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Abstrakt (deutsch)

Als weltweit beliebteste Kurzzeitvermietungsplattform hat Airbnb nicht nur die Art und Weise verändert, wie wir reisen, sondern wird auch weltweit als eine der Hauptursachen für die negativen Auswirkungen des zunehmenden Tourismus auf städtische Nachbarschaft angesehen. Eine Reihe von Städten haben demnach Vorschriften erlassen, um das Geschäftsmodell der Kurzzeitvermietung einzudämmen, meist mit mäßigem Erfolg (C. Colomb and Moreira De Souza 2021). Viele Forscher haben sowohl die Auswirkungen von Kurzzeitvermietungen als auch die Wirksamkeit von Vorschriften in touristisch geprägten Regionen, Städten und Stadtvierteln untersucht, liefern aber oft nur wenige Ergebnisse auf Mikroebene. Dies hängt insbesondere mit Einschränkungen der verfügbaren Datensätze zusammen.

Um diese Lücke zu schließen, bietet diese Studie eine detaillierte Analyse öffentlich zugänglicher Geodaten, die aus 495 aktiven short-term-rental Listings im Berliner Stadtteil Friedrichshain bestehen. Die Inserate werden hinsichtlich der Einhaltung der Vorschriften des Berliner Zweckentfremdungsverbotsgesetzes untersucht und gezeigt, welche Rolle illegale und professionelle Inserate auf dem lokalen Immobilienmarkt spielen. Durch die Analyse von nutzergenerierten Bildinformationen ist es zudem gelungen, 375 short-term-rental Apartments im Untersuchungsgebiet genau zu lokalisieren und zu untersuchen, welcher Gebäudebestand betroffen ist. Darüber hinaus wird für 61 Angebote aus dem Datensatz untersucht, inwieweit die Rent Gap Theory von Neil Smith (1979) eine ökonomische Erklärung für die Nutzung Verbreitung von short-term-rentals bietet.

Die Untersuchung zielt also grundsätzlich darauf ab, Wissen über das Phänomen der Kurzzeitvermietung auf der Mikroebene zu generieren, und bietet einen Ausgangspunkt, um genauer zu untersuchen, warum trotz Regulierungen neue Anbieter in den short-term-rental Markt eintreten können. Darüber hinaus bietet die Arbeit aufschlussreiche methodische Erkenntnisse, die für Forschungsprojekte mit ähnlichen Datensätzen von Bedeutung sind.

Abstract (english)

As the world's most popular short-term rental platform, Airbnb has not only changed the way we travel but is also widely regarded as one of the main contributors to the negative impacts of growing tourism on urban neighborhoods worldwide. As a result, several cities have implemented regulations to curb the short-term rental business model, often with moderate success (C. Colomb and Moreira De Souza 2021). Many researchers have studied both the effects of short-term rentals and the effectiveness of regulations in tourist-driven regions, cities, and neighborhoods, but often provide limited results on a micro-level due to constraints in available datasets.

To address this gap, this study presents a detailed analysis of publicly available geospatial data comprising 495 active short-term rental listings in the Friedrichshain district of Berlin. The listings are examined for compliance with the regulations of Berlin's Zweckentfremdungsverbotsgesetz (ZwVbG) and demonstrate the role of illegal and professional listings in the local real estate market. Through the analysis of user-generated image data, the study successfully pinpoints and investigates the locations of 375 short-term rental apartments within the study area, shedding light on which building stock is affected by short-term rental activities. Furthermore, the study examines 61 listings from the dataset to explore the extent to which Neil Smith's (1979) Rent Gap Theory offers an economic explanation for their use as short-term rentals.

In essence, the investigation aims to generate insights into the phenomenon of short-term rentals at a micro-level, providing a starting point for a more in-depth examination of why new providers can enter the short-term rental market despite regulations. Additionally, the study offers valuable methodological insights relevant to research projects utilizing similar datasets.

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1. Introduction

My first apartment after finishing school was located on Torstraße in Berlin-Mitte. Two houses down, there was a building that could be quite easily identified as an apartment building by the typical elements such as guests with suitcases, key boxes next to the entrance door, or occasional noise during night. This former residential building mainly attracted young tourists and provided them with a place to stay while they explored the city. I was not particularly bothered by it, and the occasional noise didn't bother me much either; my street was noisy anyway. I only truly noticed the house when I started looking for apartments again a year later as I prepared to move out. It was at that point, when I personally experienced how difficult it was to find housing in Berlin, that I began to question things. How can it be that a house in this location is reserved for tourists? Why don't people just go to the hotel across the street? Is this even legal?

It was at this point that my interest in short-term rentals and urban tourism in general began. It is worth noting that I approached Airbnb's business model with a critical but not entirely rejecting attitude. I myself – and here comes the confession – use Airbnb when I go on vacation and prefer to stay in private homes rather than impersonal hotels. Additionally, this type of travel has grown alongside my own coming of age. In short, I belong to the Airbnb generation.

However, in view of my role as an urbanist and the unmistakable excesses of Airbnbization that I observed in several of my subsequent places of residence, I decided to make this topic my focus in this thesis and examine it more closely. The main focus of this research is essentially on the question of how the short-term rental offer comply with existing regulations aimed at limiting this business model and how the short-term rental market is spatially distributed on a micro-scale level. Starting with these questions, I delved deep into the topic of short-term rentals, and this work is an attempt to bring together and present my findings. The research is based on a publicly available dataset provided by the website inside Airbnb, which was exploratively analyzed.

In the first part of this work, I explore the global phenomenon of urban tourism, the role of the globally operating platform provider Airbnb, and then zoom in to the city and neighborhood levels where the effects of this interplay become apparent. This part ends in Berlin, within which the Friedrichshain neighborhood, the subject of this study, is located. Following that, in the methodological section, I describe how the data was obtained, processed, and analyzed. I then introduce the study area and zoom in further to the level of buildings and apartments where the practice of short-term rentals takes place. Finally, the results are summarized and discussed, and reference is made to open questions that have remained unanswered in the course of this research.

2. Literature Review

2.1. Emergence of New Urban Tourism

2.1.1. Urban Tourism – a Global Phenomenon

The boom of urban tourism is of multi-causal nature, with global and supranational trends of the past decades playing a determining role. These trends extend beyond the sphere of influence of individual urban or even national administrations. Examples include the liberalization of transportation markets, such as the U.S. and European aviation markets in the 1970s and 1990s, respectively (Abate and Christidis 2020; Dobruszkes and Wang 2019). In the European context, the liberalization of individual long-distance train and bus markets, accompanied by the entry of budget providers and a general increase in travel connections, has also been relevant (Blayac and Bougette 2023). The implications of European integration, including visa-free travel for EU citizens and the introduction of a common currency, have significantly facilitated the growth of intra-European tourism (Åkerhielm, Dev, and Noden 2003). Globally, the growth of the middle class also played a crucial role in this, particularly evident in countries such as China, where the middle class grew by 300 million people between 1980 and 2010, creating a potential tourist group roughly as large as the entire population of the U.S.A. (Sicular, Yang, and Gustafsson 2021).

However, the urban tourism boom is also linked to a global shift towards "*urban entrepreneurship*" (David Harvey 1989, 4) in the latter half of the 20th century. According to this perspective, administrations increasingly manage their cities in an entrepreneurial manner, aiming to attract international capital and generate growth. Within this neoliberal market logic, cities are pushed into international competition (ibid., 11), striving to defend or enhance their position within a global metropolitan hierarchy (Fainstein, Hoffman, and Judd 2003). In a globalized world, tourism becomes one of the flows that connect cities and regions.

Driven by the assumption that tourism benefits not only individual businesses but also holds city-wide economic potential through increased tax revenue and job creation, growth coalitions in many cities implement a variety of strategic approaches to promote tourism (Peter E. Murphy 1992; Grube 2023). These approaches align with broader growth-promoting measures encompassed under the term "new urban policy" (Levin 2002, 6) or boosterism (Halkier 2013; David Harvey 1989; Hall and Hubbard 1996).

Many of these strategies are applied by numerous administrations for tourism promotion through a copy-paste approach. City marketing is one such strategy, where urban administrations often collaborate with private actors to promote their cities on the international stage (Ashworth and Page 2011a). A central element is giving the urban environment an attractive image and marketing it as an experiential destination, primarily targeting tourists (ibid.). Hoping to replicate successful strategies like the "*I Love NY*" campaign

launched in 1976, through which the US metropolis transformed its image from a crime hotspot to a cosmopolitan international hub (Greenberg 2003), nearly every city today pursues similar strategies (Bramwell and Rawding 1996).

Outward marketing and image creation are coupled with strategies to enhance attractiveness through often architectural measures within cities. These often involve creating new experiential and consumption spaces and places of cultural production. While not solely aimed at meeting tourist needs, tourists remain a central target group of this planning (Selby 2004). In this context, there's an observable trend towards festivalization of public urban spaces, with more dominant spatial mega-events with international appeal and magnetism (Vita 2022; Pinson and Morel Journal 2016; Short 2011; Harvey 1989). This development is complemented by the creation of less dominant forms as well. Galleries, restaurants, nightlife economy venues, and a multitude of other subtler spaces also arise, supporting the creation of urban experiential spaces on a smaller scale (Jakob 2013; Crewe and Beaverstock 1998; Zukin 2008).

Such policies of „*festivalization*“ (Häussermann 2013, 7) and the diverse possibilities of creating spaces for consumption and cultural production are closely related to urban regeneration processes. Particularly, cities with former industrial characteristics find attractive opportunities to repurpose once-industrial areas and compensate for economic losses from deindustrialization through new tourist attractions (Bramwell and Rawding 1996). The success of prominent projects, such as the Guggenheim Museum in Bilbao, Spain, which opened in 1997 and led to an image transformation and economic revenues, prompted a boom in tourism-based urban regeneration projects (Del Cerro Santamaría 2019). While the actual success is often moderate, numerous cities worldwide adorn themselves with artfully decorated art and cultural temples designed by renowned architects, hoping to become the next art mecca on the map (ibid.).

Another crucial aspect in the agenda for promoting urban tourism is the elaborate expansion of mobility infrastructure by urban and interurban decision-makers. This includes the expansion or construction of airports and rail networks. Between 2000 and 2016 alone, more than a third of the world's 155 largest airports were expanded or replaced by airports with higher capacity (Dray 2020).

It can be observed that the global upswing in urban tourism is the result of a complex interplay of global trends in demography, socioeconomics, mobility, and a wide range of strategic tools for promoting tourism by local city administrations. While these strategies are not solely tied to tourism, the strong connections are undisputed, especially given the surge in tourists over the past decades, which was briefly interrupted only by the Covid-19 pandemic (Maxim 2021).

2.1.2. New Urban Tourism and Neighborhood Effects

The impacts of tourism as an *"engine of urban development"* (Kowalczyk-Anioł 2023, 1) can often be observed at a smaller scale within cities. In numerous city centers, it can be seen how urban spaces have been adapted to the perceived needs and expectations of tourists. The creation of tourist accommodations, shopping opportunities, as well as leisure and cultural offerings in close proximity to historical attractions, mostly in central urban areas, follows a similar pattern in many places. Such tourist-focused urban areas function as *"stages within which locals and tourists are embroiled in a rather systematic, socially cleansed performance of urban public space that is choreographed to stand comparison with competitor stages in other towns and cities, at home or abroad"* (Mordue 2017, 400). Consequently, the tourist quarters of different cities tend to resemble each other, resulting in the fact that the unique characteristics of a city and the specific lifestyles of its residents are not adequately represented or only minimally represented in these areas. Yet, it is precisely these urban characteristics that many tourists seek in their travels. Maitland and Newman (2009) note in this context that tourists are increasingly venturing beyond traditional, culture-oriented downtown areas to seek authenticity in less touristy residential neighborhoods (Maitland and Newman 2009). Consequently, the phenomenon of *New Urban Tourism* leads to an increasing spatial decentralization of tourist flows (ibid.).

As a result, *New Urban Tourists* are key actors in the creation of new tourist places within affected neighborhoods. Consequently, neighborhood transformation processes are initiated, often with negative impacts on the local population (Sommer and Stors, 2021). Apart from traditional tourists, these developments are favored by a growing internationally mobile population of newcomers or short-term residents, as well as their visitors, including day-trippers and other temporary city users (C. Colomb and Novy 2016). In the context of *New Urban Tourism*, there is also an observed blurring of the boundaries between tourists and residents (ibid.).

Researchers typically refer to transformation processes associated with growing tourist activities as *"touristification"* (Stock 2003, 3) a term with a broad range of definitions. Primarily, *touristification* describes the transformation of a place into a tourist destination (Stock 2003, 3). As such, both the creation of tourist experience sites in urban areas and changes in traditional residential neighborhoods resulting from *New Urban Tourism* fall within the scope of touristification. However, Novy (2019) points out that the term is nowadays used mainly in the context of neighborhood changes in global cities undergoing rapid transformation due to *New Urban Tourism*, with many cases exploring parallels and connections with *gentrification* processes (Novy 2018, 424). It's important to note that *touristification* and *gentrification* are not identical; although they often spatially overlap.

While *gentrification* describes urban upscaling processes based on the influx of wealthier residents and businesses, leading to the displacement of long-standing residents, the term *touristification* is frequently associated with transformations that include a significant decline in quality of life for inhabitants of affected neighborhoods. This decline may arise due to factors like increased litter and noise pollution, causing these neighborhoods to lose their attractiveness as places to live (Cheung and Yiu 2022). In such cases, the term "*overtourism*" (Veríssimo et al. 2020, 157) is often used, attributing negative effects to unregulated tourist development, resulting in overuse in affected neighborhoods (ibid.). This overuse stems from the observation that "*tourists make an intensive use of many urban facilities and services but little of the city has been created specifically for tourist use*" (Ashworth and Page 2011b, 1).

Parallels between *gentrification* and *touristification* are often recognizable through changes in the commercial structure of neighborhoods (Novy 2018). In neighborhoods undergoing either *touristification* and/or *gentrification* processes, changes in commercial structures often entail the replacement of everyday necessities such as supermarkets, pharmacies, or bakeries with high-priced galleries, coffee shops, bars, or souvenir shops. This narrows the neighborhoods' function as places of residence, particularly affecting low-income individuals (ibid.). Especially in smaller heritage cities like Venice, the negative consequences of increasing *touristification* became evident early on (van der Borg, Costa, and Gotti 1996). Nonetheless, city administrations persisted in large-scale tourism-promoting strategies (ibid.). Furthermore, it is observed that political decision-makers, planners, and city marketers are no longer limiting experiential planning and development to large-scale urban projects, but are extending experiential planning to neighborhood-oriented development projects as well (Jakob 2013).

Particularly, Gotham's (2005) observations have led to the realization that neighborhood transformation processes like *touristification* and *gentrification* not only spatially overlap but can also mutually reinforce each other (Gotham 2005). Using the Vieux Carré in New Orleans as an example, he describes the process of *tourism-led gentrification*, where rising rents and displacement processes are particularly attributed to changing international capital flows in the real estate market, linked to tourism activities. By creating a consumption-oriented entertainment district, internationally operating companies establish an urban space where they can generate the highest profits. This, in turn, attracts a wealthy international visitor base and sustainably alters consumption patterns and the local economic structure of the neighborhood (ibid.). Entertainment and tourism thus drive up rents and fuel spatial displacement processes in formerly working-class neighborhoods. This process of *tourism-led gentrification* has been subsequently observed in numerous neighborhoods in Berlin (Füller and Michel 2014), Barcelona (Cocola-Gant 2023), and other cities.

With the displacement of residents and local commercial structures, as well as the creation of interchangeable tourist infrastructure, affected neighborhoods sometimes lose societal life and thus their individual charm and authenticity (ibid.). It holds a sad irony that the loss of neighborhood authenticity accompanies the very reason these neighborhoods were chosen as places for *New Urban Tourism* in the first place.

Such tourism-induced neighborhood transformation processes increasingly encounter a local population plagued by frustration and concerns about the future. In many affected cities, there is a growing formation of neighborhood initiatives and other local groups that publicly express their opposition to tourism (Cocola-Gant, 2023). While some use the term *tourismphobia* (Almeida-García, Cortés-Macías, and Parzych 2021; Milano 2018) to describe this public rejection of tourism, others reject it, arguing that the use of the term undermines the legitimate claims of affected residents for social and ecological compatibility (Blanco-Romero et al. 2019).

In any case, the opposing stance of many residents is closely linked to questions about the beneficiaries and losers of growing urban tourism. While residents and local businesses of affected neighborhoods experience the negative externalities of urban tourism, it is typically internationally operating companies that benefit (Flyvbjerg 2012, 107). These companies often have tourism-promoting measures paid for by their clients, the urban administrations, or generate profits from ticket sales, hotel bookings, or other value chains (ibid.). While the local population may benefit from increased investment in urban renewal, heritage preservation, new events, or the expansion of transportation systems (Paskaleva Shapira, 2000), these gains seem often small consolation in comparison to the loss of neighborhood structures.

2.2. Airbnb's Global Eruption

2.2.1. Platform Economy

Few companies embody the developments described in relation to the urban tourism boom as much as Airbnb does. Airbnb is a beneficiary of urban tourism and has significantly shaped it as a powerful actor. While popular among travelers, the company is also a target of numerous neighborhood initiatives and city administrations worldwide. To understand Airbnb's business domain of short-term rentals, one must first provide an overview of the overarching field of the platform economy, whose global growth since the early 2000s has led to significant changes in almost all sectors of the economy, including tourism (Zoltan 2023).

The platform economy refers to economic models where individual products or services can be offered and purchased through digital marketplaces (Heiland 2018). Companies and other providers create digital platforms where suppliers and consumers can connect and engage in peer-to-peer transactions. Platform operators typically profit from low-percentage fees collected from transactions conducted through the platforms, as well as advertising revenue or the use of customer data. These profits are often more substantial than those of traditional providers (Stefanović 2021). They particularly benefit from the increasing digital connectivity and contribute to it in turn (Zoltan 2023). Within a short period, online platforms have emerged that have transformed established economic structures and value chains, characterized by higher efficiency and reach compared to traditional structures. In many cases, their business models are spatially represented (Heiland 2018).

The concept of platforms was initially closely linked to the sharing economy, defined as an *"IT-supported peer-to-peer model for the commercial or non-commercial sharing of underutilized goods or service capacity through an intermediary without transferring ownership"* (Schlagwein, Schoder, and Spindeldreher 2020). The emphasis here is on increasing utilization through collective sharing. This approach has sometimes been associated with hopes of more sustainable resource use and increased social participation of disadvantaged societal groups (Costantini 2015). Over time, however, it has often been realized with disappointment that especially privately operated platforms frequently pursue exploitative economic models driven by a capitalist market logic. They can contribute to digital divides in society and often create worse economic conditions for users than the traditional market (ibid.; De Stefano 2015; Heiland 2018). The acclaimed sharing ethos has proven to be a farce in many cases. The rapid expansion of many such digital platforms is closely linked to the fact that many aspects of their economic activities were initially poorly regulated after entering the market. This is partly because they often operate globally as networks and don't conform to traditional legal categories (Meenakshi 2023). The STR platform Airbnb falls into this category and is a prime example of how, even a decade and a half after entering the market, many administrations are still searching for appropriate regulatory tools to deal with the platform.

2.2.2. Airbnb

2.2.2.1. Historic Development

Amidst the rising wave of platformization, participants have entered the market that have revolutionized sectors closely tied to tourism, such as mobility, travel planning, and dining (Pforr et al. 2021). Among these are newly established opportunities for short-term accommodation rental, which have proven particularly attractive within the tourism sector (Reinhold and Dolnicar 2021a).

Founded in San Francisco in 2008, Airbnb emerged from the idea of two college graduates who had previously rented out three air mattresses in their apartment to conference attendees in the city the year before (Guttentag 2015a). Unlike other STR services like hotels, Airbnb doesn't own rooms. Instead, the service focuses on offering an internet-based platform that facilitates peer-to-peer interactions between hosts interested in renting out private living spaces and guests seeking short-term accommodations (Reinhold and Dolnicar 2021b). In the years following the platform's launch, Airbnb expanded at an impressive pace. Just 13 years later, it was active in over 100,000 cities in more than 220 countries and listed over 5.6 million offerings on its website (Pforr et al. 2021). According to its own statements, by 2023, the platform had hosted more than 1.5 billion guests in private accommodations across more than 100,000 cities globally (airbnb.com 2023a).

The only setback in the otherwise steep upward trajectory of the company was the global Covid-19 pandemic, during which the global tourism industry came to a virtual standstill due to border closures, flight cancellations, and worldwide travel and contact restrictions. In the first year after the outbreak of the pandemic, there was a decline in short-term rental offerings of up to 25percent in European tourist cities (Gyódi 2021). Highly tourist-dependent cities like Rome or Barcelona experienced booking drops of around -40 percent (Liang et al. 2021). The fact that Airbnb rentals did not come to a complete halt is attributed, among other factors, to private hosts adapting to restrictions by offering spaces for office use instead of tourist stays. It is argued that Airbnb was able to benefit from trends like remote work, even amidst an otherwise dramatic economic environment, in comparison to traditional providers such as hotels (Gyódi 2021, 26; Savitz 2021).

Although "*Covid-19 has disrupted the disruptor Airbnb*" (Dolnicar and Zare 2020a, 3), a highly successful initial public offering in December 2020, higher corporate profits than ever before, and a surge in worldwide listings until 2021 to nearly pre-Covid-19 levels (Gerwe 2021) suggest that growth was only temporarily stalled.

The reasons for Airbnb's „*global eruption*“ (Buglaski 2020, 4) can mainly be attributed to its appeal on both the supply and demand sides, as well as the functionality of the platform. Guttentag (2015) attributes to Airbnb the character of a disruptive innovation, characterized by offering a certain product cheaper, simpler, smaller, or more convenient than traditional

providers (Guttentag 2015b). By creating new value propositions and advantages over traditional providers, the new entrant can establish itself in the market and partially or fully replace previously dominant products (Christensen 1997).

The platform created value propositions, particularly for tourists seeking authentic experiences. For them, it provides an opportunity to satisfy this craving by staying in the home of local hosts. Additionally, the benefits over other tourist accommodations often include lower costs, more space, access to household amenities, and direct interaction with locals, which can instill a positive feeling among tourists of supporting locals through their stay (A. J. Kim et al. 2019). On the supply side, the platform is attractive primarily because it offers hosts an uncomplicated way to rent out underutilized space and generate additional income (Guttentag et al. 2018).

2.2.2.2. *Functionality*

Potential hosts can initially register for free on the Airbnb website and create one or more listings containing information about a room or apartment available for rental. Detailed information about the location, amenities, the host, and house rules can be provided. Additionally, availability and pricing for a night's stay are entered, and the listing is typically visually described through images of the corresponding accommodation. Guests can navigate through the offerings and narrow down their search using search filters, even without registering initially. These filters allow guests to refine their search based on availability, amenities, price ranges, room type (entire home/single room/shared room/hotel), and other attributes. The final booking and payment are completed after the guest's successful registration and are entirely processed through the platform, with Airbnb retaining a service fee. After a successful arrangement and stay, both the guest and host can review each other, and these reviews are then visible to all other users on the listing or profile pages on the Airbnb website. (airbnb.com 2023d)

If hosts decide they no longer want to offer their living space, individual listings or entire profiles can be deleted. Alternatively, Airbnb offers the option to temporarily snooze or unlist listings. Corresponding listings would no longer be visible on the website but can be reactivated at any time, without the need to re-enter the information (airbnb.com 2023c).

2.2.2.3. *Professionalization*

Scholars like Bugaski (2020) argue that the benefits on the supply side of the service are attractive not only to individuals but also to institutional providers. These entities have emerged as users of the platform shortly after its inception and have significantly contributed to the global eruption of the service (ibid.). In some cases, living spaces are acquired by financially capable actors as buy-to-let investments, with the aim of permanent short-term rentals, and are exclusively offered through the platform (A. J. Kim et al. 2019). short-term rentals are understood as an attractive business model, as it generally allows for more capital

to be generated than through renting out the concerned apartments on the regular housing market (Gant 2016). More and more hosts are listing multiple offerings simultaneously, and it is clear that with such multi-listings, the social interaction between host and guest, as well as the authentic vacation experience of the guest, are no longer at the forefront (Demir 2021, 483).

As a result of this trend, *professionalization* on the provider side is evident, identified as common practice in numerous cities on the short-term rental market. These tendencies are most pronounced in tourist-centric city centers like Madrid, where 80 percent of offered short-term rentals are attributed to professional actors (Gil and Sequera 2020). Similar observations exist in cities such as London (Simcock 2021a), Paris (Heo, Blal, and Choi 2019), and numerous other cities. Furthermore, during the Covid-19 pandemic, the trends toward *professionalization* seem to be intensifying. For instance, providers are targeting temporary urban residents who cannot be categorized as either locals or tourists (Sequera et al. 2022). The platform itself is increasingly seen as an active participant in this *professionalization*. Airbnb, for example, has opened its platform to providers from the traditional hotel industry in recent years (Bosma 2022). This way, hotels and other traditional accommodation establishments become central players on the platform, benefiting from Airbnb's reach, while the platform also earns a share of the hotels' earnings. Thus, an increasing dissolution of boundaries between the traditional accommodation market and the short-term rental market is to be expected.

It is worth noting that the original peer-to-peer sharing approach has largely shifted to a business-to-peer mentality (Bugalski 2020). Simultaneously, as a disruptive innovation, Airbnb has fundamentally transformed the way people travel and thereby influenced spatial transformation processes, particularly in the neighborhoods of the *New Urban Tourism*.

2.2.3. Airbnb as an Accelerator of Negative Neighborhood Effects

While the phenomenon of *New Urban Tourism* predates the Airbnb platform itself, there is now a widespread consensus among scholars and many city administrations that Airbnb and the practice of short-term rental exacerbate the negative neighborhood changes associated with *New Urban Tourism* (Nieuwland and van Melik 2020).

In the spatial distribution of short-term rentals within cities, similar trends can be observed in various cities. Although occasional expansion of short-term rental offerings can be detected in less touristy areas (Quattrone et al. 2016; Balampanidis et al. 2021), the majority of offerings are concentrated in a few centrally located and well-connected areas known for having a young, socioeconomically strong population (Colomb and Moreira De Souza 2021; Guttentag 2019; Quattrone, Kusek, and Capra 2022). Often, these affected areas also have a significant amount of traditional accommodation services, resulting in a spatial overlap of different forms of tourist accommodations (Gutiérrez and Domènech 2020; Quattrone et al.

2016). In this context, Amore et al. (2022) point out that processes of *touristification* and short-term rental offerings often mutually reinforce each other. On one hand, short-term rentals mainly emerge in neighborhoods that already exhibit tourist activities; on the other hand, the spatial concentration of short-term rentals can intensify and accelerate processes of *touristification* in neighborhoods (Amore, de Bernardi, and Arvanitis 2022, 3338). This process is not solely driven by the provision of living spaces. Short-term rental providers often actively promote the affected neighborhoods as experiential spaces, assigning them a tourist significance. In this sense, short-term rental providers become co-producers of new tourist destinations (Sommer and Stors, 2021).

Especially the long-term conversion of existing living spaces into short-term rentals as a consequence of the *professionalization* of numerous actors is seen as a reason for negative neighborhood effects (Simcock 2021). As a logical consequence of this practice, there is a reduction in available apartments on the regular housing market (ibid.). This fosters an imbalance between residents and tourists in affected neighborhoods, which drives changes in the local economic structure and can disrupt the provision of services for local residents, leading to deteriorated living conditions (Farmaki and Miguel 2022; Hernandez-Suarez et al. 2018). Importantly, these tourist activities not only intensify in public spaces but also lead to tourists and residents becoming direct neighbors, sometimes within the same building. This can result in conflicts, such as noise disputes, and the loss of neighborhood structures (Gant 2016). As a consequence of the declining supply of apartments on the regular housing market, in extreme cases, the resident population in affected neighborhoods can decrease (ibid.). Within the context of such a dominance of the short-term rental market, the term "*Airbnbization*" (Gil and Sequera 2020) is sometimes used to describe the process in affected neighborhoods.

