (e.g., urban manufacturing; Gourzis et al., 2022; Pettas, 2024). This in conjunction with declining homeownership rates in Greece and its major metropolitan areas exacerbate housing inequality (Adamopoulou et al., 2025).

Since 2017, the rapid growth of the short-term rental market has contributed to reversing housing price declines and attracting foreign investment, especially through the Golden Visa program. The comparative analysis of Athens and Thessaloniki reveals distinct spatial patterns of STRs and their correlation with the respective residential markets. In Thessaloniki, STR activity remains concentrated in central tourist areas, whereas in Athens it is more dispersed, spanning across diverse neighbourhoods of varying social status. The Athenian STR geography reveals a more mature and complex stage of touristification, including also emerging trends such as medical tourism and digital nomadism. Spatial regression analysis further demonstrates that Airbnb density significantly influences residential rents in both cities, with pronounced spillover effects, especially in Thessaloniki.

The mixed-method fieldwork further reveals that the state and the market, through the processes of urban redevelopment, STRs, and precarious labour regimes, continuously reorder everyday life and ultimately, displace those unable to cope with the pressure imposed by tourist economies. In the four areas under study, distinct “touristification landscapes” emerged, according to the intensity of housing unaffordability, forced (im)mobility, and labour precarity. These findings underscore the interweaving of housing and labour precarity in the touristified urban environment through increasingly unstable home-work relations.

The detrimental impact of STRs on housing markets is now widely acknowledged, as demonstrated in the first part of this report. Public pressure has prompted also the Greek state to adopt measures in order to mitigate these effects. Since 2025, STRs have been subject to new and stricter regulations, including a maximum booking duration of 59 consecutive days, higher taxation for hosts operating more than two listings, and a ban on new listing’s registrations in certain central Athenian areas - among them, the neighbourhoods we examine in this study. Furthermore, since October 1st, 2025, STRs must comply with higher property standards closer to those applied to hotels and other licensed vacation rentals, excluding many unqualified listings.

However, these interventions remain insufficient to reverse the established and ongoing processes of gentrification and touristification that are transforming Greek cities and rural areas. Thus, policy responses are urgently required to support residents in securing stable and adequate housing. Addressing housing precarity could, in turn, help alleviate some of the labour precarity identified in this research, as

the two are deeply intertwined. At the same time, recent changes in labour legislation (e.g., Law 5239/2025) have rendered labour conditions further intensified, flexible and precarious, undermining workers' rights. Even though these legal changes may appear irreversible, they must remain subject to criticism and scrutiny as well as collective resistance by a workforce increasingly exposed to precarious and exploitative conditions.

Tourism as an economic and political strategy reconstructs places and lives through the exercise of power over space, bodies, technologies, and social relations. In the process of touristification, areas are voluntarily offered for tourist consumption by the state and the market, while simultaneously being violently grabbed away from the locals. The touristified landscape functions as a temporary site for capital's "continuous and sometimes disruptive geographical adjustments and reconfigurations" (Harvey, 2001, p. 27). Thus, to paraphrase Rose (1999), if space is a verb, so too is a landscape, as it is continually produced and restructured by financial interests, processes, conflicts, and imaginaries that define social interactions, housing, and labour. However, the fixed capital in the touristified landscape will be ultimately devalued by its own success: as overexploitation will erode the natural, built and cultural environment that attracted the tourists initially. By then, the capital will have relocated in another disruptive activity and/or place abandoning deeply transformed and drained places and local populations. The touristified enclaves are turned into an empty shell where even - or especially - locals can no longer sustain a life, validating the biopolitical imperative "tourism must be defended" at the expense of people's wellbeing.

Tourism and STR expansion are increasingly recognized as a threat to the wellbeing of local population, impacting not only housing and labour but also the right of movement within touristified areas. As noted by Greece's Deputy Minister of Migration in 2021, Sofia Voultepsi, tourists' spatial rights should be prioritized over residents' everyday needs revealing the broader contradictions and hierarchies of a tourism-dependent economy (Avgi, 2021). As long as national economic growth remains tied to the "monoculture of tourism," the state and the market will continue to brand places as tourist products for consumption at the expense of those who inhabit it. A shift of priorities is urgently needed - one that places local populations' needs and rights above profit imperatives by protecting housing, labour, and everyday life against the extractive logic of overtourism and neoliberal politics.

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