The commodification of living spaces is particularly attractive for providers in the housing market because, generally, higher revenues can be generated from short-term tourist rentals compared to long-term rentals of the same living spaces on the regular housing market (Wachsmuth and Weisler 2018). This growing rental gap, according to Wachsmuth et al., offers an economic explanation for the spatial expansion of short-term rentals in cities. Their observations in New York City can be summarized as follows:

„[...] Airbnb has introduced a new potential investment flow into housing markets which is systematic but geographically uneven, creating a new form of rent gap in culturally desirable and internationally recognizable neighborhoods which have generally already been subject to extensive gentrification. This rent gap can emerge quickly—in advance of any declining property income—and requires minimal new capital to be exploited by a range of different housing actors, from developers to landlords, tenants, and homeowners“ (ibid., 1165).

Similar investigations have also been conducted in cities like Melbourne (Cheung and Yiu 2022) or Athens, Lisbon, and Milan (Amore, de Bernardi, and Arvanitis 2022), where the rental gap theory has been confirmed. The results indicate that short-term rental offerings often spatially overlap with *gentrification* processes, making the study of these interactions a significant focus of research. It should be noted that a consistent picture cannot be drawn. As seen in the examples of New York mentioned above, there is a growth in short-term-rental offerings in already gentrified neighborhoods; however, in other cities like Thessaloniki, it is clear that the practice of short-term rentals diverts capital flows into the real estate market, thereby initiating *gentrification* processes (Katsinas 2021). In yet other cities like Dublin, a connection between short-term rental offerings and *gentrification* is demonstrated, but it remains inconclusive as to which phenomenon favors the other (Rabiei-Dastjerdi, McArdle, and Hynes 2022). Amore et al. (2022) suggest that the specific interplay between *gentrification* and short-term rental offerings depends primarily on the individual size and significance of the respective affected cities as international tourism destinations, and this interplay can vary. It is important to note that the short-term rental market is generally not viewed as the sole cause of *gentrification* processes, but it typically contributes to them (Rabiei-Dastjerdi, McArdle, and Hynes 2022).

In this context, it is also crucial whether and how urban administrations regulate the practice of short-term rentals. The short-term rental market was largely unregulated in many cities for a long time, which allowed it to grow significantly as a favored informal tourism sector compared to traditional providers (Guttentag 2015). Numerous administrations have recognized the need for stronger regulation of the short-term rental market due to apparent negative impacts on urban neighborhoods and as a result of civil society protests against the practice (Morales-Pérez, Garay-Tamajón, and Troyano-Gontá 2022; Garay, Morales, and Wilson 2020; Farmaki and Miguel 2022; Nieuwland and Van Melik 2020; Colomb and Moreira De Souza 2021).

2.2.4. (De-)Regulation Approaches

Given that the practice of short-term rentals encounters unique conditions in each city, it is not surprising that there are no uniform solutions. Instead, a broad range of different instruments have been introduced by numerous urban administrations worldwide to restrict short-term rentals (Guttentag 2015). The works of Colomb et al. (2021) and Nieuwland et al. (2020) are particularly noteworthy in the context of regulatory approaches to the short-term rental market.

Colomb et al. (2021) provide an extensive study of various regulatory approaches in 12 European cities. One primary instrument used in most cities is the authorization or registration system, where short-term rental providers must either apply for a license with the relevant authorities or self-register online (40). This approach is primarily aimed at providing authorities with an overview of activities in the short-term rental market and ensuring

compliance with minimal standards (ibid.). In addition, some cities attempt to regulate the quantity of offerings and, occasionally, their geographical distribution (ibid., 41). In this case, the goal often lies in achieving a more even spatial distribution of short-term rental offerings across the entire urban area and countering concentrations in central neighborhoods, as seen in Barcelona (ibid.). Lastly, most city administrations have introduced regulations that distinguish between professionally rented entire secondary apartments and occasionally rented primary residences and single rooms (ibid., 43).

Nieuwland et al. (2020) categorize regulatory measures in eleven selected European and North American cities into four intervals ranging from outright bans to a *laissez-fair* mentality. They explain the diverse regulatory approaches observed by attributing them to different goals set by various city administrations in relation to short-term rental market regulation (818). While cities with strict regulations like Barcelona, New Orleans, and Anaheim aim to reduce tourist pressure, cities with the primary goal of preserving affordable housing or the character of residential neighborhoods have less stringent rules (ibid.). The authors distinguish between quantitative measures (maximum rental duration), qualitative means (differentiation between professionally rented entire apartments and peer-to-peer offerings), and locational measures (regulating spatial distribution)(ibid.). This classification aligns closely with that of Colomb et al. (2021).

It should be noted, however, that regulatory regimes are highly dynamic, and urban administrations regularly adapt their regulations to new circumstances. This is evident in the work of Hübscher et al. (2023), who build upon Nieuwland et al.'s (2020) categorization and note that Amsterdam, for example, has shifted from a *laissez-faire* approach to significantly stricter rules (Hübscher and Kallert 2023). All other European cities examined by Nieuwland et al. (2020) have also intensified their regulations (ibid.).

However, it should be mentioned that not all urban administrations implement restrictive short-term rental regulations. London, for instance, is often cited in connection with more liberal legislation (Ferrerri and Sanyal 2018). The example of Lisbon even reveals an entirely different trend. In the years following the global economic crisis, city administrations implemented targeted policies to divert international capital into the city's housing market and fostered a "*leisure-led urban revitalization*" (Amore, de Bernardi, and Arvanitis 2022, 3336). Only when the consequences of this resulting *Airbnbization* reached dramatic proportions, with over 20 percent of housing stock being used for tourist purposes in some neighborhoods, did the city recently introduce stricter regulations (Estevens et al. 2023).

The enforcement and effectiveness of regulations are generally considered moderately successful (Colomb and Moreira De Souza 2021), primarily due to two factors. Firstly, urban administrations face technically superior opponents in short-term rental platforms like Airbnb, which have little interest in regulating their own business model and are reluctant to share

data with authorities (Cox 2017; Reinhold and Dolnicar 2021; Colomb and Moreira De Souza 2021). Secondly, many locally operating urban administrations lack sufficient authority to counter globally operating short-term rental platforms like Airbnb within multi-level governance systems. In this context, Colomb et al. (2021) note that cities lack the "*Right to regulate*" (60) and urge national governments to grant city administrations the necessary tools for effective regulation. This issue was highlighted by the initiative of 22 European city administrations, which sent a plea to the EU Commission in March 2020, seeking support in obtaining Airbnb data and regulating the short-term rental market (Bugalski 2020). On March 2, 2023, the relevant ministers at the EU level agreed to initiate negotiations with the EU Parliament to standardize regulations for the short-term rental market across Europe and oblige platform operators like Airbnb to share their data with relevant authorities (consilium.europa.eu 2023).

2.3. Short-term rentals in Berlin

2.3.1 Berlin as New Urban Tourism Destination

The global growth of city tourism has also had an impact on the German capital. The economic downturn in the years following the city's reunification after 1989 prompted the city administration to establish tourism as an economic boost for urban development, whereas it had previously played only a minor role in divided Berlin (Novy 2016). The post-reunification tourism promotion became the "*first issue on the political agenda*" (C. M. Colomb 2008, 128), forming part of a larger strategy to define a new Berlin brand. Over the subsequent years, city officials implemented numerous measures to promote tourism, including the establishment of an internationally active tourism agency in 1993 and the adoption of the first of several regional tourism concepts in 2004 (Grube 2022; Füller and Michel 2014). These efforts were complemented by initiatives to host mega-events in reunited Berlin. An example of this is the unsuccessful bid for the 2000 Olympic Games (Johnson 2019) and the hosting of the 2006 FIFA World Cup, which is still seen as the "*spark for Berlin's subsequent tourism boom*" (Grube 2022, 1680). Thus, unified Berlin became a stage for numerous strategic tourism promotion measures aligning with international trends.

These efforts are reflected in significant growth figures in the tourism sector. It is one of the few economic sectors in Berlin that has experienced continuous growth since the 1990s and is now the city's most important economic sector (Novy 2016). Before the outbreak of the global Covid-19 pandemic in 2019, Berlin, with its then population of about 3.5 million residents, recorded over 34 million overnight stays (Amt für Statistik Berlin-Brandenburg 2022). Since reunification, the number of overnight guests and stays has more than quadrupled (Novy 2018). Despite the dramatic decline during the Covid-19 pandemic, the industry recovered and recorded nearly 17 billion euros in annual revenue in 2022 (visitBerlin 2023). The tourism sector supports 228,000 jobs in Berlin (ibid.). With 26 million tourists and 26.5 million overnight stays in the city's 723 hotels and accommodations, Berlin ranked among the top three tourism destinations in Europe in the same year, following Paris and Rome (ibid.).

With numerous renowned cultural institutions, pivotal historical sites of the 20th century, and its status as a global leading congress and trade fair city (Holm, 2022), Berlin holds "*multiple and overlapping tourism roles*" and has established itself as a *World Tourism City* in the international urban hierarchy (Novy and Huning 2014). Additionally, many scholars argue that Berlin's distinct appeal, particularly due to its vibrant creative and nightlife scene, a high proportion of low-cost flight connections, and affordability compared to other metropolises like Paris or London, attracts a young and price-sensitive audience (ibid.). This audience often falls into the category of new urban tourists, actively seeking authentic travel experiences (Y. Kim and Lee 2020).

Understanding the spatial expansion of tourist activities in the city requires knowledge of two essential structural characteristics. Firstly, modern-day Berlin emerged from the amalgamation of numerous individual municipalities in 1920, resulting in a distinct polycentricity that persists today. Secondly, during the Cold War, between 1961 and 1989, the city was divided by the Berlin Wall, leading to the formation of two overarching city centers (Arandelovic and Bogunovich 2014). These structural features are also visible in the spatial expansion of tourist activities (Novy 2016). Although much of the activity is in proximity to the two major city centers, it is by no means restricted to them: "*Berlins tourism landscape [...] seems rather dispersed. [...] many Berlin visitors in fact do not limit their explorations to the City's central area(s)*" (Novy and Huning 2014).

2.3.2. New Tourism Areas in the Rental City

In recent years, several neighborhoods have been identified as new tourism areas. What they have in common is their location within the *city-train-circle*, which serves as the informal boundary between the inner and outer city, and their lack of traditional tourist attractions (ibid.). Moreover, they are characterized by a significant proportion of old building stock that underwent extensive restoration through state subsidies after reunification (Holm 2016; 2011; Johannes Novy 2013). In this context, they are all spatially intertwined with *gentrification* processes (ibid.). Over time, they have all undergone a significant image transformation, affecting their tourist appeal.

In particular, the neighborhood of *Kreuzberg* is considered an early center of new urban tourism. This migrant-influenced working-class district held a peripheral urban position in former West Berlin and was known for its left-wing political activism (Füller and Michel 2014). With reunification, the district regained its proximity to the city center, and, coupled with its reputation as a culturally diverse neighborhood, it became particularly attractive to tourists (ibid.). Between 1993 and 2006, the number of tourist guests in *Kreuzberg* increased by 743 percent (Novy and Huning 2014). The public and scholarly debate about the impact of tourism has been particularly early, vocal, and controversial here (Johannes Novy 2013). *Kreuzberg*, with its traditionally politically active population, became a hub for anti-tourism protests (Füller and Michel 2014; Johannes Novy 2013). Notably, the district also marks the starting

point of a *gentrification* trend that has encircled inner-city Berlin neighborhoods since reunification (Holm 2016). Füller (2014) attributes tourism-led gentrification to the district, particularly highlighting the growing number of tourist accommodations, largely resulting from the conversion of residential units into short-term rental apartments.

In the former East of the city, *Prenzlauer Berg* was classified as a new urban tourism area early on, with tourist numbers increasing by a staggering 1,256 percent between 1993 and 2006 (Novy and Huning 2014). Generally, it is said that some East Berlin neighborhoods underwent a particularly radical transformation in the course of reunification and integration into the capitalist market economy since the early 1990s (Holm 2016). Holm (2016) describes the phenomenon of *hyper-gentrification* and State-led upgrading processes that led to extreme rent increases (ibid.). Unlike Kreuzberg, the East district was not known for its multicultural character but rather for its creative and regime-critical artist community during the division (Novy and Huning 2014). After reunification, the creative underground scene occupied many vacant buildings, making the neighborhood attractive to adventurous tourists (ibid.). However, due to *hyper-gentrification* and *touristification*, the district rapidly transformed into a bourgeois neighborhood, characterized by high-priced tourist offerings and a loss of appeal for the creative underground scene (ibid.). The case of *Prenzlauer Berg* suggests that *touristification* in Berlin neighborhoods sometimes leads to a new socio-economic functional separation, resulting in increasing homogenization (Micki Blickhan, Thomas Bürk, Thomas Bürk, and Nils Grube 2014).

The described neighborhoods illustrate characteristic developments that have been occurring in a similar fashion in several other parts of the city. Among them is the district of *Neukölln*, located south of *Kreuzberg*. Just a few years ago, this area was often described as a *ghetto* (Kadioğlu 2022). The increased appeal to tourists in this area can partly be attributed to the fact that, due to displacement processes in previously mentioned neighborhoods, many displaced residents moved to *Neukölln* (Holm 2013). They acted as pioneers contributing to the neighborhood's image transformation and ultimately instigating *gentrification* processes there, as well as enhancing the attractiveness of the district as a new tourism area (ibid.).

In general, it is argued that residents of new tourist neighborhoods in Berlin had to adapt to tourist activities much faster than in other cities, due to the city's transformation from near-complete isolation to a global tourist destination within about two decades (Colomb and Novy 2016). It should be noted that the excesses of urban tourism have generated significant protests from residents in several neighborhoods and encountered multiple types of protest (Füller and Michel 2014; Johannes Novy 2013; Micki Blickhan, Thomas Bürk, Thomas Bürk, and Nils Grube 2014).

2.3.2. Airbnb in Berlin

The practice of short-term rental plays a central role in the tourism activity of Berlin. In one of the first city-wide studies on the effects of short-term rental practices on the housing market

in 2014, 11,495 short-term rental apartments were identified, concentrated in the central neighborhoods and accounting for nearly half of all short-term rental listings in Germany (Schäfer and Braun 2016). Results from the following year indicate that with 38,500 beds, Airbnb dominated 27 percent of the city-wide accommodation market in Berlin (Cassell and Deutsch 2023). In 2019, only four other European cities had a larger number of Airbnb offerings than Berlin (Duso et al. 2020).

Schäfer (2016) also notes that 69 percent of all city-wide listings concentrate on just 5 out of the total 81 neighborhoods in the city, precisely the aforementioned new tourism areas and the historic center in the eastern part of the city. In contrast, short-term rentals in and around the former West Berlin center play a minor role, even though it is also strongly tourist-oriented (Stors and Baltes 2018). In 2014, 5,500 diverted apartments were identified, accounting for a small portion of 0.3 percent of the housing market in Berlin as a whole; however, the ratio is higher in neighborhoods with a high concentration of short-term rentals (Schäfer and Braun 2016). In the *Mitte* district, for instance, 7 percent of all one- to two-room apartments were used as short-term rentals (ibid.).

Bosma (2022) argues that the Berlin rental market provides an attractive environment for short-term rental activity, particularly for professional providers due to the high *Rent Gap* resulting from low average wages on one side and the city's international appeal, combined with population growth and housing shortages, on the other.

The practice of short-term rental is seen as a clear driver of *touristification* processes in Berlin, especially in neighborhoods with a migrant population (Stors and Kagermeier 2017; Grube 2022). While parallels are drawn regarding the role of the short-term rental market in *gentrification* processes, overarching dynamics like the significant population growth or high migration numbers in recent years seem to be more substantial factors for these dynamics (Colomb and Moreira De Souza 2021). Duso et al. (2021) establish a direct causal link between short-term rental supply and rising rents in surrounding apartments, up to an increase of 46 cents per square meter. The impact of short-term rental on surrounding rental prices appears even stronger in less tourist-oriented neighborhoods than in tourist-oriented ones (ibid.). However, no clear effects of the short-term rental market on traditional accommodation providers can be observed (Stors and Kagermeier 2017).

For peer-to-peer providers, renting private housing is also attractive due to low wages and limited assets, promising additional income (Bosma 2022). The author recognizes different forms of *professionalization* and distinguishes between precarious and privileged forms of *professionalization*. He suggests that some Berlin hosts are pushed into *professionalization* to avoid falling victim to rising rents and displacement tendencies (ibid.). Stors (2017) also identifies this pattern, describing the practice of short-term rental as a means by which some market participants secure themselves against displacement. Based on qualitative interviews

with short-term rental hosts, she observes that the commodification of their own living space generates the additional income needed to compensate for increasing rents. Regarding the regulation of the Berlin short-term rental market, she points out that the actual diversion of housing from its intended purpose is attributable to professional providers rather than private individuals. Thus, she calls for stricter regulatory measures to curb these actors (ibid.).

2.3.3. Regulatory Approach: Zweckentfremdungsverbotsgesetz (ZwVbG)

The Berlin short-term rental market has been regulated since 2014 through the Zweckentfremdungsverbot (ZwVbG), which is a prohibition law at the state level of Berlin (Colomb and Moreira De Souza 2021). According to the ZwVbG, a diversion of housing occurs when residential units are repeatedly used for short-term tourist rentals without permission for commercial or professional purposes, undergo significant structural alterations, remain vacant for more than three months, or are demolished (Crowe 2021). Exceptions must be granted by the districts where the respective residential units are located; the districts are responsible for enforcing the ZwVbG (Cassell and Deutsch 2023; Murray Cox and Kenneth Haar 2020). For apartments that were already rented as short-term rentals before the law came into effect, there was a two-year transitional period, after which a requirement for approval also applied (Cassell and Deutsch 2023, 12).

After the law initially amounted to a near-complete ban in practice, a partial liberalization occurred in 2018 as apartment owners successfully litigated their right to rent out their private residences for short periods during their absence (Murray Cox and Kenneth Haar 2020). This was deemed not to pose a threat to the housing market by the courts (ibid.). With this amendment, a permission system was introduced, distinguishing between various types of short-term rentals. Crucial factors include the type of residence (primary or secondary), the type of offering (individual rooms or entire apartments), and the number of rental days per year (Colomb and Moreira De Souza 2021). Essentially, the ban from 2014 was maintained, but providers can now apply for exceptions. Residents with a primary residence can apply for permission to rent out their entire apartment for a maximum of 182 days per year, while residents with a secondary residence and a primary residence outside Berlin can obtain permission for a maximum of 90 days per year (ibid.). Residents who want to sublet less than 50 percent of their living space are exempt from the requirement for permission, with shared spaces like hallways, kitchens, or bathrooms being counted as half. Regardless of the requirement for permission, the law mandates that all hosts register and display the registration number issued by the responsible district on the platform through which the apartment is offered for short-term rental (Cassell and Deutsch 2023). Generally, only one permission is granted per party (ibid.). If comparable replacement housing is created elsewhere, a change of use can also be permitted, and violations can be fined up to €500,000 (behlau 2012).

The assessment of the practical impact of the regulations is mixed to negative. While the regulations have led to a significant reduction in Airbnb offerings, both forms of the ZwVbG have been effective in this regard. However, it is noted that particularly after the updates of the law, the number of occasional offerings decreased, while professional offerings were less strongly influenced by the regulations (Duso et al. 2020). In contrast, according to Cassell et al. (2020), fines of over 100,000 euros were imposed due to the first ZwVbG in 2017, and by the following year, approximately 4,000 apartments were returned to the regular Berlin housing market. In the comparison of the 10 European cities with the most Airbnb offerings in 2020, Berlin was the only city where the number of shared accommodations (private rooms + shared rooms) exceeded the number of entire apartments, and a significant portion of the offerings (76 percent) were individual listings rather than multi-listings (Demir 2021, 457). However, whether these findings can be attributed to the legislation or are explained by socio-economic characteristics specific to Berlin's population compared to other cities remains unresolved.

In contrast, the significant declines in the number of Airbnb offerings after the regulations came into force were short-lived. Only one year after the first version of the ZwVbG came into effect, or two years after the amended version came into effect, the total number of Airbnb offerings returned to the level before the regulations were enforced (Murray Cox and Kenneth Haar 2020, 47). In a recent press report, it was noted that by the end of June 2023, 12,473 listings were offered on Airbnb throughout Berlin, citing data from the website insideairbnb.com (Bloomberg.Com 2023).

Particularly with regards to the implementation of the registration requirement, a negative assessment has been made. Colomb et al. (2020) note that in 2020, 80 percent of Berlin Airbnb listings posted online lacked a registration number and were thus illegal (74). In light of such findings, the Berlin law was amended once again in 2021. This amendment introduced a requirement for providers to retroactively add the registration number to existing online listings; all other listings must be deleted by the platform operator (berlin.de 2023).

As Berlin's administrations also struggle to analyze the data provided by platform operators, they have joined an initiative by multiple European city administrations to seek support from the EU Commission in obtaining data and regulating the short-term rental market (Bugalski 2020, 5). The establishment of an online reporting platform, where citizens can report violations of the ZwVbG, can also be interpreted as a call for help, indicating the limited enforcement capability of the authorities. Around 60 authority employees are responsible for licensing, registration, and pursuing ZwVbG violations citywide, addressing violations not solely stemming from the diversion due to short-term rentals (Cassell and Deutsch 2023, 12).

Conclusion

Short-Term Rentals play a pivotal role in this dynamic, primarily due to their substantial impact on the housing market of the affected cities. In response to the adverse effects of unregulated short-term rental practices, many city administrations have implemented regulations to curb such practices, often with limited success (Colomb et al. 2020). Exploring both the reasons behind the proliferation of short-term rental markets and their role in neighborhood transformation processes has become integral to tourism-related urban research. Likewise, there is a growing interest in studying regulatory approaches and their effects on restraining the short-term rental market. Hereby, the moderate success of regulations is sometimes attributed to fundamental gaps in research in these areas.

This study is driven by the recognition that there is a dearth of research, especially on a finer-grained scale below the neighborhood level within cities, particularly in terms of quantitative outcomes. While many previous works identify neighborhoods particularly impacted by short-term rental practices and examine the resulting transformation processes at the neighborhood level, a comprehensive understanding on the sub-level, especially concerning the implementation and effectiveness of regulatory measures, remains limited. It is argued that the establishment and enforcement of effective regulations to rein in the short-term rental market necessitate more empirical insights at the building or even housing unit level. The aim of this study is to address some of these micro-scale knowledge gaps.

3. Methodology

3.1. Research Questions & Design

The specific objective of this research are to answer the following questions:

To what extent do short-term rentals comply with current regulations, and how is short-term renting distributed spatially at the micro level?

The answering of these questions was carried out through an exploratory data analysis (EDA), characterized by the application of various methods. EDA can be attributed to John Tukey, who describes it as follows: *"exploratory data analysis is actively incisive rather than passively descriptive, with real emphasis on the discovery of the unexpected"* (L. V. Jones 1986, lxii). Additionally, Ho (2010) notes that EDA is *"goal-oriented, not means-oriented"* (Ho Yu 2010). In EDA, the process is reversed compared to hypothesis testing or Confirmatory Data Analysis (CDA). The available data is first explored, and then, based on the results generated during this exploration, hypotheses are formulated, serving as the basis for further research (Bortz and Döring 2006). Such research is inductive in nature and is particularly suitable for large datasets where little is initially known about their content (ibid.). Some researchers advocate for the increased use of EDA methods because they provide more flexibility in scientific work, enable diverse discoveries, foster scientific creativity, and, unlike CDA methods, make it less likely to replicate existing results (Fife and Rodgers 2022). EDA also places a particular emphasis on various methods of data visualization (Bortz and Döring 2006), which have proven suitable for this work.

The analysis of geospatial data was conducted using the Geographic Information System (GIS) software Q-GIS. The choice of EDA as a more open analytical approach is supported by the fact that spatial research is often constrained by limited access to spatial digital data. Additionally, there are numerous examples of spatial research employing exploratory spatial data analysis (ESDA), including some related to short-term rental research (Adamiak et al. 2019), which serve as an orientation framework for this research project.

Given that this work aims to generate results at a fine-grained level, it is logical for the research to focus on a specific small-scale study area. For this purpose, the *Friedrichshain* district of Berlin was chosen (see chapter 3.6). Consequently, the results of this work reflect the specific context, including short-term rental regulations, the housing market, and multiple other factors of the particular case and are thus only partially transferable to other contexts. Nonetheless, it is believed that the results obtained may be relevant to future research efforts in different cities or neighborhoods, given the divergent local contexts.

Regarding the answering of the research questions, three objectives were defined:

1. Firstly, an evaluation of the short-term rental supply in accordance with existing legislation in the study area must be conducted. This includes categorizing the offerings as illegal or legal short-term rentals according to the Berlin ZwVbG and distinguishing between professional and peer-to-peer offerings.
2. Secondly, the short-term-rental supply in the study area must be precisely geolocated.
3. As the third objective, the affected building and housing stock must be categorized, with the categorization limited to the realm of building age classes due to the limited availability of geospatial data.
4. An additional objective was defined based on the results of the preceding exploratory data analysis. It was observed that the generated results provide the opportunity for a more detailed examination of a selected portion of the affected housing stock regarding the answering of the second research question. Based on the previously generated data, it will be tested to what extent the Rent Gap Theory serves as an explanatory approach for the fine-grained distribution of short-term rental offerings at the building and housing unit level.

Therefore, the following sections will begin with an explanation of the Rent Gap Theory, providing the theoretical framework for the last part of this work, followed by detailed explanations of the methodological steps to achieve the four objectives listed above.

3.2. Theoretical framework: Rent Gap Theory

Rent gap theory goes back to Neil Smith (1979) and originally served as an economic explanation for the emergence of gentrification processes in urban neighborhoods. According to this theory, the Rent Gap is defined as: *"the gap between the actual capitalized land rent (land value) of a property in its current use and the potential land rent that could be obtained from a 'higher and better' use"* (462).

As the Rent Gap widens, landowners have an incentive to close that gap to generate higher returns. Hereby, a variety of approaches can be taken, including redeveloping existing structures, completely redeveloping land, or repurposing existing uses and structures (ibid.).

Although rent gap theory initially focuses on individual properties, Smith notes that the effects can quickly spread to neighboring properties and lead to neighborhood-wide upgrading processes: *"Gentrification, described as the conversion of working-class neighborhoods into*

middle- and upper-class residential and recreational areas, is considered a means of closing all or part of the rent gap” (ibid.).

As discussed in the literature review, with respect to the practice of short-term rentals, it is argued that converting regular housing to short-term rentals provides owners with an effective means of closing the rent gap without requiring significant investment (Wachsmuth and Weisler 2018). The authors suggest that even in already gentrified neighborhoods, the practice of short-term rentals remains attractive to landlords, because the potential to create Rent Gaps through short-term rentals compared to regular long-term rentals exists even in affluent neighborhoods.

Critics often point out that the rent gap theory focuses heavily on the economic dimension and neglects the role of government and the different characteristics of housing markets, particularly in contrasting North American and European cities (Helbrecht 1996). The numerous regulations attempting to regulate the short-term rental market should also be seen in this context. In this respect, one question that arises with regard to this thesis is whether Rent Gap Theory offer an explanation to the occurrence of short-term rentals and to what extent regulations counteract possible occurring Rent Gaps.

3.3. Data

In the subsequent section of this thesis, a comprehensive explanation will be provided regarding the data utilized for the research and the methodologies employed for analysis. These detailed descriptions aim to enhance the reader's comprehension of the technical procedures conducted through tools such as Q-GIS, Excel, as well as *Google Earth*, *Bing Maps*, and *Google Street View*. Additionally, the thorough description stems from the recognition that many other research papers often lack complete elaboration on technical procedures, posing challenges in terms of replicating research outcomes.

3.3.1 Data Acquisition

3.3.1.1. Inside Airbnb

This study is based on several spatial datasets obtained from different sources. The central dataset includes geo-referenced Airbnb listings and was obtained through the website *Insideairbnb*, which describes itself as follows:

„Inside Airbnb is a mission-driven activist project with the objective to provide data that quantifies the impact of short-term rentals on housing and residential communities, as well as create a platform to support advocacy for policies to protect our cities from the impacts of short-term rentals“ (insideairbnb.com 2023).

Insideairbnb obtains the provided data through the method of web scraping (ibid.). Web scraping involves the automated extraction of data from the publicly accessible part of the internet (Murray State University et al. 2020). On four days each year, *Insideairbnb* collects data directly from the Airbnb platform's website using this technique for selected cities. Consequently, the data represents a snapshot of Airbnb listings on the day of data collection. The dataset used as the foundation for this work is from September 15, 2022, containing information about all Berlin-wide listings. *Insideairbnb* offers these data in a freely accessible database for download as a CSV file. Berlin is one of two German cities for which *Insideairbnb* collects and provides data. (insideairbnb.com 2023)

All downloaded data is stored in a relational database. This type of database allows for storing and accessing interconnected data points, with each row in the table representing an Airbnb listing with a unique ID. Each column in the table contains information about a specific attribute. These attributes include the host's name and location, the type of listing (entire apartment, private room in a shared apartment, or shared room), details about the number of rooms, prices, available booking days, and license numbers. In total, the database contains 75 attributes per row. Two attribute columns provide spatial context to the data. Under the attribute fields *Latitude* and *Longitude*, coordinates of the respective Airbnb listings are provided. Using these attributes, each individual listing can be spatially visualized in GIS software like Q-GIS. However, it is crucial to note that Airbnb anonymizes the coordinates of listings with a deviation of up to 250 meters. This means that the points provided by *Insideairbnb* do not pinpoint the exact geographical location of the listings (insideairbnb.com 2023). This poses a significant challenge for this work, particularly concerning the aim of conducting a fine-grained analysis of the short-term rental market and explains why research results from other studies often lack granularity on a small scale and why the data only partially aids in enforcing regulations.

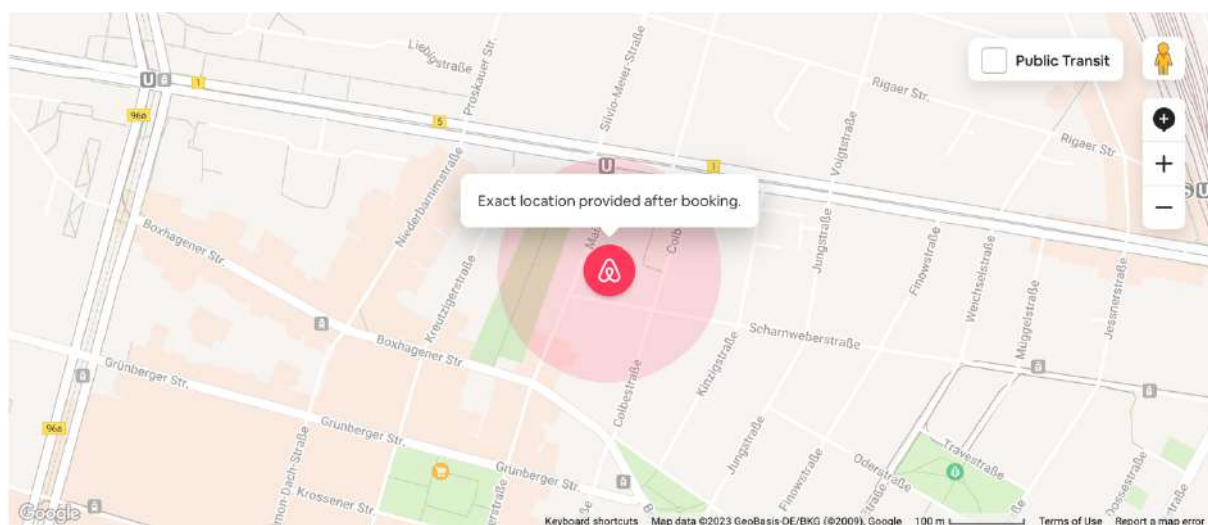


Figure 1: Location anonymization through Airbnb (source: airbnb.com)

Not included in the *Insideairbnb* data table are user-generated image data, which STR providers use to visually advertise their offered living spaces on the Airbnb website. However, for each individual listing in the dataset, a link is available that directs to the corresponding listing on the Airbnb website. Using this link, assuming it functions, images related to the listings can be viewed. All images of the filtered active listings (see Chapter 3.3.2.1.) were reviewed, downloaded, and archived using this method.

3.3.1.2. Geospatial Data Berlin

The additional data for this study was largely sourced from the geospatial portal *FIS-Broker*, which is managed under the auspices of the Berlin Senate Department for Urban Development. This platform compiles and provides public access to spatial data from various Berlin specialist authorities free of charge. Depending on the data content, various data formats are offered for download. Moreover, a significant portion of the data can be directly linked to a geographic information system using specified URLs. At the time of data acquisition, the portal offered 714 datasets.

For the collection of geospatial data, Berlin authorities employ diverse spatial reference systems. Alongside spatial data collected at the city or the twelve Berlin district levels, since 2006, Berlin administrations have utilized *lifeworld-oriented spaces* (LORs) as small-scale reference systems. These LORs serve as the spatial basis for planning, forecasting, and monitoring demographic and social developments in Berlin (Senate Department for Urban Development 2023). At the level of these LORs, socio-structural data from official statistics are provided by the Statistical Office for Berlin-Brandenburg (AfS) or specialized data by relevant specialist authorities. The LOR system can be elucidated as follows: The twelve Berlin districts are subdivided into 58 Projection Areas (PGR), which are further divided into 143 District Regions (BZR). These, in turn, consist of 542 Planning Areas (PLR), representing the lowest observation and planning level in the LOR spatial hierarchy. Beneath these, there exists the spatial level of city blocks, although it does not belong to the LOR hierarchy.

The *Friedrichshain* district is divided into a total of 12 PLRs. For this work, building inventory data was sourced at the PLR level. Additionally, data regarding the construction age classes of buildings were obtained at the block level. Data related to building age, as well as most other data like ownership structure, are accessible at the building level in Berlin, but are subject to data protection regulations in Germany as they are considered personal data (Kriesten 2021). However, the Berlin geospatial database also provides historical data. One of these maps from 1993 provides address-specific construction age classes for each individual building. This dataset naturally does not include information about buildings constructed after 1993 but, in conjunction with block-level building data, can furnish the necessary information on building age for this study.

3.3.1.3. Satellite Imagery & Google Street View

In addition, data from platforms such as *Google Earth*, *Bing Maps*, and *Google Street View* were utilized for this study. These were essential for determining the precise location of short-term rentals (see Chapter 3.3.2.3.).

3.3.1.3. Berlin Rent Index

Finally, data from the Berlin *Rent Index* of the year 2023 was acquired. The *Rent Index* is published every two years by the Berlin Senate and reflects the rental levels in existing tenancy agreements in Berlin (Senatsverwaltung für Stadtentwicklung 2023). The data is generated through a scientific process based on rents from the past four years, forming the framework for new lease agreements or rent increases. Based on the address, building age class of the apartment, and apartment size, the permissible maximum rents for each apartment in Berlin can be calculated. The Berlin Senate provides an online tool for this purpose, which performs the calculations given the necessary data. For the latter part of this study, the online *Rent Index* tool was employed to calculate permissible rents for regular tenancy agreements in selected short-term rental apartments. Additionally, the Berlin *Operating Cost Index*, also part of the *Rent Index*, was used for these calculations. It contains reference values for average monthly operating costs for apartments in Berlin.

3.3.2. Data Cleaning and Analysis

Having introduced all the datasets used for this study, the subsequent section explains how the data was utilized in the analysis. The content of the first subsection pertains to the fundamental data preparation of the *Insideairbnb* dataset. Each of the following sections describes the procedure for achieving the four defined objectives.

3.3.2.1. Data Filtering & Missing Values

Before commencing the data analysis, the *Insideairbnb* dataset required filtering and filling in missing values. This process was carried out using Q-GIS and Excel software. From the dataset, a total of 16,680 short-term rental listings were geographically visualized in Q-GIS for the entire city of Berlin. Initially, all listings located outside the geographical boundaries of the study area were deleted. As a result, 1,827 data points were filtered out. It should be noted that due to the spatial anonymization of Airbnb data, slight inaccuracies may arise in the outskirts of the study area. Listings might have been placed within the study area, while their exact locations are slightly outside. Similarly, some listings that should have been part of the analysis might have been situated just beyond the study area due to spatial anonymization. However, these inaccuracies are considered marginal and are thus disregarded.

Of interest for this research are solely active listings, i.e., those available for booking on the Airbnb platform in the future. Listings that are not bookable or no longer bookable are

irrelevant to this study and were removed from the dataset. The data table includes, for each listing, the number of bookable days within the next year. All listings with this value exceeding 1 were filtered out, and all others were deleted. This step is based on the assumption that not all listings advertised on Airbnb are actively operated. For instance, it is plausible that listings for one-time rentals were forgotten after successful leasing. It is also possible that hosts utilize Airbnb's snoozing or delisting feature when they do not wish to offer their living space on the platform for an extended period (see Chapter 2.2.2.2.). Consequently, the listings in the dataset corresponding to such cases do not align with the characteristics of short-term rental apartments. This is a common method used in numerous quantitative research studies employing *Insideairbnb* data to identify active listings.

In a subsequent step, these active listings were examined for their actual availability on the Airbnb website. For each active listing, the provided URL was checked to verify its redirection to the Airbnb site. This verification serves two purposes. Firstly, it validates the data—a step that is often omitted in many studies, resulting in several results being based on data that no longer exists (Alsudais 2021). Secondly, it is the only way to collect user-generated image data on the website, which are not available in the dataset but are crucial for the subsequent precise localization of short-term rental units. Alongside URL verification, for each existing listing on the Airbnb site, all available images were archived, and the listing descriptions and host descriptions were copied and added to the *Insideairbnb* dataset. This is essential since these textual elements are necessary for the subsequent data analysis procedures (see Chapters 3.3.2.2 & 3.3.2.4). The supplementation of text segments is necessary because the *Insideairbnb* dataset displays only a limited number of characters for each text component, resulting in incomplete data.

As a result of data filtering, 495 listings were identified, forming the foundational dataset for all subsequent analysis steps.

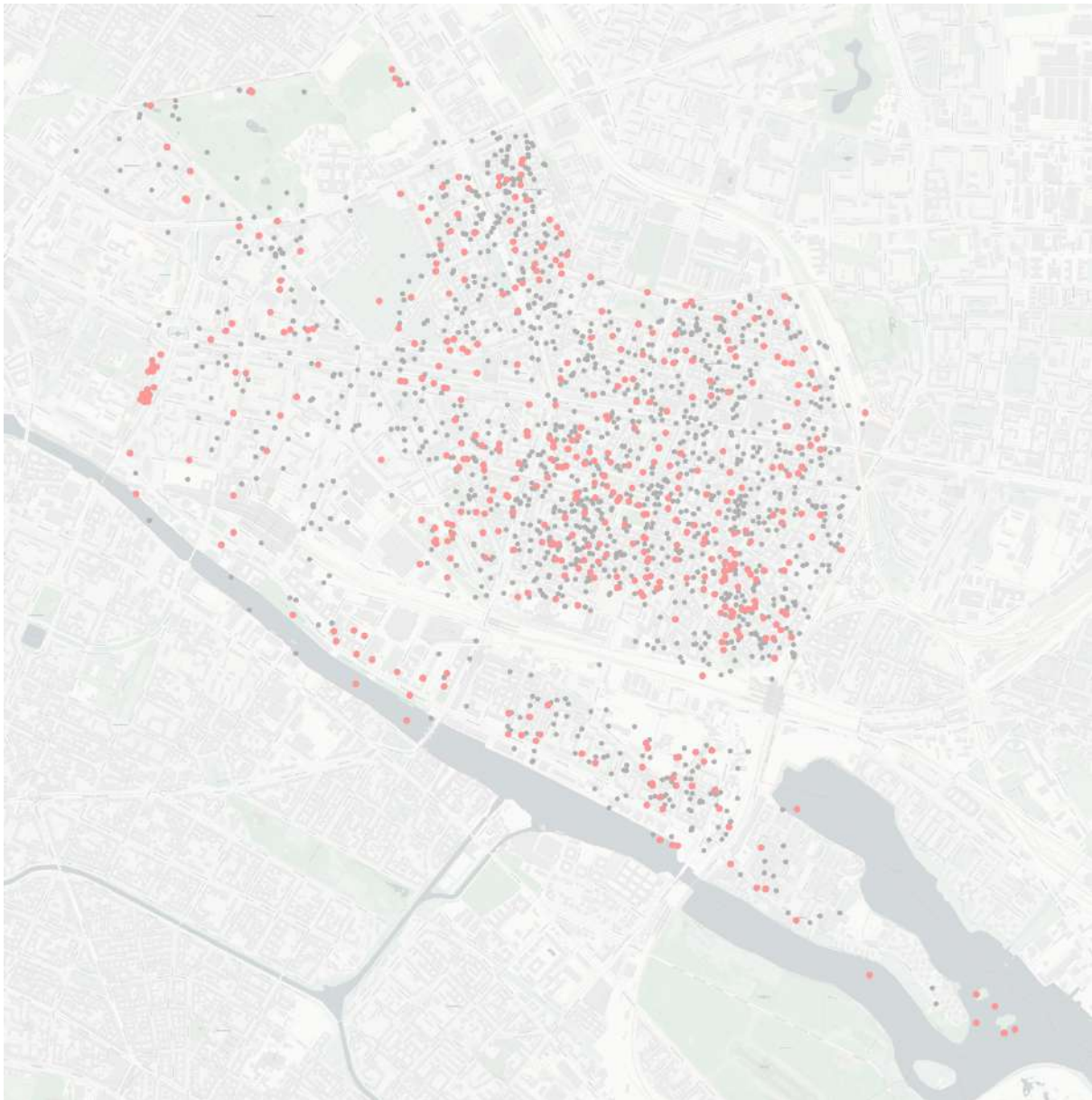


Figure 2: Active & inactive Airbnb Listings in Friedrichshain

3.3.2.2. Objective 1: Assessing (Il)legality and Professionalization

To comprehensively evaluate potential violations of the Berlin ZwVbG by individual listings, multiple attributes of the dataset need to be analyzed. Initially, it can be assumed that all listings displaying a license number have provided it in the respective attribute table, indicating legality. This applies to 373 out of the total 495 listings. However, it should be noted that various types of licensing are possible in accordance with prevailing regulations (see Chapter 2.3.3.). In addition to providing an official license number, private peer-to-peer listings can also include the name and address of the short-term rental unit as well as the host. For commercial providers, the inclusion of business data, including the address, is also possible. The licensed listings were categorized based on their type of licensing.

As previously explained, it is also reasonable to assume that short-term rental providers navigate the Airbnb website's user interface differently. Consequently, it's conceivable that their license information might not always be contained within the designated column but could, for instance, be found in the text field intended for the listing description. Therefore, all text fields used for describing the short-term rental and the host were also analyzed to determine the presence of license-related information and grouped accordingly.

In addition to evaluating the forms of licensing, the listings were examined for compliance with the substantive regulations of the Zweckentfremdungsverbotsgesetz (ZwVbG) through a combined analysis of the attributes *room type* and *booking availability*. This approach stems from the stipulations of the Berlin ZwVbG, which sets different maximum values for the number of booking days based on the room types (see Chapter 2.3.3.). The dataset encompasses three room type categories: *entire apartment*, *private room*, and *shared room*. For the assessment, only whether it's an entire apartment or a shared apartment is relevant. Consequently, *private rooms* and *shared rooms* were combined into a single category for analysis, juxtaposed with the entire apartment category. Three booking availability categories were created to align with the ZwVbG's thresholds (< 90 days, 90 – 183 days, > 183 days availability). The dataset does not indicate whether residents in the apartments live in their primary or secondary residences. Although crucial for determining (il)legality, this factor is disregarded.

Regarding data interpretation, it's important to note that the dataset provides information about the booking availability of the respective short-term rental. Non-availability of short-term rental can stem from two reasons. Firstly, the affected housing might be used for regular residential purposes or left vacant at that point in time. Secondly, non-availability could be due to the housing already being rented out to guests. This means that low availability could also arise from the corresponding short-term rental being fully booked. However, it can be assumed that very few short-term rentals remain fully booked throughout the entire year. Most guests do not book far in advance, and apartments predominantly used for short-term rentals tend to have high availability despite this. Concerning booking availability, it's also worth noting that the ZwVbG allows commercial providers such as hotels, hostels, or legal vacation rental providers to offer their accommodations on platforms like Airbnb. However, they are not bound by the prescribed maximum booking day limits applicable to residential housing rented for tourism purposes. Conversely, it could even be argued that such providers are explicitly facilitated on the website, as they are exempt from requiring a license number if they provide business-related data. Hence, these professional providers may appear to violate the substantive regulations of the ZwVbG to some extent, but still remain legal.

For assessing professional offerings, a somewhat different approach was taken compared to other studies. Often, *professionalization* is equated with multi-listings, i.e., offering multiple short-term rental by an individual or entity. In the Berlin context, *professionalization* can also

be inferred partially from the type of licensing, particularly when the listings are licensed through the provision of business-related data. Furthermore, throughout the analysis, it became apparent that the classification of *professionalization* can also be deduced from the *property type* attribute. Listings with a property type indicating a commercial offering (e.g., *room in hostel* or *room in vacation home*) were also categorized as professional. Finally, all remaining multi-listings were categorized as professional short-term rental offerings. Thus, *professionalization* was determined through a combination of three factors.

3.3.2.3. Objective 2: Assessing precise STR-locations

This part of the study is guided by the hypothesis that user-generated data from Airbnb platform listings provide spatial information that allows for circumventing the anonymization of listing locations by Airbnb. This can be achieved either through the provided addresses in the licenses or by using image data used to promote the listings on the Airbnb website. All listings were examined for these possibilities, and if the data allowed, they were precisely located.

In the initial step, all listings licensed through a specific address of the offered apartment were localized using the Q-GIS plugin *AddressFinder*. Subsequently, the remaining listings were analyzed for the presence of images that could provide insights into the location of the corresponding short-term rental. During this qualitative image analysis, images were searched for information concerning building exteriors, window views, balconies, and the building surroundings. Following this, images that met these criteria were cross-referenced with satellite imagery from providers like *Google Earth* and *Bing Maps*, as well as *Google Street View* captures. In cases where possible, precise geolocation of the short-term rental was achieved using the Q-GIS plugin *AddressFinder*. All listings that couldn't be precisely localized through this method were then mapped using the coordinates anonymized by Airbnb.

As described in Chapter 3.1.2, a central goal of this study is to visually present the results by mapping, and other means. Maps serve as a "*creative tool for reinterpreting space at different scales and discovering hidden possibilities and connections*" (Undine Giseke et al. 2021, 81) and are therefore particularly suitable for exploratory data analysis. In addition to providing a visually appealing presentation of the results, mapping in this study also serves as a basis for subsequent analyses. In this particular case, the mapping of precisely located listings illustrated concentrations of short-term rentals in specific buildings, which formed the starting point for further research on actors in the *Friedrichshain* short-term rental market. This was done through a following online search and matching of short-term rental locations with geospatial data on building uses from Berlin's geodatabase and *OpenStreetMap*. This made it possible to examine the extent to which traditional accommodation services such as hotels act as players in the short-term rental market.

During the analysis of image content, it was noted that a considerable number of short-term rentals are situated in roof-top apartments. Since roof-top apartments, especially in Berlin's older building stock, are typically floors or extensions that were built later than the underlying structures, they don't match the building age classes of the underlying structures. However, as the subsequent step aims to identify these precise building attributes for each short-term rental, this result needs to be considered in the subsequent analysis.

3.3.2.4. Objective 3: Assessing building age

The precise localization of short-term rentals enables a more detailed analysis of the affected housing stock in which they are situated. As mentioned earlier (Chapter 3.3.1.2), due to data protection reasons, the availability of data at the building level in Berlin is quite limited. Only address-specific data regarding building ages could be utilized for this analysis, and that was only possible because a map from 1992 is still accessible. To determine the building age class of the structures housing short-term rental, the following approach was employed.

First, all buildings containing short-term rentals were filtered, and then these identified buildings were cross-referenced with the historical 1992 building age map. This map does not provide precise construction years but rather periods within which the buildings were constructed. Using this method, a significant portion of the buildings could be assigned a building age class. Additionally, on *Google Earth*, it was verified for all buildings whether they were still standing and not demolished in the meantime, a scenario that did not apply in any single instance.

Subsequently, the buildings not included on the historical map because they were built after 1992 were categorized. All such buildings were loaded into *Google Earth* software. *Google Earth's* functionality includes displaying historical satellite imagery. Through this approach, the construction year was identified for all relevant buildings. Based on the analyzed construction years, the identified buildings were then placed into the categorization of building age classes. A similar pattern of analysis was followed for the previously mentioned roof-top apartments.

The categorization of building age classes was not directly adopted from the historical map but was adjusted to enable a comparison of the building age classes of the identified buildings and apartments with those of the overall building stock. The building age classes of the overall building stock can be derived from the building data collected at the block level (see Chapter 3.3.1.2). However, the categorization of building age classes in that dataset does not align with the year-based categorization in the historical map. Therefore, new building age classes had to be defined to harmonize both systems. The following building age classes were established:

- Building Age Class <1920

This pertains to historically valuable old building stock.

- Building Age Class 1940 – 1990

These are buildings primarily constructed during the era of German division (years between 1920 – 1940 were omitted as no STRs were localized in buildings of this age class).

- Building Age Class 1990 – 2010

- Building Age Class > 2010

The last two categories comprise new constructions, which were subdivided into two categories due to the fact that very recent constructions after 2010 generally represent significantly higher-quality new buildings, often associated with substantially higher rents.



Figure 3: Determine building age through Google Earth (source: [googleearth.com](https://www.googleearth.com), edited by author)

3.3.2.5. Objective 4: Testing the Rent Gap Theory

The analysis of short-term rental supply at a local level allows us to investigate the extent to which the Rent Gap Theory can serve as an explanation for the occurrence of short-term rentals in the study area.

Using the Berlin *Rental Index*, the maximum permissible rents for each individual apartment can be calculated based on addresses, building age class, and apartment size. In the logic of the *Rent Gap Theory*, this value corresponds to the actual generated yields, representing the lower value of the *Rent Gap*. For numerous short-term rental apartments, both addresses and building age classes are known from previous studies. Apartment size, however, can often be determined from the textual content of Airbnb listings, as landlords frequently include the size of the living area in their descriptions. Additionally, the *Insideairbnb* dataset provides overnight prices for each short-term rental apartment, on the basis of which the potentially achievable yields for an individual apartment through short-term rentals can be calculated. Consequently, it can be analyzed whether a *Rent Gap* exists and to what extent, if applicable.

An analysis of this nature was conducted for apartments that exhibit a high availability of over 183 days. This restriction is justified by the primary aim of the *Rent Gap Theory*, which is to answer whether long-term diversion of housing for short-term rentals is economically rational. However, sporadic rental of housing during one's absence or short-term renting of individual rooms does not constitute long-term diversion. Furthermore, focusing on offerings with high availability is also justified by the fact that precisely these offerings, despite legislative attempts to limit them, comprise the largest share of the short-term rental supply in the study area.

The methodology employed was as follows. Initially, all precisely located non-standard accommodations (which are not traditional hospitality services) that exhibit a high booking availability of over 183 days were examined to determine whether their Airbnb descriptions include the exact living area in square meters. The textual fields of the *Insideairbnb* dataset were filtered using the abbreviation *m2*, the English term *square meter*, the corresponding abbreviation *sqm*, as well as the German terms *Quadratmeter* and *qm*.

For all 61 short-term rentals apartments that were thus filtered, an individual *Rent Gap* was calculated. While this sample may not be representative across various categories such as building age class or spatial distribution, the insights gained offer indications of potential trends. With the assistance of the Berlin *Rent Index*, the *customary local net cold* rent was determined for each relevant apartment. In this context, *net cold rent* refers to the rent excluding operating costs, as well as expenses for electricity and gas. An appropriate query service provided by the Berlin Senate Department for Urban Development was used (Senate Department for Urban Development and Housing 2023). This online tool, provided by the Berlin administration, allows the input of apartment address and size, subsequently providing

the range of rental prices and the mean value of customary local rents, with data regarding the residential location being automatically retrieved from the address input. The rental price range is understood as follows:

“The rental price of a normal apartment with standard equipment of standard quality in line with its construction age will predominantly be around the mean value stated. A less well-equipped apartment will be at the lower end of the range, while a better-equipped apartment will be at the upper end” (Senate Department for Urban Development 2023).

Two *Rent Gaps* were calculated for each short-term rental. One based on the mean values for rents and another based on the maximum values plus 10 percent. This value corresponds to the maximum permissible cold rent for newly rented apartments with high-quality amenities. Additionally, numerous additional factors can be used to further refine the exact rental price. However, as the necessary data for this purpose are not available, this step was omitted. It must be noted that actual rents often lie well below maximum values. The permissible maximum rent plus ten percent multiplied by the apartment's square meters yields the maximum permissible total monthly rent for an apartment. This value was calculated for all 61 apartments and used as the lower value of the *Rent Gap*.

To calculate the upper values of the *Rent Gap*, several additional factors need to be considered. As the *Rent Index* provides net cold rents, operating costs such as waste disposal, hot water, snow removal, and many other costs are not included. In standard lease arrangements, these costs are added to net cold rent. Consequently, these costs are distributed among the building's tenants. However, in short-term rentals, these operating costs need to be deducted from monthly income. Irrespective of whether a landlord's short-term rental income is high or low, the landlord must cover operating costs. Therefore, potential short-term rental income needs to be adjusted for these operating costs. As the exact operating costs vary for each building, the comparative values from the *Operating Cost Index* provided by the Senate Department for Urban Development in 2017 were used for this purpose (Senate Department for Urban Development 2023). These data are based on samples from thousands of Berlin buildings and were published alongside the Berlin *Rent Index* 2019 (ibdi.). This table provides not only a mean value but also a lower and upper value, which, however, should not be understood as a maximum value, unlike in the *Rent Index*. The upper value represents the upper quintile from the survey. The operating cost table provides values of 1.49 € as the lower value, 3.30 € as the mean value, and 5.48 € as the upper value. These are operating costs per square meter. For calculations in this study, the upper value was also used, assuming that the operating costs for short-term rental apartments are higher than for regularly rented apartments. This is due to a potentially less careful use of the living space by guests, resulting in quicker wear and tear.

Furthermore, heating and electricity costs are not included in the warm rents for Berlin apartments. Regular tenants in Berlin pay these costs directly to service providers and enter into their own contracts for these services. However, in short-term rentals, landlords also cover these costs and they must thus be deducted from short-term rental income. Costs per square meter for electricity and gas were determined using an online calculation tool provided by *GASAG*, one of Berlin's electricity and gas providers (GASAG 2023). The electricity price is set at one euro per square meter, while the gas price is set at 1.60 € per square meter. The electricity price calculation is based on the average consumption of a three-person household, and the gas price is based on the average consumption of a 70 square meter apartment in *Friedrichshain* in 2022. It should be noted that energy prices in Germany were particularly high at that time due to the Ukraine conflict. Accordingly, prices at the upper end of the range were used here as well. For operating and energy costs, 8.10 € per square meter were used, which must be deducted from short-term rental income to determine potential yields.

Finally, it is also considered that short-term rentals are not always fully occupied. While standard lease agreements entail consistent monthly payments, income from short-term apartment rentals can vary widely. The *Insideairbnb* dataset does not provide information about the average occupancy rate for short-term rentals, and there are varying claims. Other platforms like *AirDNA* report very high occupancy rates for Berlin, averaging nearly 90 percent (AirDNA.com 2023). Studies often calculate considerably lower rates. Moreno-Izquierdo et al. (2023) calculated average occupancy rates between 30 and 41 percent per month for Madrid in the year before the outbreak of the Covid-19 pandemic and between 34 and 47 percent for Valencia (Moreno-Izquierdo et al. 2023, 5). This corresponds to an occupancy rate of 9 to 14 days per month. For this study, lower values were considered, and an occupancy rate of 10 days per month was used to calculate the *Rent Gap*.

The potentially achievable income thus corresponds to ten times the nightly price converted to euros, minus the monthly operating and energy costs per apartment. It should be noted that energy costs in this model also apply when the apartment is unoccupied. Consequently, all values deducted from short-term rental income are set relatively high in this model, resulting in relatively low potential short-term rental yields. In contrast, for the calculation of the lower value of the *Rent Gap*, maximal or high comparative values were always used. Thus, it is conceivable that actual *Rent Gap* are larger than those calculated in this model.

3.4. Limitations and Positionality

The limitations of this research project are primarily rooted in the recurring constraints arising from data availability. Firstly, the dataset naturally lacks certain information necessary for an exact categorization of (il)legality or professionalization. For instance, it is not known whether an analyzed listing pertains to a primary or secondary residence, or the size of the apartments. Although these factors are crucial for assessing compliance with the ZwVbG, they must be disregarded in this study. Consequently, slight deviations in the results are conceivable.

Another aspect to mention is the technical limitations encountered during the analysis. Notably, limitations imposed by the online tool *Google Street View* must be highlighted. The service operated in Germany based on image data from the year 2008 until recently. It was only in July 2023 that *Google* updated its content for Germany after 15 years. However, by that point, this study had progressed too far to allow for a reanalysis of the data. It can be assumed that more listings could have been precisely geolocated had the updated *Google Street View* data been employed. On the other hand, the use of other tools such as *Bing Maps* and *Google Earth*, both of which are up to date, suggests that the results were minimally affected by data limitations.

Finally, it should be noted that some of the results of this study are based only on the analysis of a subset of the dataset used for this research project. The calculated *Rent Gap* values should be regarded as reference points and may not accurately reflect the real circumstances. This is due to the use of benchmark values for both regular rents and operating costs, as well as costs for electricity and gas. In addition, the calculation does not take into account price fluctuations of prices per night on Airbnb. Nonetheless, the value of the results lies primarily in highlighting trends, making exact values unnecessary.

Regarding the author's positionality, it should be mentioned that the author lived in the study area for two years and observed the negative impacts of the rapidly growing tourism activity. Therefore, it can be acknowledged that the author possesses certain biases in this regard. However, the quantitative research approach and the technical, number-based, and clearly structured analysis based mostly on numerical values maintain distance from the research topic. Additionally, it can be noted that this study greatly benefited from the author's local knowledge. Precise geolocation of short-term rentals using image comparison with satellite and *Google Street View* data might have been less successful without this local insight.

3.5. Ethical Considerations

This study utilized data characterized by a high degree of private information. On one hand, the dataset includes partial information such as full names and corresponding residential locations of individuals. On the other hand, these data are associated with photos of private living spaces. While it can be argued that all these data are publicly accessible on the Airbnb platform's website and can even be viewed by individuals without Airbnb user accounts, it must also be assumed that many users whose data were used for this study may not have been fully aware of the purposes to which this data could be put. Therefore, the decision was made to firstly, not show any private photos in this thesis and secondly, to anonymize the data, which also has the positive effect of enhancing data readability.

Following the data filtering and dataset narrowing process, each listing was assigned an individual number between 1 and 495. In all provided tables and in the appendix, only these numbers serve as the individual keys for each listing, while the IDs assigned by *Insideairbnb* are not displayed. Additionally, sensitive data such as names, residential locations, or links to the original webpage are not published. Since license numbers are also individual identifiers and could theoretically be linked to specific individuals, and other forms of licensing disclose names and contact information, these specific contents are also not revealed. Only whether a license is present and, if so, the form of licensing used is depicted.

If it becomes necessary to access the data, for instance in the context of reproducing the research project, all data can be linked by the author to the original data and thus verified. All necessary data in this regard have been archived and are accessible at any time. For each listing, both the new and the original ID are known, ensuring that each listing can be unequivocally identified.

Furthermore, it is important to reference the adherence to the *Insideairbnb* website's policy. In accordance with their policies, the data in this study are used to critically examine the short-term rental market and to produce results that can be particularly used to regulate the market more effectively. Therefore, it can be assumed that the utilization of data for this study does not raise any objections from the responsible parties of the *Insideairbnb* website.

4. Case: Friedrichshain

This research delves into the short-term rental market in the *Friedrichshain* district of Berlin. This district is a suitable subject for investigation due to its dual significance as a new tourism area within Berlin and its characteristics as a gentrified neighborhood (Holm 2016; Novy and Huning 2014). Additionally, Friedrichshain is marked by strong urban and socio-economic disparities owing to its tumultuous history.

Geographically located in the former East Berlin, *Friedrichshain* is now one of the twelve administrative units of the city, alongside the former West Berlin district of *Kreuzberg*. Covering an area of 9.95 square kilometers, Friedrichshain is home to nearly 140,000 residents, boasting one of the highest population densities in Berlin, at around 14,000 residents per square kilometer (Qanjary 2020).

Historically, *Friedrichshain* was a working-class neighborhood, undergoing significant urban transformations over time. During the late 19th century, the district was extensively developed with typical Berlin tenement buildings (Ladd 1997). Following *World War II*, the western part of the area largely remained intact, forming the core of the quarter around the historic *Boxhagener Platz* (ibid.). However, during the years of division, much of the historic building stock deteriorated, resulting in the prevalence of dilapidated buildings and vacancies in the 1990s and early 2000s (Holm 2016; 2011). Post-reunification, the historic district underwent substantial revitalization through state-funded measures, catalyzing strong gentrification processes and associated socio-economic changes (ibid.). Over the decades since reunification, the district has transitioned from a run-down worker's neighborhood to an expensive and trendy residential area with a diverse international population.

The eastern part of *Friedrichshain* was heavily destroyed during *World War II* and was subsequently rebuilt in the post-war years based on principles of socialist urban planning. The area features large residential complexes, interspersed green spaces, and wide streets, forming a distinct urban landscape. Notably, the 2-kilometer-long and up to 100-meter-wide grand boulevard, formerly known as *Stalinallee*, now *Karl-Marx-Allee*, runs through the district from east to west, flanked by residential blocks in the architectural style of socialist classicism (Taverne 2005).

The southwestern boundary of the study area is formed by the once-industrial peninsula of Stralau, which has undergone significant architectural transformations in recent decades, characterized by high-quality waterfront housing. To the southeast, the district is bounded by the Spree River and the former course of the Berlin Wall. This former borderland remained largely vacant for many years but has since been transformed into an entertainment district with a shopping center, skyscrapers, and cultural venues, reflecting the urban planning influence of neoliberal policies (Weber-Newth 2019; Scharenberg and Bader 2009).

In recent years, *Friedrichshain* has become a focal point for *New Urban Tourism* (Novy and Huning 2014), leading to the emergence of new tourist hotspots. Alongside the aforementioned entertainment district, three locations of Berlin's club scene have gained prominence. These venues, existing since reunification, have evolved from underground establishments to internationally recognized tourist attractions, drawing *techno tourists* from around the world (Garcia 2016). Moreover, the remaining section of the former Berlin Wall, now known as the East-Side Gallery, has become a significant tourist attraction, drawing approximately 4 million visitors annually (Stiftung Berliner Mauer 2022).

Notably, Friedrichshain was identified by Schäfer et al. (2016) as one of the top five districts in Berlin most affected by Airbnb listings. In 2014, it had 1,252 listings (ibid.). When combined with the neighboring Kreuzberg district, the two areas now constitute 21.6 percent of Berlin's total Airbnb offerings, with almost 2,700 listings (insideairbnb.com 2023). This suggests that sufficient data is available for conducting an analysis of the short-term rental market in this area.



Figure 4: Friedrichshain Riverbank, left: Anschutz-Entertainment-District (source: by author)

4. Findings

4.1. Friedrichshain remains an STR-Hotspot

Firstly, it should be noted that out of the city-wide 16,416 listings in the *Insideairbnb* dataset, 1,827 or about 11 percent are located in *Friedrichshain*. Thus, the number of listings has significantly increased by around 500 compared to the figures from Schäfer's study (2014). The practice of short-term rental continues to enjoy significant popularity, and it appears to have recovered from the impact of the Covid-19 pandemic slump. *Friedrichshain* remains one of the central hotspots for the short-term rental offerings within Berlin (see Table 1).

	Area	Population	Apartments	STR	Active STR
Berlin	891,8 km ²	3,76 Mio	1.998.155	16.416	-
Friedrichshain	9,78 km ²	140.312	77.074	1.827	495
District	-1,10%	-3,70%	-3,90%	-11%	-

Table 1: Berlin and Friedrichshain basic data comparison

4.2. The Airbnb data archive

However, it is important to note that a significant portion of the listings posted on the Airbnb platform's website are not available for future bookings. Out of the total 1,827 listings, only 724 fall into the category of bookable listings. For the rest, it can be assumed that they are offered only occasionally or are completely inactive. Among the 724 bookable listings, during the period of data analysis between January and June 2023, the link to the individual listing on the Airbnb website was not accessible in 229 cases. Thus, the number of active listings serving as the basis for further data analysis in this study was further reduced to 495 listings, accounting for only about 27 percent of the original dataset.

The potential reasons for listing inactivity are described in Chapter 3.3.2.1.. While it can be assumed that some of the listings filtered out during the data cleaning process might still be occasionally used for short-term rentals and are only temporarily inactive, as these cases do not involve the more problematic long-term withdrawal of apartments from the regular housing market, their loss in the dataset is justifiable. However, it is crucial to acknowledge that the actual daily supply of short-term rentals likely surpasses the active listings considered in this study, and it is more influenced by one-time or occasional peer-to-peer offerings than depicted in this study.

While inactive listings might hold no value for platform users and can lead to significant distortions in spatial research results, they do hold value for the Airbnb company for marketing purposes. A high or growing number of listings can be presented as a success for the company, which explains why such inactive listings are not deleted by the website operators.

These observations lead to the following conclusions. The fact that a significant portion of listings still reside in the virtual database of the Airbnb platform provider but do not reflect actual activity in the short-term rental market gives the platform the character of a data archive. In particular, analyses based on unfiltered data must be approached with extreme caution and often considered inaccurate. Focusing solely on the quantity of listings could also lead to the conclusion that the role of the short-term rental market in neighborhood transformation processes is less significant than often portrayed, which is not supported by the subsequent qualitative findings of this study. In conclusion, these observations can also serve as evidence of high fluctuations in the *Friedrichshain* short-term rental market. Many providers exit the platform within a few months, while it can be assumed that a similar number re-enter. However, these dynamics can only be partially captured by the *Insideairbnb* dataset as a snapshot in time.

Whether the aforementioned observations in the *Friedrichshain* study area are representative of other study areas remains unclear. However, there are no apparent reasons to suggest that *Friedrichshain* is uniquely affected by inactive listings. Consequently, these findings are also relevant for other spatial reference systems.

4.3. Different paths lead to licensing

With the number of actually active listings in the study area significantly lower than the total number of listings in the dataset, a similar pattern emerges regarding listings classified as illegal. In a simple analysis of the license number attribute field, the absence of a license number was found in 121 cases, and in 6 cases, a falsified license number was provided. However, the assumption was validated that platform providers navigate differently across the platform and may not always input information into the designated fields.

Through the analysis of text fields, additional licensures were identified (see Table 2). Here, the role of the temporal difference between the data collection of the *Insideairbnb* dataset in September 2022 and the data analysis in 2023 must also be considered. Ten of the subsequently identified license numbers end with the digits 23, indicating the year of issuance by the authority. In these cases, the issuance and/or application for the license occurred after the listing was posted online and is not yet reflected in the September 2022 dataset. This suggests that retroactively licensing seems to be a common practice in the *Friedrichshain* short-term rental market.

As described in Chapter 3.3.2.2., besides the option to display an official license number from the relevant district authority, there is also the possibility of licensing by displaying detailed contact information. This form is the most commonly used form of licensing in the study area. 69 individuals and 175 commercial providers have licensed their listings this way, while 164 listings have an official license number (see Table 2).

However, the final count of falsely or unlicensed, hence illegal, listings stands at 88, which accounts for nearly 18 percent of the active listings in the study area. These figures are significantly lower than the 80 percent of illegal listings identified in other works (Colomb and Moreira De Souza 2021; Murray Cox and Kenneth Haar 2020) for the entire Berlin. The reason for this stark discrepancy can likely be attributed primarily to the results of the previous chapter. When inactive listings are included in the analysis of license number presence, the number of unlicensed listings naturally increases. In the case of Berlin, the ZwVbG has only required licensing since 2018 (Duso et al. 2020). All listings posted online before 2021 must be retrospectively supplemented with a registration number (ZwVbG 2023). Particularly concerning inactive listings, it can hardly be assumed that the corresponding listings would be retroactively licensed. This can also be substantiated by the available data in the study area. To verify this, all 1,827 active and inactive listings in Friedrichshain were filtered, revealing that 740 offers, or 41 percent, are unlicensed. That this value still falls significantly below the 80 percent from 2020 could be considered indicative of improved general enforcement of regulations. However, this cannot be conclusively assessed.

	License Number	Name & Address	Legal Entity	Fake	No License Type	SUM
License field	145	65	158	6	121	495
License field + listing & host description fields	163	69	175	8	80	495

Table 2: Airbnb license types in Friedrichshain

4.4. Illegality as a marginal phenomenon

Licensing represents a formal act crucial for determining the legality or illegality of a listing. However, a license alone does not provide insights into the alignment of short-term rental offerings with the substantive aspects of the ZwVbG. Therefore, it is theoretically possible for an unlicensed listing to adhere to all requirements outlined by the ZwVbG. Conversely, licensed listings in practice might not meet the substantive requirements of the law. This perspective underscores the complexity of the legality issue, surpassing initial appearances.

Illustrating this complexity is another outcome of this study. Alongside formal licensing, the available booking days and room types were evaluated for all listings, resulting in the formation of 10 subgroups. The derivation of these groups and their sizes are depicted in Figure 5. Illegal listings consist of 27 offers for single or shared rooms and 61 offers for entire apartments. Among these, 20 rooms and 17 apartments are available for less than 90 days per year. Thus, these 37 listings do not violate the substantive regulations of the ZwVbG and are potentially readily legalizable. Their time-limited use as short-term rentals does not equate to the character of actual misuse, as it can be assumed they are primarily used as regular residences. An additional 11 listings pertain to entire apartments available for 90 to 183 days.

In this case, a conclusive assessment regarding adherence to substantive requirements cannot be made due to the lack of data for categorization as primary or secondary residences. However, it can be argued that housing available for under a year is still predominantly used for regular living, thus not corresponding to the characteristics of actual misuse. However, this category could also include listings that exhibit the characteristics of long-term short-term rental but are booked out on many days.

For landlords of potentially legalizable listings, deliberately ignoring the necessity of licensing is only conceivable for listings that involve a one-time short-term rental and are removed from the platform after successful transactions. In cases of repeated short-term rental, the absence of a license can only be attributed to ignorance about the necessity of licensing. As Airbnb now prominently prompts hosts to input a license number when listing new properties on its platform (airbnb.com 2021), this scenario is conceivable only for listings that were offered on the platform before the regulations came into effect and need to be retrospectively licensed. Opting out due to cost considerations is also feasible only in cases where hosts are unaware of the cost-free alternative licensing method involving the provision of detailed contact information.

Thus, only 40 unlicensed listings substantively violate the Berlin ZwVbG. Among these, 33 involve entire apartments available for over half a year. The substantive analysis of the textual description of these listings reveals that nearly half of these providers use the strategy of setting a minimum booking duration to evade the ZwVbG rules. Seventeen listings have indicated such a minimum booking duration of three months, with eight of these listings from a single individual. Airbnb argues that a rental of residential space can be classified as short-term rental only if the rental period is less than three consecutive months (airbnb.com 2023b). If residential space is rented for a longer duration, it falls under the understanding of a regular lease agreement, and the ZwVbG rules, including the requirement of a registration number, do not apply. The platform has even introduced a function specifically preventing the booking of these listings for shorter stays (ibid.). This confirms observations regarding Airbnb's increasing platform *professionalization* (Bosma 2022).

Thus, there are only 23 listings in the study area that clearly violate both the formal and substantive requirements of the ZwVbG. Their proportion is minuscule considering the size of the dataset and, especially, the *Friedrichshain* housing market. This ratio initially suggests, contrary to prevailing opinions, a compliant short-term rental market in *Friedrichshain*.

4.5. Long-term STR and still legal

There are 407 listings that are licensed in various ways, contrasting with the 88 unlicensed listings. Among them, 163 have an official-format license number. Seventy-nine are licensed through names and address data, and an additional 175 are licensed through the provision of business information. The authenticity of contact information can be questioned in isolated cases (see Chapter 4.7), and there is a general possibility that well-forged license numbers might go unnoticed. However, it can be assumed that these are individual cases and that the majority of licensed listings are actually formally legal. The detailed categorization of licensed listings followed the same pattern as previously done for unlicensed listings. It was found that only 150 out of these 407 listings clearly adhere to the substantive requirements of the law as they are bookable for fewer than 90 days. Another 49 listings involve entire apartments available for 90 to 183 days. Similar to the previous chapter, a conclusive assessment is not possible here due to lacking data.

On the other hand, 169 listings for entire apartments and 39 listings for rooms do not meet the substantive legal requirements as they exceed the maximum number of rentable days. In these cases, licensing contradicts their predominant function as short-term rental properties, raising the question of why such listings can be licensed. One explanation could be commercial providers offering long-term tourist accommodations legally through the platform. An indicator of this is the high number of listings available for over 183 days and licensed through the provision of business information. This applies in 113 cases.

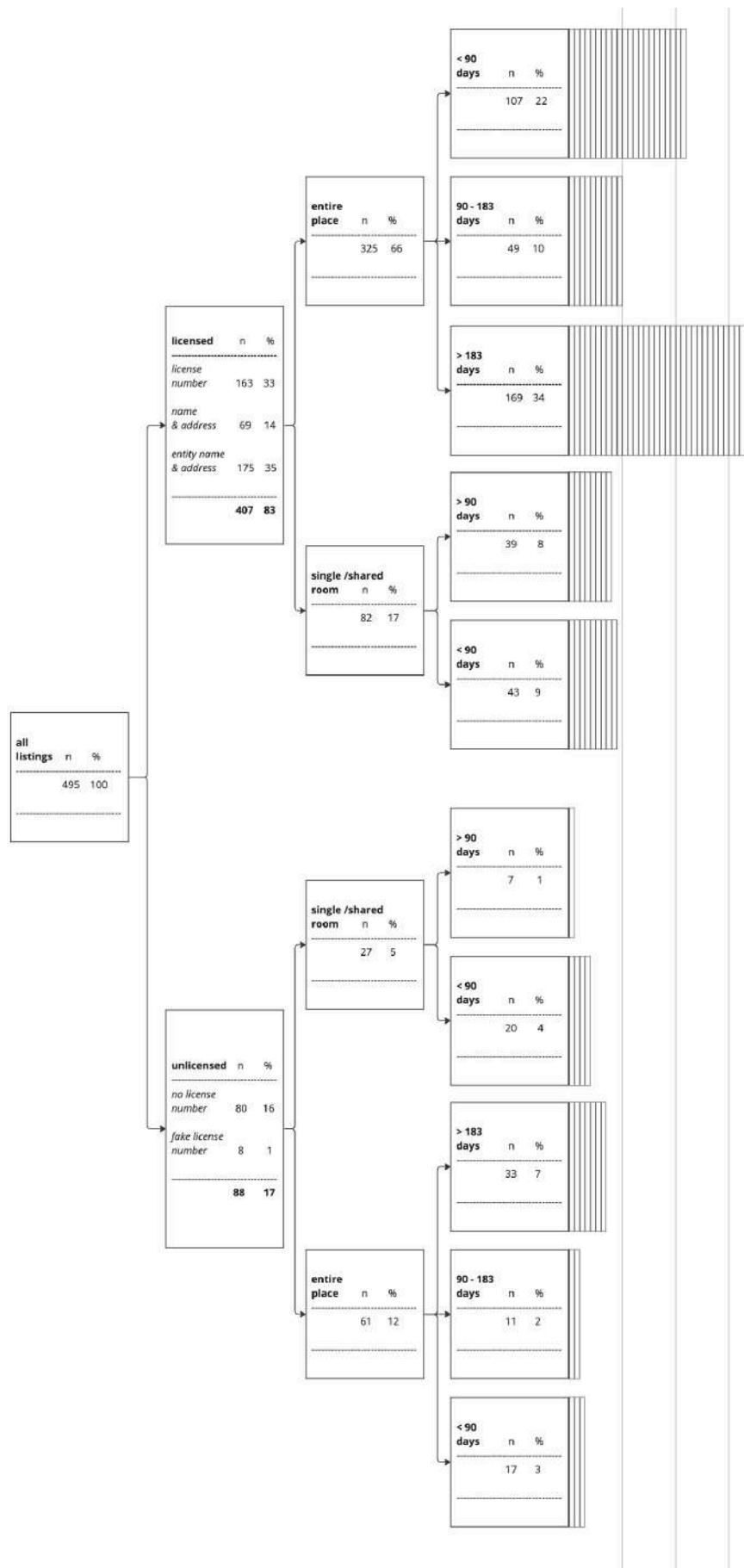


Figure 5: Assessment of (il)legality (by author)

4.5. Dominant role of Professional Providers

Much has already indicated that the *Friedrichshain* short-term rental market is largely shaped by professional actors, primarily operating within the bounds of legality. Precise results for assessing *professionalization* according to the outlined framework in Chapter 3.3.2.2. will now be provided. Based on property types, 112 listings were classified as professional. Among the property type categories, 16 categories indicate unequivocally professional offerings. These include categories such as *private room in bed and breakfast* or *room in hotel*. The majority of these 112 professional listings pertain to categories like *room in hotel* (12), *shared room in hostel* (23), and *entire serviced apartment* (46). Another 72 listings are licensed under business information as *legal entity*. In this study, it is assumed that all providers who license their listings through business information offer their services in a business-to-peer model, even if they provide only one listing, and are thus classified as professional.

Among the remaining listings, 94 are multi-listings. These listings are also categorized as professional listings. Consequently, out of the 495 listings, 278 are professional offerings, constituting over half of all active listings in *Friedrichshain*. Thus, this study supports the findings of other studies that Airbnb is increasingly functioning as a platform for professional providers, while the original peer-to-peer concept seems to play only a subordinate role. Additionally, it has been shown that a significant portion of the professional offerings (113 listings) are attributed to individual listings, indicating that *professionalization* is not restricted solely to providers offering multiple listings.

A synthesis of the two thematic areas, (il)legality and *professionalization*, demonstrates that almost all professional listings have a license. Only 29 out of 278 do not meet this requirement. In contrast, 150 out of the 278 listings are licensed listings rented out for over 183 days. This confirms the hypothesis that professional providers are the primary actors in the short-term rental market, withdrawing housing from the regular housing market for the long term (Sommer and Stors 2021). However, it should be noted that an assessment of the role of traditional accommodation establishments such as hotels and hostels has not yet been conducted at this juncture.

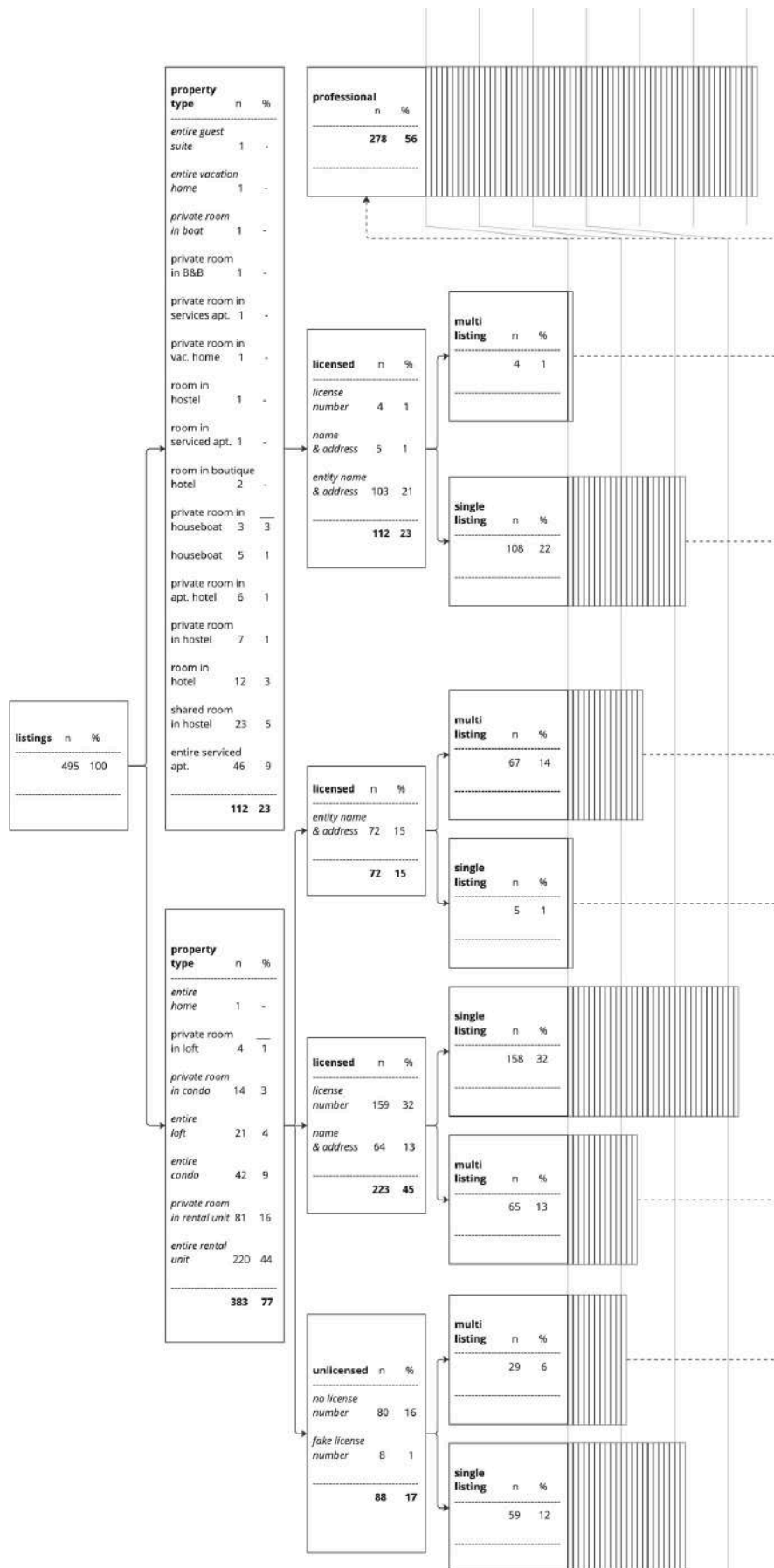


Figure 6: Assessment of professionalization (by author)

4.6. Multiply Listed Apartments

Before presenting the results of the small-scale distribution of the short-term rentals, it's necessary to explain the phenomenon of multiply listed apartments, which was identified during the precise geolocation process. Through photo analysis, it was observed that in some cases, multiple listings promote the same housing unit. Thirteen apartments were identified, advertising a total of 31 different listings using shared images – and even license numbers.

Such multiply listed apartments can be seen as a strategy to attract a broader audience to the same living space. For instance, a multi-bedroom living space could be promoted through a listing for the entire apartment as well as through listings offering individual rooms within the apartment. This positions the apartment on the Airbnb platform to be recommended for both individual travelers and larger groups, or to be attractive for individuals as well as shared living situations for longer rentals. This phenomenon provides landlords with the opportunity to increase the occupancy rate of the housing unit, resulting in higher earnings. This phenomenon is also perceived as a form of *professionalization* (Bosma 2022).

The phenomenon of multiply listed apartments leads to the realization that the total number of listings does not necessarily equate to the total number of apartments in the study area, which has implications for the quantity of illegal and professional listings. For spatial research, this phenomenon is noteworthy as it could introduce minor distortions in results, given that multiply listed apartments are not identified in any studied work and the data needs corresponding adjustments. The severity of such distortions needs individual evaluation.

The actual number of apartments offered in *Friedrichshain* is 477, which is 3.5 percent less than the total of 495 active listings. At first glance, this might not seem particularly high; however, it becomes apparent that these results lead to substantial distortions in previously established subcategories. Logically, all affected multiply listed apartments belong to professional providers, as *professionalization* is partly defined by multi-listings. The relative difference between professionally offered apartments (260) and professional listings (278) is therefore already significantly higher at 6.5 percent. Additionally, it's important to note the number of affected unlicensed single rooms. Out of the total 26 unlicensed single rooms, 6 are rooms distributed across only two apartments, which are also offered as entire apartments on the platform. Another insight is that 8 out of the total 18 listings with a minimum rental duration of 3 months can be attributed to only one provider and two of their apartments. These observations consequently reinforce the understanding that the proportion of illegal short-term rentals in *Friedrichshain* is quite low. They also lead to the fact that the absolute number of short-term rentals must be reduced once more. All subsequent results, especially those concerning small-scale distribution, are based on an adjusted dataset where multiply listed apartments have been combined into single short-term rental apartments (see Figure 7).

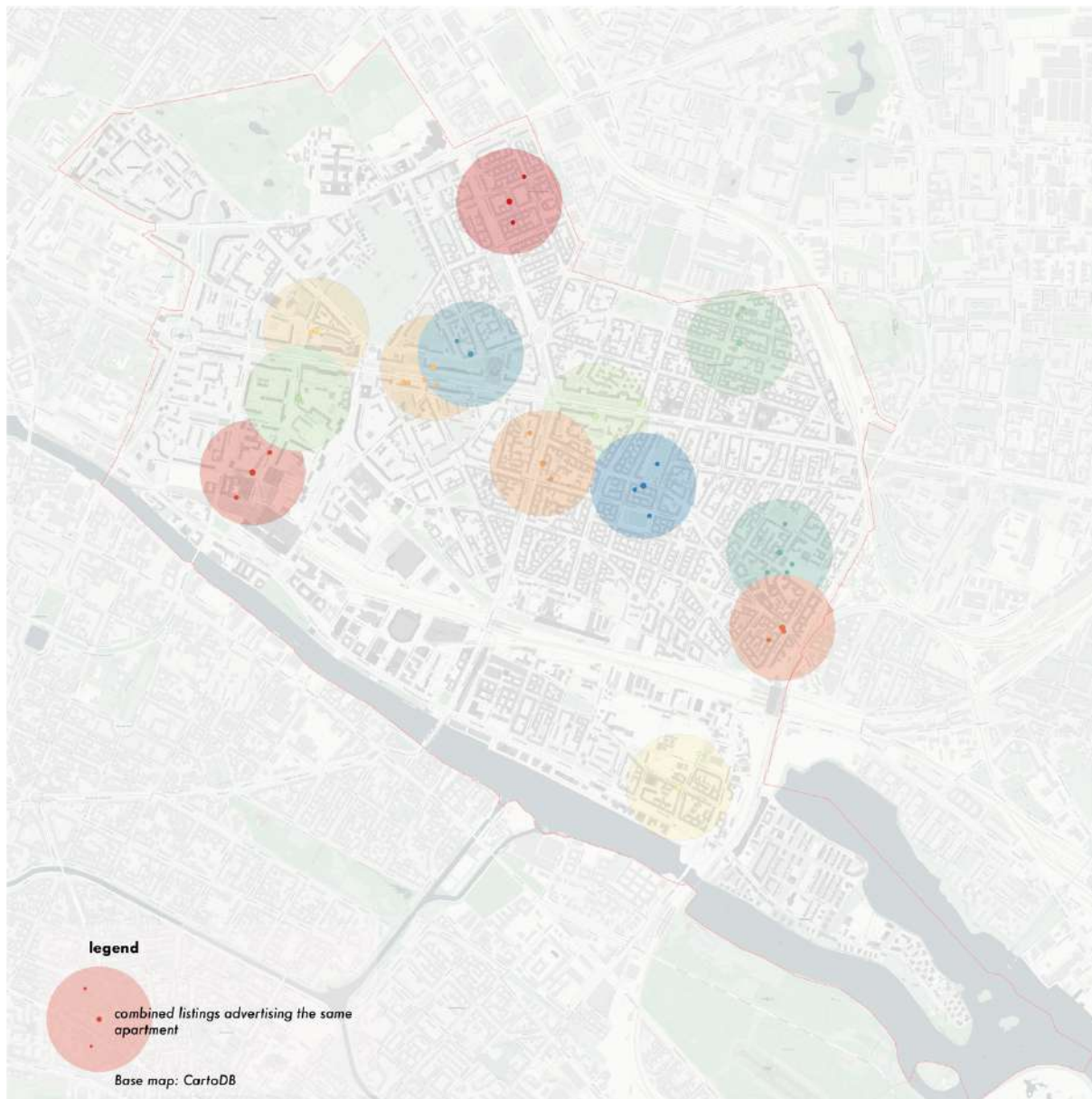


Figure 7: Multiply listed apartments (by author)

4.7. Concentration in the Historic Neighborhood

Out of the active and singly listed apartments, 375, or 78 percent, could be precisely localized. In 232 cases, this was achieved through analyzing the provided addresses as stated in the licensing. An additional 143 apartments were localized by cross-referencing photos from the respective Airbnb listings with publicly available satellite imagery and *Google-Street-View* images.

The precisely localized apartments are distributed across a total of 204 buildings and 6 boats, with 9 buildings lying outside the study area. The inclusion of buildings outside the study area is explained by Airbnb's anonymization of the precise locations of listings. Seven buildings outside the study area are located less than 250 meters from the study area's boundary. As Airbnb anonymizes listing locations by up to 250 meters, these affected listings were

mistakenly included in the dataset during data filtering. However, in two other cases, the affected buildings are situated far beyond the study area (Figure 8). The apartments in question were localized based on provided addresses, and no alternative localization could be determined through image analysis of their corresponding pictures. It is assumed that the provided addresses in these two listings are inaccurate.

When compared to the analysis of spatial distribution based on imprecise location data, precise localization reveals a clear concentration of short-term rental apartments within a few buildings. While only one short-term rental apartment is located in 153 buildings, there are 38 buildings that house between 2 and 9 listed short-term rental apartments. In four buildings, there are even more than 10.

Within the study area, the buildings in which short-term rental listings could be located are distributed quite unevenly. A notably large portion is situated in the historically influenced western part of *Friedrichshain*, particularly around *Boxhagener Platz*. Given that this is the vibrant center of the neighborhood, this observation is not greatly surprising. The northern part of the study area also maintains a relatively high concentration of short-term rental apartments. Interestingly, this area is characterized as a more tranquil residential area with not much anticipated tourist activity. However, the most striking contrast is between the historically shaped western portion and the eastern part of the study area. The latter exhibits a notably lower concentration of short-term rental apartments. These observations of the spatial distribution of short-term rentals are further pronounced when incorporating the imprecisely located listings. Even these listings are predominantly situated in the western part of the study area, with only sporadic offerings in the eastern part.

While this study does not primarily aim to identify reasons for the spatial distribution of short-term rentals within the neighborhood, a few points can be mentioned that could explain the lower concentration of short-term rental in this area. Aside from lower urban and commercial density, the western part is notably characterized by an older average population age, as well as a significantly higher number of social housing and publicly owned apartments (Bezirksamt Friedrichshain Kreuzberg 2021). It is thus plausible that residents in this area are less inclined to engage with the new phenomenon of short-term rentals, possibly due to a more skeptical stance. Moreover, residents in this area are likely to feel less economic pressure, given their relatively lower rents. Consequently, they may not be as driven to generate supplemental income, as has been evidenced in other parts of Berlin (Stors and Kagermeier 2017; Bosma 2022). Additionally, due to its less attractive urban structure, this part of the area probably exerts less allure on tourists. An interesting trend is also evident in the southwest new entertainment district around the *Mercedes-Benz Arena*. While predominantly commercial in nature, several residential buildings are under construction in this area. Strikingly, both completed residential buildings already contain short-term rental apartments, with one of them hosting as many as 20 units.

It is important to note that the high number of precisely located short-term rental apartments is attributed to the regulations of the ZwVbG. The possibility of using address information for licensing makes it considerably easier for the responsible district authorities to detect violations of the ZwVbG.

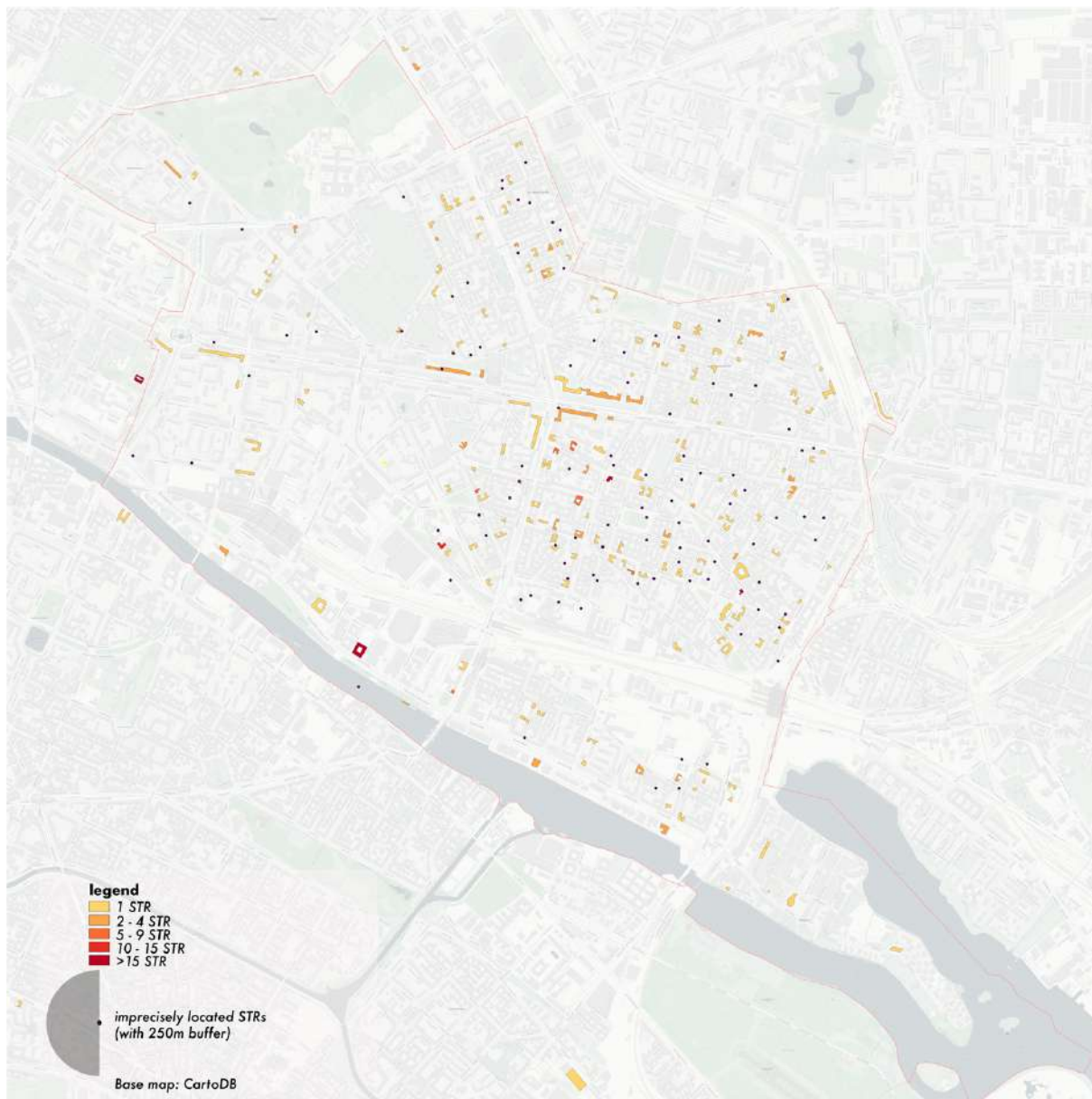


Figure 8: Short-term rentals by building (by author)

4.8. Platform for Traditional Hospitality Businesses

The notable concentration of Airbnb listings within a few buildings raises the suspicion that these buildings might be traditional hospitality services. This suspicion was confirmed by cross-referencing the results with publicly available geodata on hotels and hostels. Among the 7 buildings and 1 boat within the study area, there are classic hotels or hostels that also offer their accommodations through the Airbnb platform. This assessment also applies to two

establishments located just outside the study area's boundary (see Figure 8). A cross-reference with the Berlin geodatabase reveals that two of the implicated hotels are classified as residential buildings, indicating that they might have provided apartments for the regular housing market before being repurposed as hotels. All other buildings are classified as hotels or commercial structures, implying that they were constructed as hotels from the outset.

These findings thus corroborate the suspicion already raised during the licensing analysis, suggesting that traditional hospitality services constitute a significant portion of the listings on the Airbnb platform. In the examined case, there are 30 instances of listings in hotels or hostels, and an additional 4 instances involve hostel accommodations on a boat. Furthermore, 18 offerings pertain to traditional hospitality establishments located just outside the study area. As the affected listings are exclusively used for tourist accommodations, they do not permanently withdraw housing from the regular rental housing market. Consequently, in these cases, there is no long-term housing diversion and the term misuse does not apply within this context.

Traditional Tourist Accommodations	Address	Number of Listings	Building Category
Michelberger Hotel	Warschauer Str. 39-40, 10243	1	Office Buildings
Urban Dreams III	Bänschstr. 79, 10247	1	Residential building with trade and service
Gold Hotel Berlin	Weserstraße 24, 10247	3	Hotel, Motel, Guesthouse
AMANO Hotel	Stralauer Pl. 30-31, 10243	3	Hotel, Motel, Guesthouse
STAYERY Apartments Friedrichshain	Holteistraße 20, 10245	4	Hotel, Motel, Guesthouse
NuWave Hotel	Gubener Str. 46, 10243	5	Residential Building
Sunflower Hostel	Helsingforser Str. 17, 10243	13	Residential Building
Eastern Comfort Hostel Boat	Mühlenstraße 73, 10243	4	Boat
<i>Gold Palais Hotel (outside study area)</i>	<i>Greifswalder Str. 6-7, 10405</i>	<i>1</i>	<i>-</i>
<i>Singer Hostel (outside study area)</i>	<i>Singerstraße 109, 10179</i>	<i>17</i>	<i>-</i>

Table 3: Traditional tourist accommodation services (by author)

4.9. Dominance of New Professional Businesses

For all other buildings where more than five short-term rentals were located, the type of providers in these cases was also determined. In total, 84 apartments spread across 8 buildings are attributed to non-traditional lodging establishments that are not conventional hotels. These establishments, with names like *Pure Berlin Apartments*, *Apartmently*, or *Luxoise Apartments*, offer not hotel rooms, but rather specialize in the rental of apartment-like accommodations. A cross-reference with the Berlin Geodatabase further reveals that, except for one building, all the affected structures are classified as residential properties.

Therefore, it is plausible that in these instances, residential space is repurposed for tourism-related purposes, consequently withdrawing units from the regular housing market.

Both traditional and new lodging establishments possess licenses. Consequently, the high proportion of licensed listings with extended booking availability can be attributed to this fact, leading to the conclusion that the short-term rental landscape in *Friedrichshain* is primarily dominated by professional providers.

Spatially, the aforementioned commercial providers of conventional tourist accommodation services, as well as the newer apartment-oriented providers, are heavily concentrated between the historical center and the new entertainment district to the south. Only the *Singer Hostel* to the west of the study area deviates from this pattern. Among all short-term rental, 118 are concentrated in the mere 18 buildings of these described providers, accounting for approximately one-third of all located apartments.

„New“ Tourist Accommodations	Address	Number of Listings	Building Category
Luxoise Apartments	Gärtner Str. 32, 10245 Berlin	5	Residential Building
Boxi Studios Berlin	Boxhagener Straße 17, 10245	1/6	Residential building with trade and service
numa Kater Apartments	Warschauer Straße 46-47, 10243	7	Residential building with trade and service
Kiez Box TwentyForSeven private room	Boxhagener Str. 13, 10245	6/8	Residential Building
numa Sketch Rooms & Apartments	Grünberger Str. 54, 10245	8/9	Residential building with trade and service
Apartmently	Simon-Dach-Straße 46, 10245	18	Residential building with trade and service
Apartments elPilar Friedrichshain	Boxhagener Str. 53, 10245	19/20	Residential Building
Pure Berlin Apartments & Luka's Apartments & Blueground Germany	Mühlenstraße 20, 10243	20/20	Residential Building

Table 4: "New" tourist accommodation services (by author)

4.10. STRs in newly built housing

The precise geolocation of short-term rental apartments in *Friedrichshain* allows for a detailed analysis of the age categories of the affected buildings. It was found that out of the 224 located apartments, by far the largest portion is situated within buildings constructed before 1920. This is not surprising, as buildings of this age group constitute approximately half of the building stock in the study area. In contrast, the second-largest number of apartments is found in newly constructed buildings built after 2010. However, the portion of the building stock in this age category is significantly smaller, accounting for only 6 percent. Thus, short-term rental apartments are disproportionately frequent in new buildings within the study area. In contrast, short-term rental accommodations within buildings from the socialist construction period between 1940 and 1990 are underrepresented compared to the overall building stock.

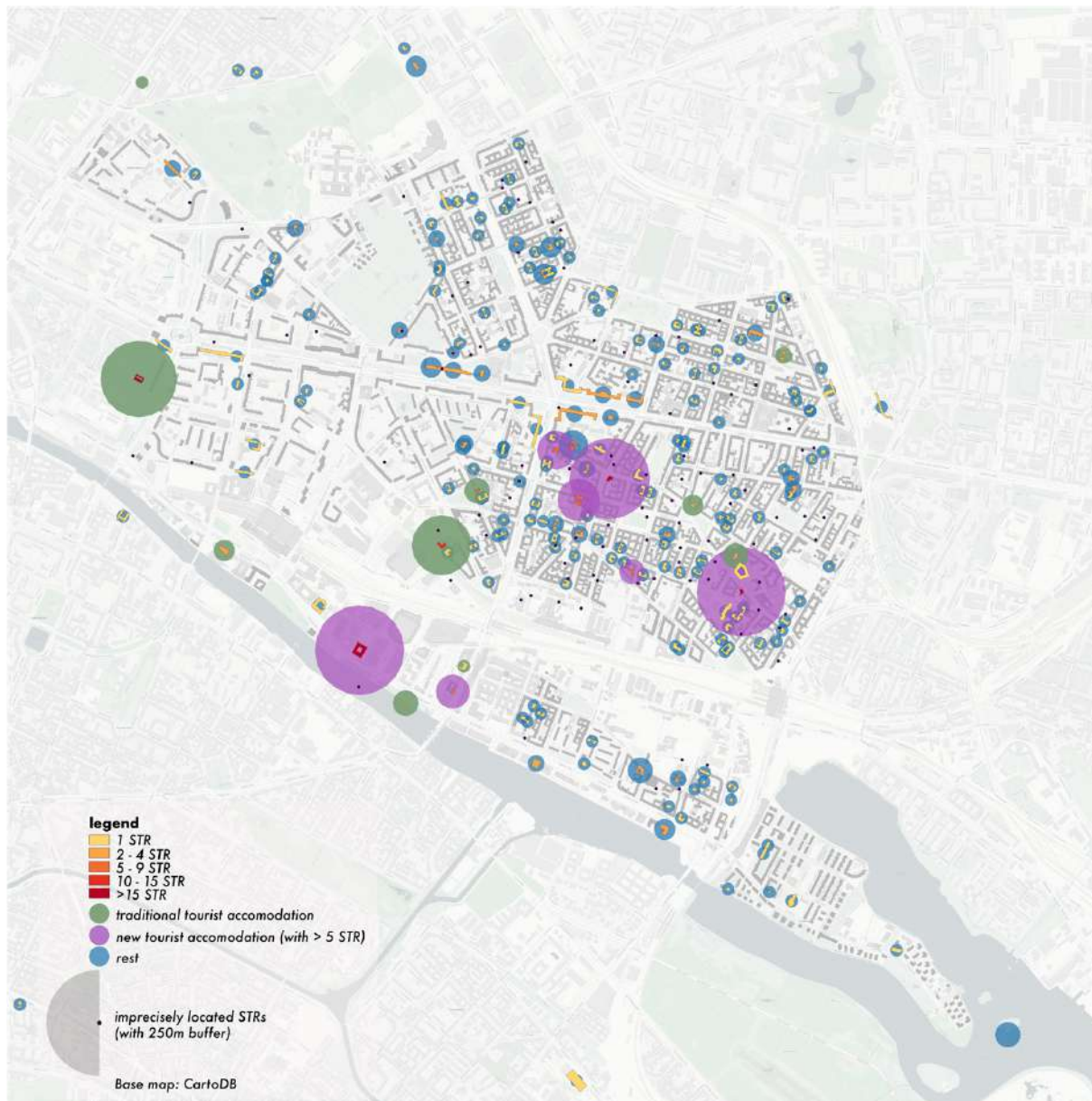


Figure 9: Spatial distribution of short-term-rentals and tourist accommodation services (by author)

The localization of the present listings is not solely limited to the building level but, in some cases, extends to the positioning of the apartments within the buildings. Based on the conducted image analysis, 46 apartments were identified to be situated in roof-top spaces. Among these roof-top apartments, 38 are located in buildings built before 1920. Additionally, two apartments each are situated in buildings from the age categories of 1940 to 1990 and 1990 to 2010. However, a cross-reference between current and historical satellite images reveals that a total of 34 of these roof-top apartments were constructed after 2010, and another 11 were built between 1990 and 2010. Only one apartment was present before the oldest surveyed satellite imagery. Therefore, all identified roof-top apartments, except for one, were reclassified according to the actual construction age of the apartments, differing from the age of the underlying buildings. The classification based on the actual construction age of the apartments confirms and strengthens the observations made earlier. Out of all the

located short-term rental, 74 are apartments built after 2010. Accurate age categories for Berlin's housing stock are available only on the building level, not on the apartment level, thus comparing apartments and buildings may lead to some distortion. Nonetheless, the general trend is discernible, indicating that short-term rental accommodations in *Friedrichshain* consist disproportionately of newly built apartments compared to the overall building stock.

It should be noted that these roof-top apartments are classified as new construction units in the Berlin rental law when compared to the apartments below them in the same building. For instance, the Berlin *Rent Rndex*, which establishes the customary local rent for housing throughout the city, sets significantly higher benchmark rents for apartments of newer age categories. No maximum rents are prescribed for apartments constructed after 2018. Consequently, roof-top apartments can generally command significantly higher rents than apartments on the lower floors.

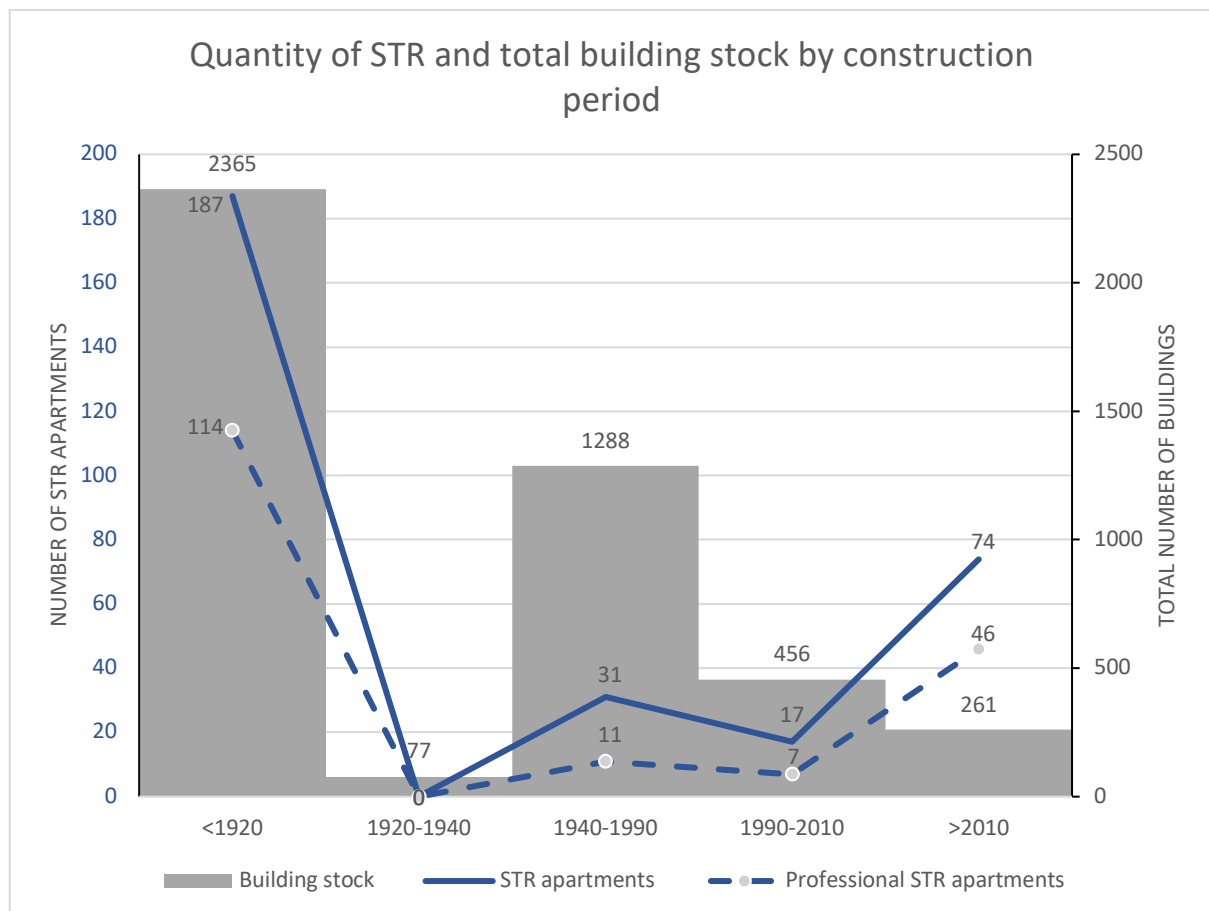


Figure 10: Short-term rentals and building stock by construction period (by author)

4.11. Rent Gap as economic explanation for concentration of STR

For a significant number of short-term rentals, precise locations and apartment ages are available. As described in Chapter 3.3.2.5., the exact sizes of 61 entire apartments with high booking availability of over 183 days were determined. Using this information, the *Rent Gaps* for these apartments were calculated as the difference between earnings from short-term rentals on one hand, and maximum rental income from long-term rentals on the regular housing market on the other hand. The results suggest that the *Rent Gap Theory* provides an economic explanation for the prevalence of long-term short-term rentals usage in *Friedrichshain*.

Figure 11 displays all calculated *Rent Gaps* for the 61 affected apartments, sorted by size. The gray values represent results when the actual incomes are based on the average rents achievable according to the Berlin *Rent Index*. The black values depict the *Rent Gaps* formed when the actual earnings match the maximum permissible rents. Additionally, a ten percent increase was applied to the calculation of actual earnings, as allowed by law for new leases. It is evident that calculated *Rent Gaps* based on maximum values are negative in nine cases, while they are significantly positive for 52 apartments. The largest *Rent Gap* is close to €2,440. When using the average rents from the Berlin *Rent Index* instead of maximum rents, positive rent gaps are present in 57 apartments. In this case, the highest calculated *Rent Gap* is about €2,700.

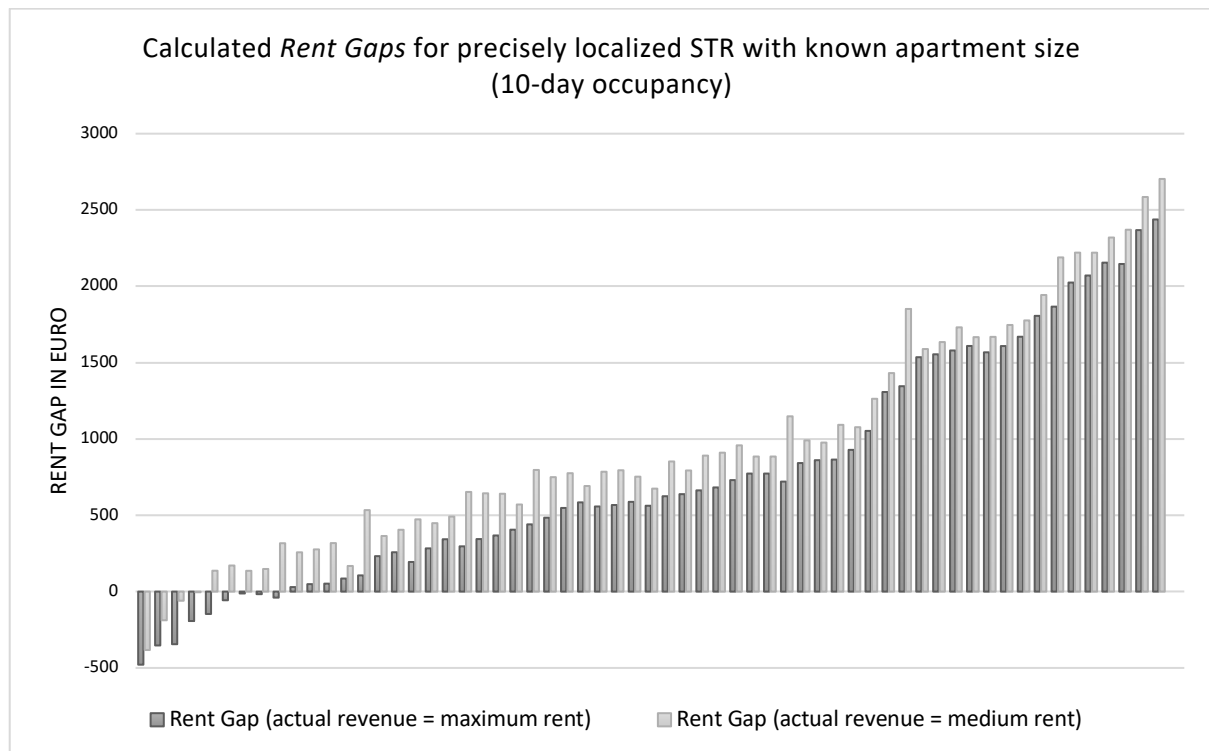


Figure 11: Calculated *Rent Gaps* (by author)

The larger the positive *Rent Gap*, the more economically attractive it is to rent out the corresponding living space as short-term rental rather than through the regular housing market. The calculations reveal that this economic incentive is present in most cases. For approximately one-third of the analyzed apartments, this incentive exceeds €1,000 per month. The fact that individual *Rent Gaps* are sometimes higher than maximum monthly rents on the regular housing market demonstrates the extreme disparities between regular market and short-term rental market. Through conversion into short-term rentals, landlords can earn multiples of regular rentals, every month. It should be noted that the occupancy rate in the calculation model is set at 10 days, which is relatively low. Even with an occupancy rate lowered to four days, 13 apartments still exhibit a positive *Rent Gap*. This implies that renting out these apartments as STR remains economically viable compared to regular renting, even when guests book the short-term rentals for only four days a month, leaving the apartment vacant for the rest of the month. With each additional rented day, the *Rent Gap* increases by the daily profit from short-term rental earnings.

Regarding negative *Rent Gaps*, it should be mentioned that the largest negative gap corresponds to an apartment that is likely to be rented out on a longer-term basis. An analysis of the last three reviews for the affected apartments indicates that guests stayed there for periods ranging from one to five months. Accordingly, the occupancy rate is likely significantly above 10 days. With an occupancy of 15 days, the *Rent Gap* for this apartment would also be positive. Similar circumstances apply to another apartment with a minimum rental duration of 30 days.

The results highlight the magnitude of discrepancies between earnings from regular and short-term rentals in *Friedrichshain*. It should be noted that the sample is not representative of the total number of available high-availability short-term rental due to limited data availability across multiple factors. Particularly concerning the age classes of the apartments, the sample is relatively homogenous. Only 8 out of the 61 examined apartments were built before 1920. However, it's worth emphasizing that the *Rent Gap* remains significantly positive even for apartments of younger age classes that were investigated, despite the highest maximum rents for long-term rentals on the regular housing market being applicable here. In the specific example, the *Rent Gaps* for two out of the five newly built apartments are over €1,000, placing them in the upper third of the values. For the other two, it's around €200 and €640. Regarding the three apartments from the 1940-1990 age class in the sample, no consistent pattern can be observed. One apartment shows a negative *Rent Gap*, which is the aforementioned apartment with a minimum rental duration. For the other two apartments in this category, *Rent Gaps* of approximately €85 and €1,500 were calculated. Statements regarding apartments built after 2018, which are not subject to the regulations of the Berlin *Rent Index*, cannot be inferred from the calculations since none of these apartments are present in the sample.

	<i>med_rent/ month in €</i>	<i>max_rent/ month in €</i>	<i>STR price /night in € (reduced by service & cleaning fee)</i>	<i>STR_profit /month (10 days occupancy rate; reduced by operating costs, electricity / gas)</i>	<i>Rent Gap in € (actual revenue = med_rent)</i>	<i>Rent Gap in € (actual revenue = max_rent)</i>
Mean	494,27	696,99	193,20	1460,08	965,81	763,09
Standard Error	28,06	38,29	10,10	93,93	94,45	95,73
Median	475,86	698,94	183,36	1366,80	794,94	588,00
Mode	475,86	703,56	133,44	1131,90	884,95	773,30
Standard Deviation	219,13	299,05	78,85	733,62	737,69	747,65
Range	1007,67	1460,29	347,52	3112,50	3086,00	2916,60
Minimum	118,54	172,00	65,28	152,40	-382,64	-478,78
Maximum	1126,20	1632,29	412,80	3264,90	2703,36	2437,82
Sum	30150,33	42516,29	11784,96	89064,63	58914,30	46548,34
Count	61	61	61	61	61	61

Table 5: Descriptive statistics Rent Gap calculation (by author)

It must be noted that due to limited data availability, the sample is not representative of the total number of available short-term rentals with high booking availability across various factors. Specifically, concerning the construction age classes of the apartments, the sample is relatively homogeneous. Only 8 out of the 61 examined apartments were built after 1920. However, it is worth highlighting that the *Rent Gap* is also significantly positive for apartments of younger construction age classes that were studied, even though these apartments have the highest maximum rental values in the regular housing market. In this specific example, two of the five newly constructed apartments have *Rent Gaps* exceeding €1,000, placing them in the upper third of values. The other two have *Rent Gaps* of approximately €200 and €640. For the three apartments in the construction age class between 1940-1990 in the sample, no consistent pattern can be observed. One apartment has a negative Rent Gap, which is the previously mentioned apartment with a minimum rental duration. The other two apartments in this class have Rent Gaps of around €85 and €1,500. Statements regarding apartments built after 2018, and therefore not subject to the regulations of the Berlin *Rent Index*, cannot be inferred from the calculations as none of these apartments are present in the sample.

The results illustrate the extreme disparities between income from regular rentals and short-term rentals in *Friedrichshain*. Based on the available data, the theory is suitable as an explanatory approach for various building types and locations within the study area, thus confirming that the phenomenon is not limited to individual buildings or properties but extends as an explanatory framework for entire neighborhoods. The observations of Wachsmuth et al. (2018) have thus been demonstrated in the case of Friedrichshain.

4.12. Combined *Rent Gaps* for Major Providers

The sample is also not representative because a large portion of the affected short-term rentals is distributed among a few buildings. Specifically, 29 of the analyzed apartments are located in just three buildings. These are buildings that were identified as commercial providers of apartments in Chapter 4.9. Providers of such short-term rentals appear to be professionally operated companies that convert not only individual apartments but entire buildings into short-term rentals. For these affected buildings, the combined *Rent Gap* can be calculated as the sum of all the *Rent Gaps* of the apartments within them, revealing the economic incentives of this larger-scale conversion of residential space.

In the case of the three affected buildings, there are actually only two providers (*Numa* and *ElPilar*), as one of the providers operates two of the buildings. The calculated *Rent Gaps* for all 16 affected apartments in *ElPilar*'s building (Figure 13) amount to approximately €10,200 (actual revenue = maximum rent) or €13,500 (actual revenue = medium rent) that the company can earn monthly through renting the apartments as short-term rentals, compared to regular rentals of the affected apartments. For the second provider, *Numa*, a combined *Rent Gap* of €24,600 or €26,500 can be calculated for their apartments in two buildings.

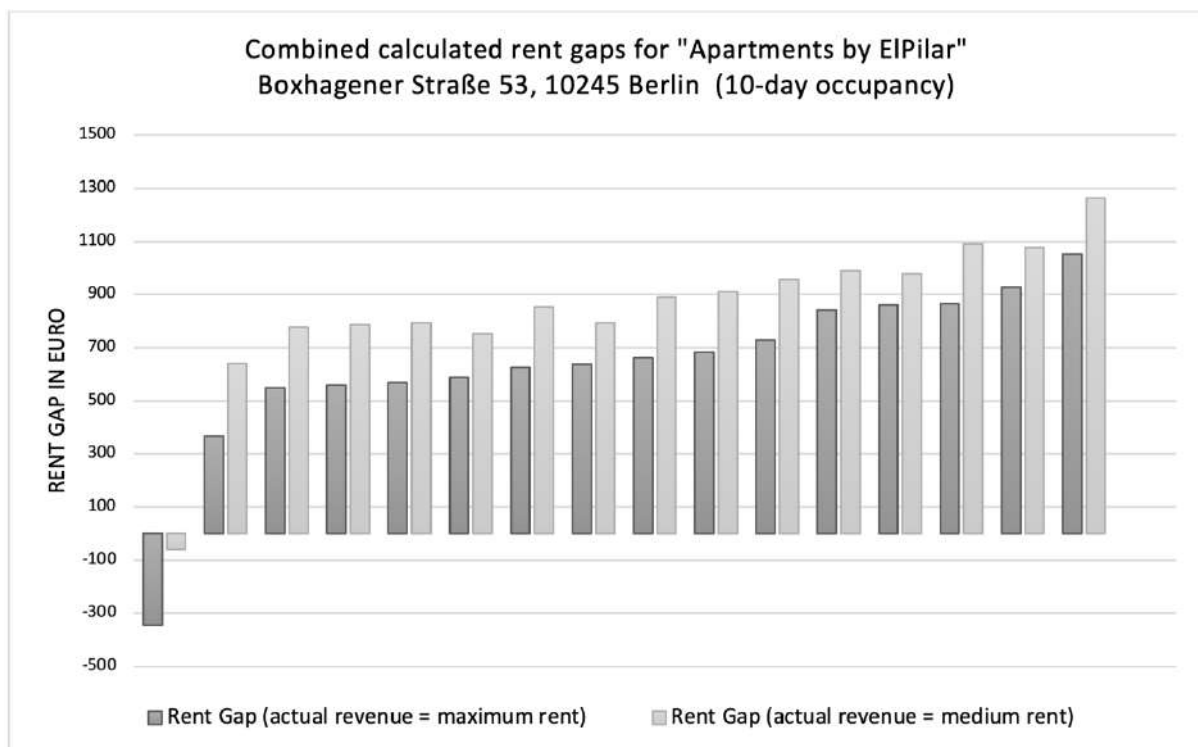


Figure 12: Combined *Rent Gaps* for "Apartments by ElPilar" (by author)

Considering these high values, it becomes clear that the economic attractiveness of the model seemingly has almost unlimited potential for expansion, making it highly appealing to become active in the *Friedrichshain* short-term rental market and promote the conversion of regular housing into short-term rental, even at the level of entire buildings.

In specific cases, it must be assumed that this highly professionalized form of rental also incurs considerable additional costs. Managing apartments and entire buildings, as well as providing additional services for guests, likely reduce the calculated *Rent Gaps*. However, it can also be assumed that both companies have cost-saving strategies and methods to increase the occupancy rates of the apartments.

Online research on the provider *Numa*, which operates the two described buildings in *Friedrichshain*, confirms this. The luxurious apartments are offered not only on Airbnb but also on numerous other platforms such as *booking.com* and even have their own website (*numastays.com* 2023). They offer short-term rentals in 9 properties across Berlin. The Berlin-based company owns 20 properties throughout Germany and 64 properties across Europe (*ibid.*). Their newest property is set to open in September 2023, right in the center of *Friedrichshain*. Consequently, the tourist market in *Friedrichshain* seems to be far from saturated, and the further expansion of the short-term rental market indicates that the *ZwVbG* still leaves room for internationally operating companies to invest capital on a large scale in the *Friedrichshain* housing market, driven by the economic incentive to convert housing into short-term rentals and thereby close the *Rent Gaps* in the neighborhood.



Figure 13: "Apartments by ELPilar" building (by author)

5. Discussion and Conclusion

The main objective of this research work was to understand the short-term rental market at a micro-level. In conclusion, it can be stated that this objective has been achieved. The analysis of spatial data has allowed an assessment in the Berlin district of *Friedrichshain* to determine the extent to which the supply of short-term rental apartments offered on the Airbnb platform complies with existing regulations, who the central actors on the provider side are, and how the supply is distributed within the neighborhood. This was made possible, in particular, through an exploratory research approach and the use of publicly available technical tools, achieving a high level of detail. The success of this exploratory approach was far from certain at the beginning of the research project. Ultimately, however, this approach contributed to the generation of detailed data, which, among other things, allowed testing the applicability of Smith's (1979) *Rent Gap Theory*, originally an economic explanation for *gentrification* processes, as an explanatory approach for STR activity in the study area. Along the way to answering the questions, numerous results were generated that could be valuable for the methodological approach of similar studies. Additionally, this work provides many methodological guidelines for future research based on spatial digital data, which are increasingly important in spatial research. The central findings regarding the research questions will be summarized below, and two hypotheses will be formulated, particularly in relation to questions that remain unanswered at the end of this work.

As the first objective of this work, an examination was conducted to determine the extent to which the supply of short-term rental in *Friedrichshain* complies with the Berlin ZwVbG. Contrary to initial assumptions, as a result of other research findings and public reporting, it was found that only a small portion of the data can be classified as formally illegal. More than 80 percent of the examined listings are, therefore, licensed offerings. However, this is in stark contrast to the fact that a significant portion of the supply does not align with the substantive regulations of the ZwVbG. Forty percent of all listings can be booked for more than half of the year, with an additional 12 percent available for a significant period ranging from three months to half a year, exceeding the specific limits on the number of days when short-term rental of residential space is allowed.

In the course of addressing the second objective of this work, traditional accommodation providers were identified as actor groups that, at least in part, offer an explanatory approach to this discrepancy. Out of the originally 495 listings examined, 52 listings can be attributed to hostels and hotels, indicating that these facilities contribute significantly to the offerings on the Airbnb platform. The fact that traditional accommodation services is thus considered an integral part of the short-term rental market demonstrates that the frequently prevailing distinction between the short-term rental market on one side and hotels and hostels on the other side is no longer up to date. In *Friedrichshain*, both seem to benefit from each other's offerings.

However, in terms of the actors in the *Friedrichshain* short-term rental market, particular emphasis must be placed on professional large-scale apartment providers that primarily convert regular residential space into short-term rental. It was revealed that they concentrate primarily on the historic eastern part of the study area and focus their activity not only on individual apartments but entire buildings. While the presence of licenses in combination with high booking availability is understandable for traditional hotels, the opposite applies to apartment providers. All examined professional large-scale apartment providers operate as licensed providers. In the final part of this work, an economic explanation for their activity in the *Friedrichshain* short-term rental market could be provided, but this approach lacks a legally plausible explanation. Considering the ZwVbG, their business model is simply not comprehensible, particularly in terms of the fact that new actors continue to enter the market. Based on these results, it can be concluded that the case study of *Friedrichshain* shows that the existing Berlin regulations are indeed enforced. However, it becomes evident that these regulations leave room for professional providers to establish themselves in the short-term rental market despite the regulation. The central question therefore lies on what the ZwVbG does *not* regulate. Therefore, in order to create more effective rules, it is imperative to examine the exact strategies used by short-term rental providers to bypass regulations and identify the corresponding legal loopholes.

One hypothesis that can be formulated in this regard and can serve as a starting point for future research projects is that financially strong actors with international capital backing make use of the compensation options provided by the ZwVbG to expand in the short-term rental market. The regulations stipulate that by creating equivalent replacement housing elsewhere, the misuse of residential space is permitted (ZwVbG 2023). Given the magnitude of the calculated *Rent Gaps* between regular rental income and potentially achievable profits from short-term rentals, it can be inferred that the costly creation of replacement housing may be justifiable if, in return, short-term rentals are enabled in the tourist-attractive *Friedrichshain* with substantial *Rent Gaps*.

Considering the associated high costs for affected providers, it is also a logical consequence that they position themselves particularly well within tourist neighborhoods to generate stable income in the fluctuating tourism market and specialize in luxury segment offerings. This hypothesis would provide an explanation from both economic and legal perspectives for the continued entry of new large-scale providers into the short-term rental market. The completion of the second objective provided a possible basis for testing this hypothesis, as it identified specific objects and actors in the *Friedrichshain* short-term rental market.

The second and third parts of this work aimed to precisely locate short-term rental apartments and categorize the affected buildings by construction age class to assess which part of the building stock is particularly impacted by short-term rental activity. One of the major challenges in the fine-grained analysis of short-term rental markets based on publicly available

listing data is their spatial inaccuracy. The platform operator Airbnb anonymizes user data by providing coordinate points with location information deviating up to 250 meters from the actual location of the listed apartment. Therefore, analyzing the distribution of short-term rentals at a micro-scale is very complicated. The goal of this work was to overcome this anonymization and make statements about the spatial distribution of short-term rentals below the neighborhood level. This was achieved by analyzing user-generated image data provided by Airbnb hosts on the platform's website to visually describe the apartments. Information about the exact location of the apartments was extracted from these images and cross-referenced with publicly available satellite and *Google Street View* images. In this way, 143 apartments were precisely located. An additional 232 short-term rental apartments were located based on the specifications of the Berlin ZwVbG, which allows for licensing by providing address data that must be publicly visible. Using this data, it was demonstrated that 375 short-term rentals are distributed across 204 buildings in the area, with a strong concentration in the historically influenced eastern part of the study area. It was established that a disproportionately large part of the short-term rental supply is concentrated in new construction apartments, with roof-top apartments playing a central role. In 46 cases the offers are located in such apartments and are thus classified as new buildings in terms of tenancy law. Whether this pattern can be economically explained by the *Rent Gap* Theory was the subject of the last part of the work.

For the apartments, address and building age data from previous investigations were available. Additionally, data on the exact size of the apartments were available for 61 of them. Similar to the previous step of precise geolocation, this data was obtained from user-generated information on the Airbnb website. Using the Berlin *Rent Index*, it was possible to calculate the maximum allowable rents for the affected apartments on the regular housing market. These could then be compared to the potential rental income from short-term rentals, and the respective *Rent Gaps* were calculated. In the results, it was proven that the *Rent Gaps* of individual apartments are mostly clearly positive, and short-term rental often generates multiples of income compared to regular rental. Specific patterns for apartments of different construction age classes could not be identified because the majority of the examined buildings belong to the same construction age class. Only five apartments were newly built after 2010. While they tended to have higher *Rent Gaps*, no clear trend was discernible.

The results, however, largely confirm the *Rent Gap Theory* as an economic explanation for short-term rental activity in *Friedrichshain*. They also clearly indicate the importance of state regulation of the short-term rental market to counteract these economic forces, particularly in the case of Berlin, where the regular rental market is comparatively heavily regulated, resulting in substantial *Rent Gaps* as the difference between what the local population pays as regular rent and what an international tourist audience is willing to pay.

The fact that new apartments are particularly attractive as short-term rental apartments raises questions, especially because it is expected that the *Rent Gap* is relatively small in this segment, as these apartments can achieve the highest income on the regular rental housing market. For new buildings completed after 2018, the rent on the regular rental market is even freely determinable. Therefore, future research projects should investigate to what extent housing is already being created with the intention of long-term short-term rental.

One possible hypothesis could be that, especially considering the high construction costs, building apartments can only be financed in the long term if the high income from a short-term rental practice is generated, and affected apartments are thus introduced directly into the short-term rental market after completion without ever having been on the regular rental housing market. Observations related to a building in the southwest Entertainment District of *Friedrichshain* support this hypothesis, as there are 20 short-term rental apartments concentrated in a recently completed new building. Whether this is an isolated case or a pattern has to be researched, and whether this phenomenon also occurs in regard to individual apartments. In the context of a more in-depth examination of this question, an important contribution can be made to clarifying the extent to which housing construction is carried out based on the actual needs of the housing market and whether regulatory frameworks that take effect during building construction, such as zoning or land-use planning, can be used as mechanisms to regulate the short-term rental market.

In addition to the results addressing the research questions, this thesis generated further findings, particularly those that can serve as guidance for the methodological approach in future work. In this context, various phenomena related to platform usage and user *professionalization* were uncovered. For example, it became clear that Airbnb platform users navigate the website differently, and accordingly, information for researchers or authorities is not always found in the parts of the available data where it is expected. This was particularly evidenced by multiple licensing instances found not in the designated attribute field but in the textual parts of the dataset. Phenomena such as minimum rental duration and multiply-listed apartments were also identified, highlighting that they can lead to distortions in results of spatial research if not addressed. Therefore, a particular strength of this work lies in methodologically relevant insights, mainly due to the exploratory nature of the research.

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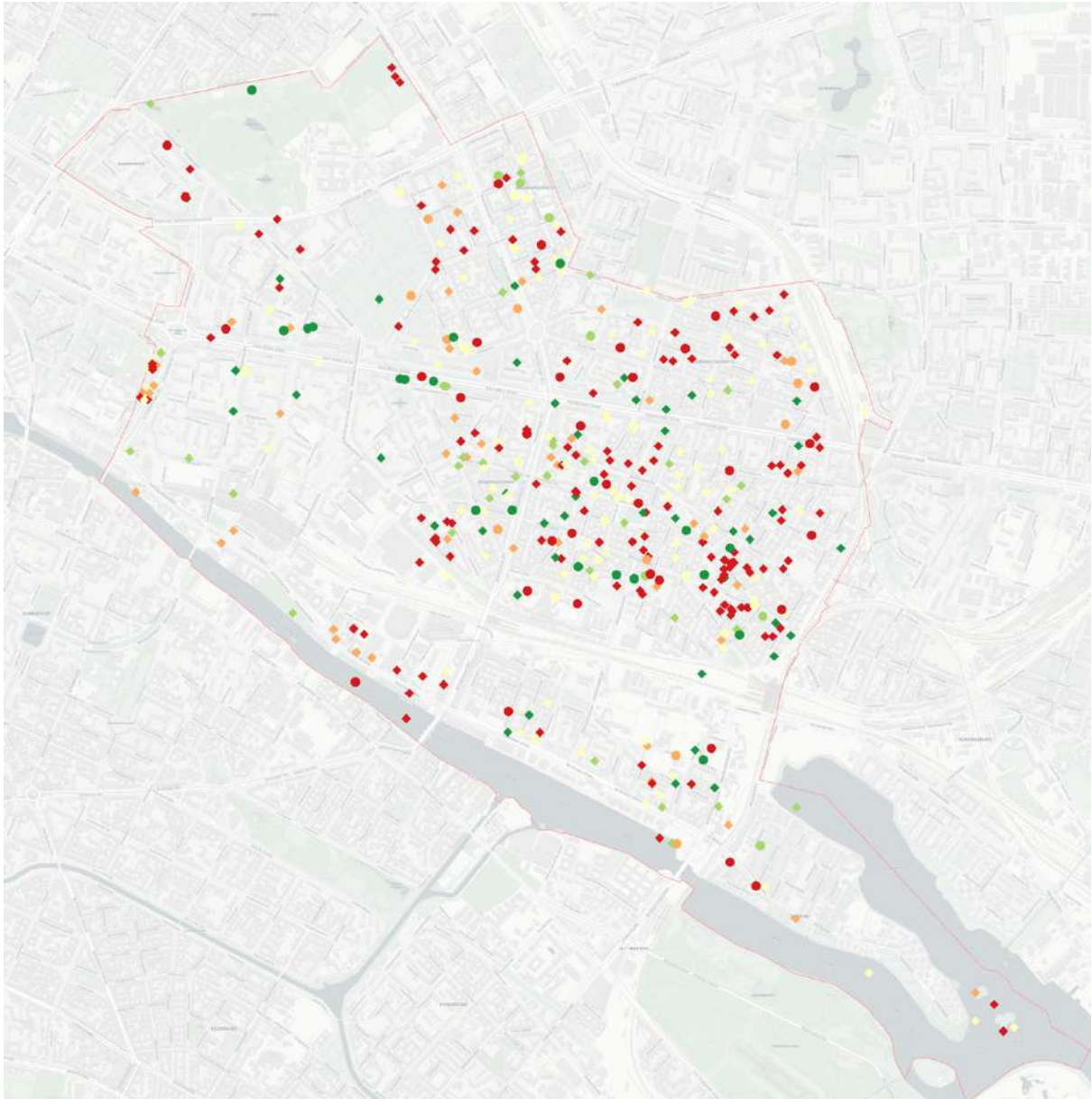
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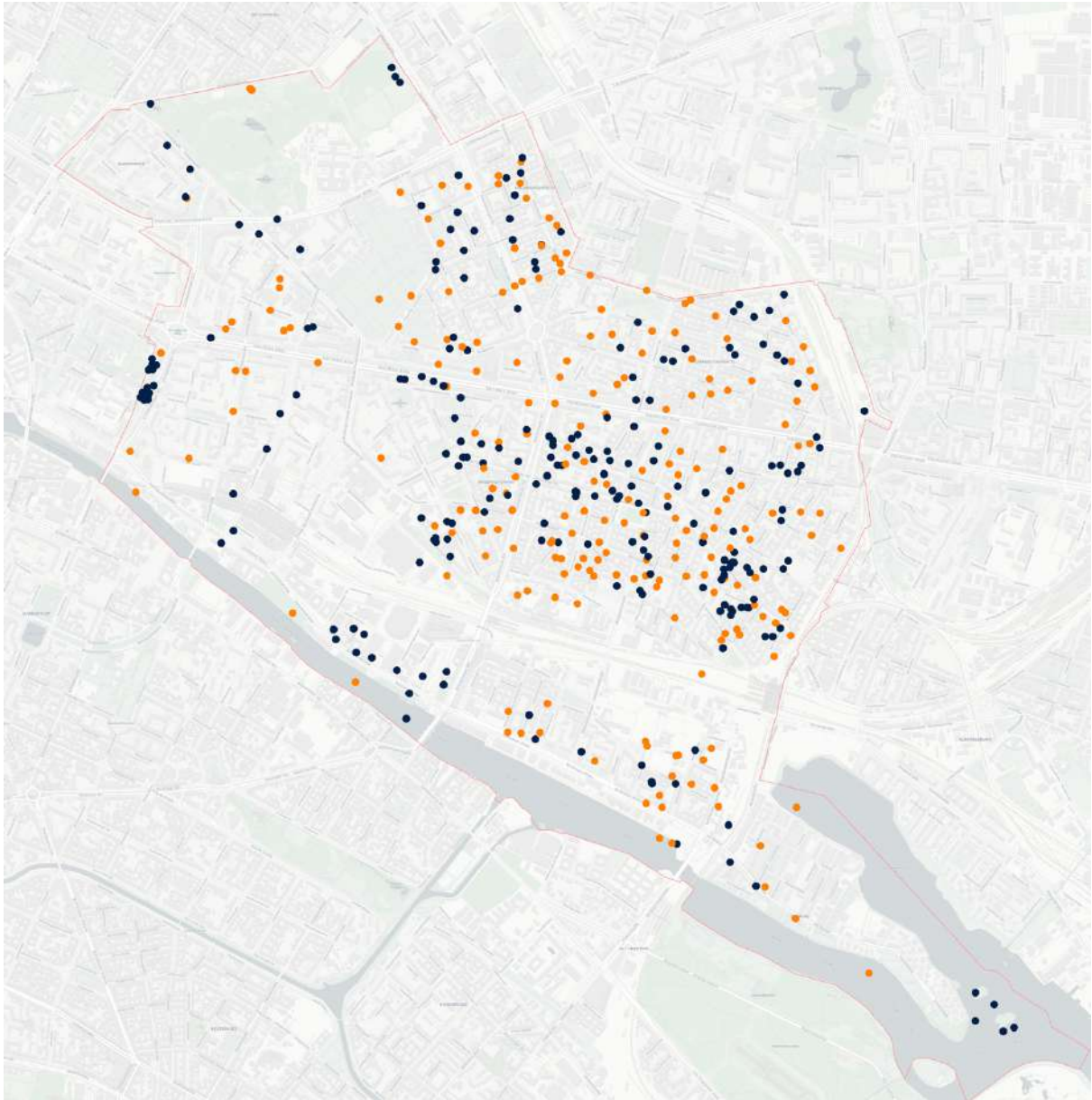
Appendix

(II) *legality*



Professionalization

(blue = professional, orange = peer-to-peer)



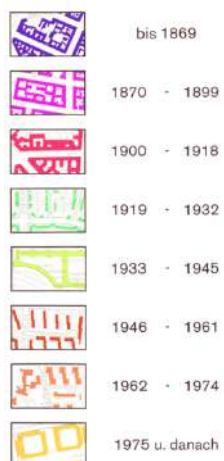
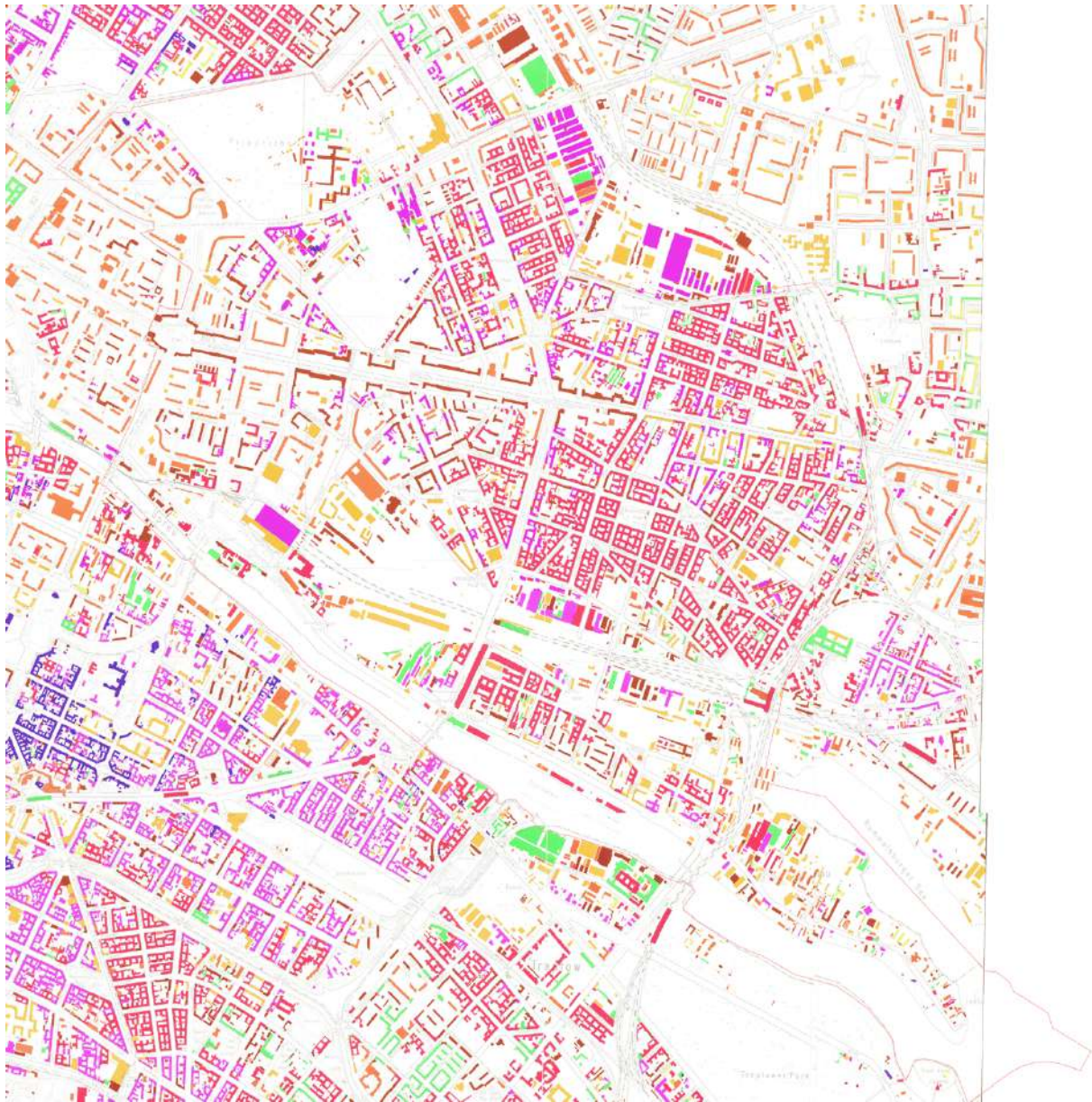
Berlin Rent Index

Bezugsfertig		Altbau		Neubau				1973 - 1990 West ^a	1973 - 1990 Ost ^a	1991 - 2002 ohne Wendwohnungen	2003 - 2017
Wohnfläche	Ausstattung	bis 1918	1919 - 1949	1950 - 1964	1965 - 1972	1973 - 1990 West ^a	1973 - 1990 Ost ^a	mit SH, Bad und IWC	mit SH, Bad und IWC	mit SH, Bad und IWC	mit SH, Bad und IWC
	Wohnlage	mit Sammelheizung (SH), Bad und WC in der Wohnung (IWC)	mit SH, Bad und IWC	mit SH, Bad und IWC	mit SH, Bad und IWC	mit SH, Bad und IWC	mit SH, Bad und IWC				
bis unter 40 m ²	A	1	2	3	4	5	6	7,61 7,30 - 8,50	7,61 7,30 - 8,50	7	8
	einfach	8,42 5,86 - 13,82	8,32 6,40 - 9,25	6,85 5,90 - 9,62	7,24 6,39 - 9,41	8,06 7,92 - 9,43	7,61 7,30 - 8,50				
	mittel	8,98 7,16 - 13,04	8,16 6,86 - 9,11	7,30 6,02 - 9,64	7,00 6,27 - 8,78	8,24 5,68 - 8,70	7,39 6,87 - 7,70				
40 m ² bis unter 60 m ²	C	12,19 6,97 - 15,17	7,99 6,86 - 10,10	7,96 6,78 - 9,92	9,49 8,68 - 10,39	8,85 7,96 - 10,75	7,60 7,14 - 9,31	7,60 7,14 - 9,31	7,60 7,14 - 9,31		
	einfach	7,19 5,61 - 10,59	6,82 5,78 - 8,73	6,40 5,73 - 8,53	6,26 5,39 - 7,47	7,95 6,61 - 9,22	6,41 6,09 - 6,98				
	mittel	7,92 5,77 - 10,92	7,18 6,00 - 8,27	6,51 5,74 - 8,14	6,38 5,79 - 7,40	8,24 6,78 - 9,35	6,35 5,75 - 7,14				
60 m ² bis unter 90 m ²	F	8,57 6,39 - 11,69	7,36 6,41 - 9,74	6,95 6,02 - 8,37	7,60 5,64 - 10,66	8,97 7,86 - 9,82	6,41 6,21 - 7,42	6,41 6,21 - 7,42	6,41 6,21 - 7,42	10,39 8,67 - 11,85	10,53 8,26 - 12,76
	gut	8,57 6,39 - 11,69	7,36 6,41 - 9,74	6,95 6,02 - 8,37	7,60 5,64 - 10,66	8,97 7,86 - 9,82	6,41 6,21 - 7,42				
	einfach	6,75 5,14 - 10,66	6,25 5,40 - 7,75	5,94 5,14 - 7,25	5,81 5,21 - 6,48	7,75 6,48 - 9,59	5,62 5,31 - 6,10				
90 m ² und mehr	H	7,21 5,15 - 10,66	6,65 5,43 - 7,80	6,40 5,63 - 7,55	6,08 5,42 - 6,82	8,53 6,07 - 9,71	5,62 4,90 - 6,13	5,62 4,90 - 6,13	5,62 4,90 - 6,13	8,42 7,17 - 9,62	10,75 9,50 - 13,00
	mittel	7,21 5,15 - 10,66	6,65 5,43 - 7,80	6,40 5,63 - 7,55	6,08 5,42 - 6,82	8,53 6,07 - 9,71	5,62 4,90 - 6,13				
	gut	7,98 5,99 - 11,64	7,57 6,30 - 9,75	6,97 5,86 - 8,92	7,08 5,54 - 8,85	8,86 7,04 - 10,49	5,93 5,45 - 6,70				
	J	6,64 5,10 - 9,74	6,53 5,48 - 7,63		5,83 5,21 - 6,45	7,66 6,21 - 8,82	5,58 5,09 - 5,84	5,58 5,09 - 5,84	5,58 5,09 - 5,84	8,48 7,07 - 9,93	12,73 9,07 - 14,67
	einfach	6,64 5,10 - 9,74	6,53 5,48 - 7,63		5,83 5,21 - 6,45	7,66 6,21 - 8,82	5,58 5,09 - 5,84				
	mittel	7,21 5,20 - 10,45	6,41 5,44 - 9,06	7,21 5,99 - 12,16	5,75 5,40 - 6,55	8,14 6,37 - 9,23	5,60 4,91 - 5,92				
	L	7,81 5,84 - 11,17	7,13 6,06 - 9,52	8,77 7,13 - 9,91	8,84 8,03 - 9,48	9,59 7,53 - 12,72	5,67 5,42 - 6,32	5,67 5,42 - 6,32	5,67 5,42 - 6,32	10,45 8,71 - 12,47	12,26 9,95 - 14,59
	gut	7,81 5,84 - 11,17	7,13 6,06 - 9,52	8,77 7,13 - 9,91	8,84 8,03 - 9,48	9,59 7,53 - 12,72	5,67 5,42 - 6,32				

Berlin Operating Cost Index

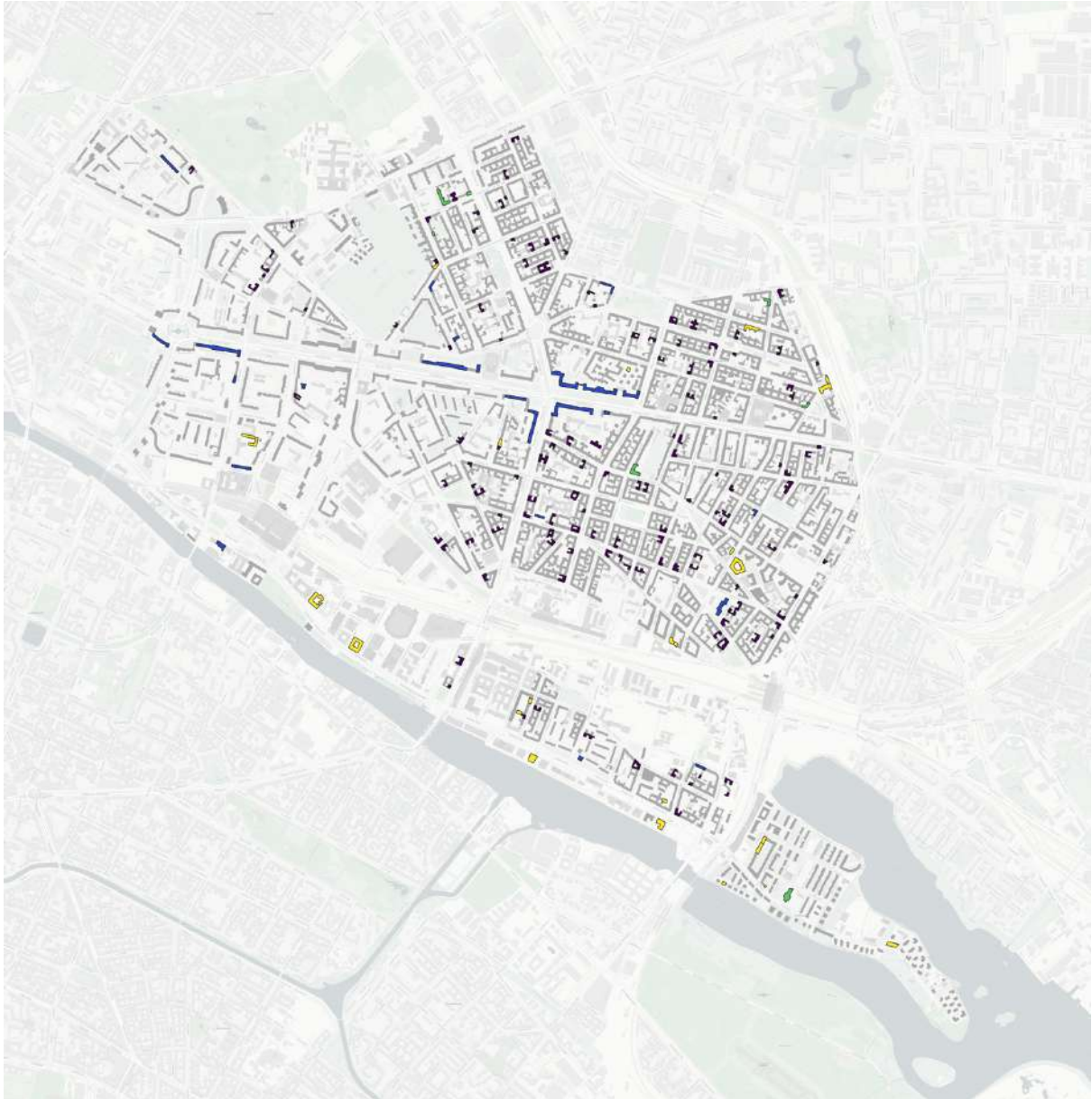
	Lower value	Meidum value	High value
property tax	0,14	0,27	0,46
water supply	0,13	0,25	0,44
drainage	0,13	0,23	0,31
rainwater	0,02	0,05	0,07
Elevator	0,07	0,18	0,33
street cleaning	0,01	0,04	0,07
garbage disposal	0,11	0,16	0,23
caretaker/caretaker	0,05	0,18	0,38
Building cleaning and vermin control	0,06	0,15	0,26
snow removal	0,02	0,05	0,08
garden maintenance	0,02	0,1	0,2
Lighting (general electricity)	0,02	0,05	0,1
chimney cleaning	0,01	0,07	0,12
Property and liability insurance	0,06	0,16	0,24
Operation of the community antenna system	0,06	0,12	0,19
Other "cold" operating costs	0,01	0,07	0,15
Heating	0,36	0,72	1,11
Warm water	0,11	0,26	0,47
Other "warm" operating costs			
	0,1	0,19	0,27
	1,49	3,3	5,48

Building age (1992)



Building age

(purple = <1920, blue = 1940-1990, green = 1990-2010, yellow = >2010)



Multiply listed apartments

own_id	prop_type	room_type	availability	license	violation	viol_detail	min_stay	mult_listing	professional	pre_loc	pre_loc_how	image_how	double_listing	address	new_loc_x	new_loc_y
413	Entire rental unit	Entire home/apt	4	name & address		IEIA		x	x	x	given address		A	Weisbachstr. 7, 10249, Berlin	13.4509997703	52.5241757486
414	Private room in	Private room	351	name & address		IShA		x	x	x	given address		A	Weisbachstr. 7, 10249, Berlin	13.4509997703	52.5241757486
408	Private room in	Private room	348	name & address		IShA		x	x	x	given address		B	Lange Str. 74, 10243, Berlin	13.4332333907	52.5127601356
463	Entire rental unit	Entire home/apt	76	name & address		IEIA		x	x	x	given address		B	Lange Str. 74, 10243, Berlin	13.4332333907	52.5127601356
279	Entire rental unit	Entire home/apt	310	name & address		IEHA(183)		x	x	x	given address		C	Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
300	Entire rental unit	Entire home/apt	316	name & address		IEHA(183)		x	x	x	given address		C	Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
344	Entire rental unit	Entire home/apt	333	name & address		IEHA(183)		x	x	x	given address		C	Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
367	Entire rental unit	Entire home/apt	342	name & address		IEHA(183)		x	x	x	given address		C	Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
282	Entire rental unit	Entire home/apt	313	name & address		IEHA(183)		x	x	x	given address		D	Boxhagener Str. 61, 10245, Berlin	13.4698762721	52.5062139558
333	Entire rental unit	Entire home/apt	329	name & address		IEHA(183)		x	x	x	given address		D	Boxhagener Str. 61, 10245, Berlin	13.4698762721	52.5062139558
5	Private room in loft	Private room	337	yes		IShA		x	x	x	image	balcony / floor plan	E	Warschauer Str. 77, 10243, Berlin	13.4533221081	52.5131395832
294	Entire loft	Entire home/apt	315	yes		IEHA(183)		x	x	x	image	building front /	E	Warschauer Str. 77, 10243, Berlin	13.4533221081	52.5131395832
114	Entire rental unit	Entire home/apt	199		x	EhA(183)	3 months	x	x	x	image	window / outdoor area	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
118	Private room in	Private room	78		x	SIA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
119	Private room in	Private room	14		x	SIA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
120	Private room in	Private room	46		x	SIA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
171	Private room in	Private room	23		x	SIA	3 months	x	x				G		13.44737	52.51831
409	Entire rental unit	Entire home/apt	4		x	EIA	3 months	x	x				G		13.44737	52.51831
246	Private room in	Private room	5		x	SIA	3 months	x	x				H		13.43763	52.51874
247	Private room in	Private room	1		x	SIA	3 months	x	x				H		13.43763	52.51874
15	Private room in	Private room	1	yes		ISIA		x	x				I		13.4641	52.50091
233	Private room in	Private room	3	yes		ISIA		x	x				I		13.4641	52.50091
199	Private room in loft	Private room	248	name & address		IEHA(183)		x	x	x	given address		J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818
206	Entire condo	Entire home/apt	287	name & address		IEHA(183)		x	x	x	given address		J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818
230	Entire condo	Entire home/apt	291	name & address		IEHA(183)		x	x	x	given address		J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818
83	Private room in	Private room	18	yes		ISIA		x	x	x	image	balcony / window	K	Frankfurter Allee 14, 10247, Berlin	13.4569686966	52.5151256318
144	Private room in	Private room	9	yes		ISIA		x	x	x	image	balcony / window	K	Frankfurter Allee 14, 10247, Berlin	13.4569686966	52.5151256318
148	Private room in	Private room	21	yes		ISIA		x	x	x	image	building front	L	Koppenstr. 25, 10243, Berlin	13.4363780195	52.5158870012
482	Entire condo	Entire home/apt	95	yes		IEHA(90-183)		x	x	x	image	building front	L	Koppenstr. 25, 10243, Berlin	13.4363780195	52.5158870012
214	Entire rental unit	Entire home/apt	289	yes		IEHA(183)		x	x	x	image	building front	M	Bänschstr. 59, 10247, Berlin	13.4669224379	52.5182281640
478	Entire rental unit	Entire home/apt	9	yes		IEIA		x	x	x	image	building front / window	M	Bänschstr. 59, 10247, Berlin	13.4669224379	52.5182281640

Rent Gap calculations

own_ID	address	build_period	size	med_rent/sqm	max_rent/sqm	med_rent	max_rent	STR_profit	Rent Gap (medi)	Rent Gap (maxi)
165	Andreasstr. 46, 10243, Berlin	1940-1990	76	6,4	7,55	535,04	631,18	152,4	-843,44	-939,58
145	Pintschstr. 4, 10249, Berlin	<1920	50	7,92	10,92	435,6	600,6	247,8	-187,8	-352,8
213	Boxhagener Str. 53, 10245, Berlin	<1920	75	7,21	10,66	594,825	879,45	534,9	-59,925	-344,55
129	Bänschstr. 62, 10247, Berlin	<1920	55	8,57	11,69	518,485	707,245	514,5	-3,985	-192,745
149	Simon-Dach-Strasse 9, 10245, Berlin	<1920	74,7	7,21	10,66	592,4457	875,9322	729,33	136,8843	-146,6022
230	Boxhagener Str. 33, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	646,8	170,94	-56,76
295	Corinthstr. 28, 10245, Berlin	<1920	45	7,92	10,92	392,04	540,54	528,3	136,26	-12,24
159	Friedrichshager Str. 8, 10243, Berlin	<1920	50	7,92	10,92	435,6	600,6	583,8	148,2	-16,8
107	Boxhagener Str. 117, 10245, Berlin	<1920	100	7,21	10,45	793,1	1149,5	1110	316,9	-39,5
102	Stralauer Allee 17F, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	733,2	257,34	29,64
146	Warschauer Str. 78, 10243, Berlin	<1920	60	7,21	10,66	475,86	703,56	752,4	276,54	48,84
348	Müggelstr. 9 , 10247, Berlin	<1920	70	7,21	10,66	555,17	820,82	873	317,83	52,18
109	Frankfurter Allee 13, 10243, Berlin	1940-1990	65	6,4	7,55	457,6	539,825	625,5	167,9	85,675
382	Rigaer Str. 80, 10247, Berlin	<1920	120	7,21	10,45	951,72	1379,4	1485,6	533,88	106,2
288	Böcklinstr. 6, 10245, Berlin	<1920	40	7,92	10,92	348,48	480,48	712,8	364,32	232,32
293	Corinthstr. 51, 10245, Berlin	<1920	33	8,98	13,04	325,974	473,352	731,1	405,126	257,748
234	Mainzerstr. 3, 10247, Berlin	>2010	90	10,74	13,56	1063,26	1342,44	1536,6	473,34	194,16
359	Proskauer Str. 24, 10247, Berlin	<1920	37	8,98	13,04	365,486	530,728	813,9	448,414	283,172
141	Boxhagener Str. 13, 10245, Berlin	<1920	45	7,92	10,92	392,04	540,54	883,5	491,46	342,96
245	Weichselstr. 6, 10245, Berlin,	<1920	100	7,21	10,45	793,1	1149,5	1446	652,9	296,5
283	Friedenstr. 37, 10249, Berlin	<1920	79	7,21	10,66	626,549	926,354	1270,5	643,951	344,146
200	Boxhagener Str. 53, 10245, Berlin	<1920	72	7,21	10,66	571,032	844,272	1212	640,968	367,728
287	Landsberger Allee 18, 10249, Berlin	<1920	50	7,92	10,92	435,6	600,6	1006,2	570,6	405,6
176	Samariterstr. 30, 10247, Berlin	<1920	100	7,21	10,45	793,1	1149,5	1590	796,9	440,5
357	Landsberger Allee 18, 10249, Berlin	<1920	70	7,21	10,66	555,17	820,82	1305	749,83	484,18
277	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1251,6	775,74	548,04
355	Proskauer Str. 24, 10247, Berlin	<1920	24	8,98	13,04	237,072	344,256	928,8	691,728	584,544
268	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1261,2	785,34	557,64
239	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1270,8	794,94	567,24
232	Boxhagener Str. 53, 10245, Berlin	<1920	50	7,92	10,92	435,6	600,6	1188,6	753	588
217	Richard-Sorge-Str. 37, 10249, Berlin	1990-2010	85	8,42	9,62	787,27	899,47	1461,9	674,63	562,43
280	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1328,4	852,54	624,84
315	Boxhagener Str. 53, 10245, Berlin	>2010	50	10,5	13,32	577,5	732,6	1371	793,5	638,4
281	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1366,8	890,94	663,24
248	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1386	910,14	682,44
290	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1434	958,14	730,44
341	Schamweberstr. 14, 10247, Berlin	<1920	25	8,98	13,04	246,95	358,6	1131,9	884,95	773,3
361	Weichselstr. 30, 10247, Berlin	<1920	25	8,98	13,04	246,95	358,6	1131,9	884,95	773,3
334	Kochhannstr. 27, 10247, Berlin	<1920	120	7,21	10,45	951,72	1379,4	2100	1148,28	720,6
302	Boxhagener Str. 53, 10245, Berlin	<1920	45	7,92	10,92	392,04	540,54	1382,7	990,66	842,16
311	Boxhagener Str. 53, 10245, Berlin	<1920	35	7,92	10,92	304,92	420,42	1281,3	976,38	860,88
309	Boxhagener Str. 53, 10245, Berlin	<1920	60	7,21	10,66	475,86	703,56	1568,4	1092,54	864,84
347	Boxhagener Str. 53, 10245, Berlin	<1920	45	7,92	10,92	392,04	540,54	1469,1	1077,06	928,56
128	Boxhagener Str. 53, 10245, Berlin	>2010	85	10,75	13	1005,125	1215,5	2268,3	1263,175	1052,8
368	Dolziger Str. 22, 10247, Berlin	>2010	40	10,5	13,32	462	586,08	1893,6	1431,6	1307,52
294	Warschauer Str. 77, 10243, Berlin	<1920	142	7,21	10,45	1126,202	1632,29	2977,8	1851,598	1345,51
375	Grünberger Str. 54, 10245, Berlin	<1920	12	8,98	13,03	118,536	171,996	1707,6	1589,064	1535,604
304	Grünberger Str. 54, 10245, Berlin	<1920	18	8,98	13,03	177,804	257,994	1812,6	1634,796	1554,606
305	Grünberger Str. 54, 10245, Berlin	<1920	34	8,98	13,03	335,852	487,322	2067	1731,148	1579,678
301	Grünberger Str. 54, 10245, Berlin	<1920	13	8,98	13,03	128,414	186,329	1795,5	1667,086	1609,171
155	Karl-Marx-Allee 109, 10243, Berlin	1940-1990	80	6,4	7,55	563,2	664,4	2232	1668,8	1567,6
378	Grünberger Str. 54, 10245, Berlin	<1920	31	8,98	13,03	306,218	444,323	2052,9	1746,682	1608,577
377	Grünberger Str. 54, 10245, Berlin	<1920	24	8,98	13,03	237,072	343,992	2013,6	1776,528	1669,608
394	Warschauerstr. 47, 10243, Berlin	<1920	23	8,42	13,82	213,026	349,646	2156,1	1943,074	1806,454
488	Boxhagener Str. 35, 10245 Berlin	>2010	85	7,21	10,66	674,135	996,71	2863,5	2189,365	1866,79
395	Warschauerstr. 47, 10243, Berlin	<1920	33	8,42	13,82	305,646	501,666	2526,3	2220,654	2024,634
397	Warschauerstr. 47, 10243, Berlin	<1920	40	7,19	10,59	316,36	465,96	2536,8	2220,44	2070,84
396	Warschauerstr. 47, 10243, Berlin	<1920	44	7,19	10,59	347,996	512,556	2667,6	2319,604	2155,044
398	Warschauerstr. 47, 10243, Berlin	<1920	60	7,19	10,59	474,54	698,94	2845,2	2370,66	2146,26
399	Warschauerstr. 47, 10243, Berlin	<1920	58	7,19	10,59	458,722	675,642	3043,8	2585,078	2368,158
401	Warschauerstr. 47, 10243, Berlin	<1920	71	7,19	10,59	561,539	827,079	3264,9	2703,361	2437,821

Insideairbnb data table (edited by author)

	latitude	longitude	prop_type	room_type	availability	total_listings	review_12	license	violation	viol_detail	min_stay	mult_listing	professional	pre_loc	pre_loc_how	image_how	double_listing	address	new_loc_x	new_loc_y	add_floor_info
1	52.52513	13.44771	Entire rental unit	Entire home/apt	1	2	yes	yes		IEIA		x	x	x	image	balcony / window		Kochhamstr. 40, 10249, Berlin	13.4469287993	52.5239266991	roof
2	52.51277	13.46422	Entire rental unit	Entire home/apt	1	1	yes	yes		IEIA									13.46422	52.51277	roof
3	52.50825	13.45708	Entire rental unit	Entire home/apt	1	1	yes	yes		IEIA									13.45708	52.50825	
4	52.50909	13.44958	Entire rental unit	Entire home/apt	10	1	yes	yes		IEIA				x	image	window		Revaler Str. 102, 10243, Berlin	13.449510406	52.5082623164	
5	52.51247	13.45385	Private room in loft	Private room	337	2	yes	yes		IShA		x	x	x	image	balcony / floor plan	E	Warschauer Str. 77, 10243, Berlin	13.4533221081	52.5131395832	
6	52.513497474972716	13.46307118426232	Entire condo	Entire home/apt	10	1	yes	yes		IEIA									13.4630711842623252.513497474972716		
7	52.5098	13.44693	Entire loft	Entire home/apt	100	2	yes	yes		IEIA(90-183)		x	x	x	image	building front / window		Pillauer Str. 5, 10243, Berlin	13.4467411254	52.5095084302	roof
8	52.50977	13.44602	Private room in hostel	Private room	324	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
9	52.50977	13.44602	Private room in hostel	Private room	338	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
10	52.50977	13.44602	Shared room in hostel	Shared room	300	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
11	52.50977	13.44602	Shared room in hostel	Shared room	312	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
12	52.50967	13.45462	Entire rental unit	Entire home/apt	100	7	yes	name & address		IEIA(90-183)		x	x	x	given address		Kopernikusstr. 24, 10245, Berlin	13.454129539	52.5104231306		
13	52.51586	13.46388	Private room in rental unit	Private room	2	1	yes	yes		ISIA				x	image	building front		Silvio-Meier-Str. 5, 10247, Berlin	13.4635873701	52.5158628549	
14	52.51729	13.47077	Entire rental unit	Entire home/apt	106	1	no		x	EIA(90-183)				x	image	balcony / window / floor plan		Bänschstr. 79, 10247, Berlin	13.4698625885	52.5175762115	roof
15	52.50091	13.4641	Private room in rental unit	Private room	1	4	yes	yes		ISIA		x	x				I	13.4641	52.50091		
16	52.5187	13.43605	Entire condo	Entire home/apt	108	1	yes	name & address		IEIA(90-183)				x	given address		Koppenstr. 49, 10243, Berlin	13.43716493	52.518475649		
17	52.51948	13.45761	Entire rental unit	Entire home/apt	108	1	yes	name & address		IEIA(90-183)				x	given address		Huebnerstr. 4, 10247, Berlin	13.4566910701	52.5201707634		
18	52.50942	13.45152	Entire condo	Entire home/apt	109	1	yes	yes		IEIA(90-183)				x	image	balcony		Kopernikusstr. 30, 10245, Berlin	13.45243329	52.5107285745	
19	52.50902	13.46272	Entire rental unit	Entire home/apt	11	1	yes	(yes_number)		IEIA									13.46272	52.50902	
20	52.51373	13.47125	Private room in rental unit	Private room	99	1	yes	yes		ISIA									13.47125	52.51373	
21	52.51647	13.46803	Entire rental unit	Entire home/apt	11	1	yes	yes		IEIA									13.46803	52.51647	
22	52.51579	13.42598	Shared room in hostel	Private room	279	49	yes	legal entity		IEIA(183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
23	52.51598	13.42581	Shared room in hostel	Shared room	103	49	yes	legal entity		IEIA(90-183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
24	52.513069	13.458415	Private room in loft	Private room	109	1	yes	name & address		IShA				x	given address		Boxhagener Str. 22, 10245, Berlin	13.456356309	52.513086471	roof	
25	52.49853	13.46573	Private room in rental unit	Private room	351	1	yes	(yes_number)		IShA				x	image	building front		Markgrafendamm 10, 10245, Berlin	13.4663364613	52.499019786	
26	52.50786	13.46703	Entire rental unit	Entire home/apt	117	1	yes	name & address		IEIA(90-183)				x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954		
27	52.5149	13.44745	Entire rental unit	Entire home/apt	123	18	yes	legal entity		IEIA(90-183)		x	x	x	given address		Lasdehner Str. 28, 10243, Berlin	13.4480106835	52.5139937319		
28	52.50574	13.47073	Private room in rental unit	Private room	17	1	yes	yes		ISIA				x	image	window		Boxhagener Str. 68, 10245, Berlin	13.4702344618	52.5064196199	roof
29	52.50779211663429	13.461436677246047	Entire rental unit	Entire home/apt	126	1	yes	yes		IEIA(90-183)				x	image	window		Seumestr. 8, 10245, Berlin	13.4617467825	52.5089367401	
30	52.51436	13.46202	Private room in rental unit	Private room	29	1	yes	(yes_number)		ISIA				x	image	balcony		Scharnweberstr. 32, 10247, Berlin	13.4626734516	52.5132814881	
31	52.51049	13.45919	Private room in rental unit	Private room	296	1	yes	yes		IShA				x	image	balcony		Wühlschtr. 28, 10245, Berlin	13.4585868962	52.5094665158	roof
32	52.50985	13.44612	Shared room in hostel	Shared room	313	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
33	52.51178	13.42536	Entire rental unit	Entire home/apt	129	1	yes	yes		IEIA(90-183)				x	image	building front		Wilhelmine-Gemberg-Weg 11A, 10179, Berlin	13.4246133004	52.5110379369	
34	52.50968	13.44616	Shared room in hostel	Shared room	347	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
35	52.50976	13.4461	Shared room in hostel	Shared room	319	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
36	52.50985	13.44612	Shared room in hostel	Shared room	320	13	yes	legal entity		IEIA(183)		x	x	x	given address		Helsingforser Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
37	52.51101	13.4489	Private room in rental unit	Private room	32	1	yes		x	SIA								13.4489	52.51101		
38	52.5083	13.46474	Private room in rental unit	Private room	65	1	yes		x	SIA								13.46474	52.5083		
39	52.52872	13.43339	Private room in rental unit	Private room	13	1	yes		x	SIA				x	image	building front / window		Käthe-Niederkirchner-Str. 20, 10407, Berlin	13.4335175962	52.5296539044	
40	52.52471	13.44657	Entire rental unit	Entire home/apt	129	1	yes	yes		IEIA(90-183)				x	image	balcony		Kochhamstr. 38, 10249, Berlin	13.4473460648	52.5242970064	
41	52.56137267520576	13.453025777255723	Entire rental unit	Entire home/apt	13	7	no		x	EIA		x	x	x	image	balcony / window		Stralauer Allee 5, 10245, Berlin	13.4528714616	52.5005869969	
42	52.49958	13.46109	Entire rental unit	Entire home/apt	131	2	yes	(yes_entity)		IEIA(90-183)		x	x	x	given address		Corinthstr. 30, 10245, Berlin	13.4601521852	52.5003286105		
43	52.49696	13.46284	Entire rental unit	Entire home/apt	132	2	yes		x	EIA(90-183)	3 months	x	x	x	image	building front / window		Stralauer Allee 14, 10245, Berlin	13.4616671724	52.4979016879	
44	52.51243	13.45166	Private room in rental unit	Private room	255	1	yes	yes		IShA									13.45166	52.51243	
45	52.51078	13.45506	Private room in condo	Private room	2	1	yes	yes		ISIA				x	image	window		Libauer Str. 3, 10245, Berlin	13.454272987	52.5096241221	
46	52.52065682129556	13.45211338468897	Entire condo	Entire home/apt	132	1	never	yes		IEIA(90-183)				x	image	balcony / window		Mattenstr. 3, 10249, Berlin	13.4523158259	52.5215463356	
47	52.50894	13.46075	Entire rental unit	Entire home/apt	137	1	yes	fake	x	EIA(90-183)				x	image	balcony / window		Krossener Str. 28, 10245, Berlin	13.4618104228	52.5096898548	
48	52.517	13.42635	Shared room in hostel	Shared room	91	49	yes	legal entity		IEIA(90-183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
49	52.5174	13.42648	Shared room in hostel	Shared room	99	49	yes	legal entity		IEIA		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
50	52.51579	13.42609	Shared room in hostel	Shared room	98	49	yes	legal entity		IEIA(90-183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
51	52.51584	13.42619	Shared room in hostel	Shared room	84	49	yes	legal entity		IEIA		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
52	52.51567	13.42618	Shared room in hostel	Shared room	274	49	no	legal entity		IEIA(183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
53	52.51463	13.47035	Entire condo	Entire home/apt	137	1	no		x	EIA(90-183)									13.47035	52.51463	
54	52.51577	13.42567	Private room in hostel	Private room	261	49	yes	legal entity		IEIA(183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
55	52.51566	13.42594	Shared room in hostel	Shared room	70	49	yes	legal entity		IEIA		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
56	52.50848	13.4568	Private room in rental unit	Private room	133	1	yes	yes		IShA									13.4568	52.50848	

57	52.50068	13.46277	Entire loft Private room in condo	Entire home/apt Private room	137	1	yes		x	EhA(90-183)		x	image	balcony / window		Bötkerstr. 9, 10245, Berlin	13.4644365997	52.4997790047	roof	
58	52.50826	13.46067			365	1	no		x	ShA		x	image	balcony		Gärtnestr. 3, 10245, Berlin	13.4603432532	52.5084616898		
59	52.50554409999999	13.4659231	Entire rental unit	Entire home/apt	139	1	yes	yes		IEhA(90-183)		x	image	balcony		Lenbachstr. 8, 10245, Berlin	13.4663044245	52.5053361742		
60	52.5257	13.45205	Entire condo	Entire home/apt	14	1	yes	name & address		IEIA		x	given address			Eberlystr. 54, 10249, Berlin	13.4514669087	52.5266080087		
61	52.51382	13.44929	Entire rental unit	Entire home/apt	142	2	yes	(yes_entity)		IEhA(90-183)	x	x	x	given address		Grünberger Str. 6, 10243, Berlin	13.4484988848	52.5129678443		
62	52.51896	13.432	Entire rental unit	Entire home/apt	143	1	yes	(yes_name)		IEhA(90-183)		x	given address			Friedrichsberger Str. 13, 10243, Berlin	13.4336244077	52.5203064867		
63	52.51687246000586	13.44896411895752	Entire rental unit	Entire home/apt	144	1	yes	yes		IEhA(90-183)		x	image	balcony / window		Karl-Marx-Allee 131, 10243, Berlin	13.4480790858	52.5168606722		
64	52.5134	13.44685	Entire rental unit	Entire home/apt	146	18	yes	legal entity		IEhA(90-183)	x	x	x	given address		Lasdehner Str. 28, 10243, Berlin	13.4480106835	52.5139937319		
65	52.51713	13.42679	Shared room in hostel	Shared room	99	49	yes	legal entity		IEhA(90-183)	x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
66	52.51265	13.4712	Entire rental unit	Entire home/apt	146	2	yes	legal entity		IEhA(90-183)	x	x	x	given address		Müggelstr. 10, 10247, Berlin	13.470443955	52.5118000575		
67	52.49381	13.47106	Entire rental unit	Entire home/apt	148	1	yes	yes		IEhA(90-183)		x	image	building front / balcony / window		Alt-Stralau 53, 10245, Berlin	13.4703881107	52.4946138883		
68	52.51565	13.46096	Entire guest suite	Entire home/apt	144	1	yes	yes		IEhA(90-183)		x	x	image	window	Liebigstr. 10, 10247, Berlin	13.4595090392	52.516992863		
69	52.51325	13.45411	Entire condo Private room in rental unit	Entire home/apt Private room	148	3	never	(yes_number)		IEhA(90-183)	x	x	x	image	balcony / window	Boxhagener Str. 117, 10245, Berlin	13.45533998	52.5138001613	roof	
70	52.5005	13.46467	Shared room in hostel	Shared room	44	1	no		x	ShA							13.46467	52.5005		
71	52.51693	13.42623			61	49	yes	legal entity		IEIA	x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
72	52.49775	13.46641	Entire condo	Entire home/apt	149	2	yes	legal entity		IEhA(90-183)	x	x	x	given address		Kiehlholzstr. 41, 12435, Berlin	13.4556531679	52.4874030546		
73	52.50996	13.4605	Entire rental unit	Entire home/apt	15	1	yes	yes		IEIA							13.4605	52.50996		
74	52.51455	13.45987	Entire rental unit	Entire home/apt	16	3	no		x	EIA	6 months	x	x	x	image	window	Proskauer Str. 37, 10247, Berlin	13.4601695005	52.5158971938	
75	52.51147	13.45948	Entire condo	Entire home/apt	16	1	yes	yes		IEIA		x	x	image	window	Boxhagener Str. 103, 10245 Berlin	13.4597301205	52.5126142557		
76	52.499817	13.462516	Entire rental unit	Entire home/apt	16	1	yes	name & address		IEIA		x	x	given address		Corinthstr. 43, 10245, Berlin	13.4625799249	52.4998190001		
77	52.51292	13.45457	Entire loft	Entire home/apt	161	3	yes	(yes_number)		IEhA(90-183)	x	x	x	image	window	Boxhagener Str. 117, 10245, Berlin	13.45533998	52.5138001613	roof	
78	52.51024	13.46756	Entire rental unit	Entire home/apt	165	1	yes	yes		IEhA(90-183)		x	x	image	window	Oderstr. 21, 10247, Berlin	13.4682748816	52.5109839638		
79	52.51527	13.4621	Private room in rental unit	Private room	59	1	yes	yes		ISIA							13.4621	52.51527		
80	52.510212	13.450439	Entire condo	Entire home/apt	167	1	no	fake	x	EhA(90-183)		x	image	balcony / window		Gubener Str. 37, 10243, Berlin	13.4504211265	52.5102114972	roof	
81	52.50108	13.46079	Entire condo	Entire home/apt	169	1	yes	yes		IEhA(90-183)		x	image	balcony / window		Bossestr. 8, 10245, Berlin	13.4602047115	52.5001548619	roof	
82	52.52442	13.44367	Entire rental unit	Entire home/apt	17	1	yes		x	EIA							13.44367	52.52442		
83	52.51566	13.46001	Private room in rental unit	Private room	18	2	yes	yes		ISIA	x	x	x	image	balcony / window	K Frankfurter Allee 14, 10247, Berlin	13.4569686966	52.5151256318		
84	52.49932	13.46545	Private room in rental unit	Private room	8	1	yes	yes		ISIA		x	x	image	window	Markgrafendamm 13, 10245, Berlin	13.466206231	52.4996217575		
85	52.50817	13.46614	Private room in rental unit	Private room	30	1	no	yes		ISIA		x	x	image	building front / balcony / window	Wühlschstr. 55, 10245, Berlin	13.467182637	52.5071013399		
86	52.51988	13.46378	Entire condo	Entire home/apt	17	1	yes	name & address		IEIA		x	x	given address		Bänschstr. 25, 10247, Berlin	13.4626102176	52.5189051707		
87	52.51783	13.44709	Entire rental unit	Entire home/apt	171	2	yes	yes		IEhA(90-183)	x	x	x	given address			13.44709	52.51783		
88	52.51618	13.42614	Shared room in hostel	Shared room	89	49	yes	legal entity		IEIA	x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
89	52.51731	13.47028	Entire rental unit	Entire home/apt	173	2	yes	name & address		IEhA(90-183)	x	x	x	given address		Schreinerstr. 28, 10247, Berlin	13.4707509916	52.5162234363		
90	52.52092	13.45683	Private room in rental unit	Private room	114	1	yes	yes		IShA		x	x	image	window	Eldenaer Str. 9, 10247, Berlin	13.4576722857	52.5205739918		
91	52.5248	13.45198	Private room in rental unit	Private room	220	1	yes		x	ShA		x	x	image	window	Ebelingstr. 15, 10249, Berlin	13.4505731186	52.5240115839		
92	52.51068	13.46273	Private room in rental unit	Private room	11	1	yes	yes		ISIA							13.46273	52.51068		
93	52.5232918	13.445597	Entire condo	Entire home/apt	173	1	no		x	EhA(90-183)		x	image	window / outdoor area		Kochhanstr. 1, 10249, Berlin	13.4455719756	52.5232313849		
94	52.51821720064667	13.446918426795946	Entire rental unit	Entire home/apt	175	1	no		x	EhA(90-183)	1 month	x	image	balcony / window		Löwestr. 25, 10249, Berlin	13.4474258596	52.5182206561	roof	
95	52.50577	13.46718	Private room in rental unit	Private room	75	1	no		x	ShA		x	image	balcony		Sonntagstr. 29, 10245, Berlin	13.4654905203	52.5056714062		
96	52.517834	13.447094	Entire condo Private room in rental unit	Entire home/apt Private room	177	2	yes	name & address		IEhA(90-183)	x	x	x	given address		Löwestr. 28, 10249, Berlin	13.4471178659	52.5178561749		
97	52.52047	13.45161	Private room in rental unit	Private room	76	1	yes	yes		ISIA		x	x	image	window	Mühsamstr. 67, 10249, Berlin	13.4534755001	52.5210400903		
98	52.5135	13.42495	Private room in rental unit	Private room	351	1	yes	(yes_number)		IShA							13.42495	52.5135		
99	52.51173	13.45103	Private room in rental unit	Private room	14	1	yes	yes		ISIA							13.45103	52.51173		
100	52.51637	13.47122	Entire rental unit	Entire home/apt	179	2	no		x	EhA(90-183)	x	x	x	image	balcony / window	Rigaer Str. 59, 10247, Berlin	13.4708198708	52.5157961015		
101	52.51036	13.44606	Private room in rental unit	Private room	48	1	yes	yes		ISIA							13.44606	52.51036		
102	52.4972	13.46164	Entire rental unit	Entire home/apt	186	1	no	yes		IEhA(183)		x	image	window		Stralauer Allee 17f, 10245, Berlin	13.4628927999	52.4981602222		
103	52.50128362988742	13.460659953053708	Entire condo	Entire home/apt	19	1	yes	yes		IEIA		x	image	balcony / window		Corinthstr. 28, 10245, Berlin	13.459991599	52.5004236562	roof	
104	52.51005	13.45557	Entire rental unit	Entire home/apt	190	1	yes		x	EhA(183)							13.45557	52.51005		
105	52.51205	13.46729	Private room in rental unit	Private room	319	1	yes	yes		IShA							13.46729	52.51205		
106	52.51422795530914	13.45244888640567	Entire rental unit	Entire home/apt	191	1	no		x	EhA(183)		x	image	window		Warschauer Str. 5, 10243, Berlin	13.4530084628	52.5151259196		
107	52.51595	13.45704	Entire loft	Entire home/apt	195	1	yes	yes		IEhA(183)		x	image	window / outdoor area		Boxhagener Str. 117, 10245, Berlin	13.4554767715	52.5140424413		
108	52.52011	13.47026	Entire rental unit	Entire home/apt	196	4	yes	yes		IEhA(183)	x	x					13.47026	52.52011		
109	52.51576	13.44786	Entire rental unit	Entire home/apt	197	3	yes		x	EhA(183)	6 months	x	x	x	image	window	Frankfurter Allee 13, 10243, Berlin	13.457147132	52.5160319537	
110	52.51829	13.43054	Entire condo Private room in rental unit	Entire home/apt Private room	198	7	no	name & address		IEhA(183)	x	x	given address	given address (missing) balcony / window / outdoor area			13.43054	52.51829		
111	52.50412	13.46457	Private room in rental unit	Private room	55	1	yes	yes		ISIA		x	image	balcony / window / outdoor area		Revaler Str. 23, 10245, Berlin	13.4627469717	52.5053409011		
112	52.51624	13.44688	Private room in rental unit	Private room	352	1	yes	yes		IShA		x	image	balcony / window		Karl-Marx-Allee 123, 10243, Berlin	13.4478948065	52.5169944098		
113	52.51809	13.44899	Entire rental unit	Entire home/apt	199	1	no		x	EhA(183)	mporal (march-june)						13.44899	52.51809		

114	52.51665	13.44516	Entire rental unit	Entire home/apt	199	12	no		x	EhA(183)	3 months	x	x	x	image	window / outdoor area	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
115	52.50583	13.46618	Entire rental unit	Entire home/apt	2	1	yes		x	EIA				x	image	window		Böcklinstr. 9, 10245, Berlin	13.4664812699	52.5067985129
116	52.50898	13.45483	Entire rental unit	Entire home/apt	212	1	yes	yes		EhA(183)									13.45483	52.50898
117	52.51017	13.46349	Private room in rental unit	Private room	3	1	yes		x	SA				x	image	window		Gryphusstr. 13, 10245, Berlin	13.4640963339	52.5091264572
118	52.51653	13.44398	Private room in rental unit	Private room	78	12	yes		x	SA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
119	52.51645	13.44598	Private room in rental unit	Private room	14	12	yes		x	SA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
120	52.51655	13.44367	Private room in rental unit	Private room	46	12	no		x	SA	3 months	x	x	x	image	window / floor plan	F	Karl-Marx-Allee 109, 10243, Berlin	13.4457219715	52.5171733670
121	52.51787	13.45892	Entire loft	Entire home/apt	213	12	no		x	EhA(183)	3 months	x	x						13.45892	52.51787
122	52.50098	13.46522	Entire rental unit	Entire home/apt	219	1	yes		x	EhA(183)				x	image	balcony		Persiusstr. 11, 10245, Berlin	13.4642465101	52.5002444661
123	52.50824	13.46348	Entire rental unit	Entire home/apt	22	1	yes		x	EIA									13.46348	52.50824
124	52.51102	13.45143	Private room in rental unit	Private room	6	1	yes		x	SA					image	balcony / window		Kopernikusstr. 26, 10245, Berlin	13.4535429609	52.5106951731
125	52.51811851662786	13.4444645170343945	Entire condo	Entire home/apt	22	1	yes	yes		IEIA				x	image	window		Karl-Marx-Allee 109, 10243, Berlin	13.4487153882	52.5172002867
126	52.51901	13.47039	Entire rental unit	Entire home/apt	22	1	yes	name & address		IEIA					x	given address		Voigtstr.23, 10247, Berlin	13.4691910093	52.5198492477
127	52.5222	13.45346	Entire rental unit	Entire home/apt	221	2	yes		x	EhA(183)		x	x	x	image	building front		Ebertstr. 31, 10249, Berlin	13.4542991805	52.5224101251
128	52.50883	13.46671	Entire rental unit	Entire home/apt	221	20	yes	legal entity		EhA(183)		x	x	x	image	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
129	52.51757	13.46686	Entire condo	Entire home/apt	221	7	yes	name & address		EhA(183)		x	x	x	image	balcony / window		Bänschestr. 62, 10247, Berlin	13.4688477612	52.5175884107
130	52.52966	13.44308	Room in hostel	Hotel room	193	2	yes	name & address		EhA(183)		x	x	x	image	given address		Danziger Str. 199, 10407, Berlin	13.4436514716	52.5306279214
131	52.525383	13.429113	Entire rental unit	Entire home/apt	223	5	yes	legal entity		EhA(183)		x	x	x	image	given address		Friedenstr. 14, 10249 Berlin	13.4293264851	52.5254177893
132	52.50254	13.45117	Entire rental unit	Entire home/apt	226	1	yes		x	EhA(183)	3 months			x	image	building front		Lehmbruckstr. 22, 10245, Berlin	13.452291306	52.502306565
133	52.51642	13.45978	Entire rental unit	Entire home/apt	226	2	yes		x	EhA(183)		x	x	x	image	balcony / window		Frankfurter Allee 15, 10247, Berlin	13.4577923733	52.5159800002
134	52.5083	13.45865	Private room in rental unit	Private room	7	1	yes		x	SA				x	image	window		Wühlschstr. 34, 10245, Berlin	13.4581951448	52.5092525508
135	52.49019	13.48482	Houseboat	Entire home/apt	319	4	yes	legal entity		EhA(183)		x	x	x	image	given address		Kratzbruch 1, 10245, Berlin	13.4854505484	52.4891421926
136	52.50996	13.47217	Entire rental unit	Entire home/apt	226	1	no		x	EhA(183)									13.47217	52.50996
137	52.51392	13.44787	Entire rental unit	Entire home/apt	227	2	yes	name & address		EhA(183)		x	x	x	image	given address		Lasdehner Str. 30, 10243, Berlin	13.4478610358	52.5138824735
138	52.5116	13.45583	Private room in rental unit	Private room	17	2	yes	yes		ISIA		x	x	x	image	window / floor plan		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111
139	52.48618968764739	13.466515776074806	Entire condo	Entire home/apt	227	2	no		x	EhA(183)		x	x	x	image	balcony / window		Dora-Benjamin-Park 15, 10245, Berlin	13.4661144483	52.495266303
140	52.50239	13.4526	Private room in rental unit	Private room	50	3	yes	yes		ISIA		x	x	x	image	balcony / window / outdoor area		Ehrenbergstr. 4, 10245, Berlin	13.4518400583	52.5024867528
141	52.51334	13.45585	Entire rental unit	Entire home/apt	228	6	no	legal entity		EhA(183)		x	x	x	image	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655
142	52.50422	13.44688	Room in boutique hotel	Hotel room	1	2	no	legal entity		IEIA		x	x	x	image	given address		Warschauer Str. 39/40, 10243, Berlin	13.4479409362	52.5046445027
143	52.51706	13.42651	Private room in hostel	Private room	344	49	yes	legal entity		EhA(183)		x	x	x	image	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166887887
144	52.5142	13.45598	Private room in rental unit	Private room	9	2	yes	yes		ISIA		x	x	x	image	balcony / window	K	Frankfurter Allee 14, 10247, Berlin	13.4569680966	52.5151256318
145	52.522793	13.448904	Entire rental unit	Entire home/apt	228	2	yes	name & address		EhA(183)		x	x	x	image	given address		Pietschstr. 4, 10249, Berlin	13.4487764661	52.52274788
146	52.51212	13.45309	Entire rental unit	Entire home/apt	236	8	no	(yes_name)		EhA(183)		x	x	x	image	given address		Warschauer Str. 78, 10243, Berlin	13.4534047913	52.5132704536
147	52.52185910000001	13.4551935	Entire rental unit	Entire home/apt	24	1	yes	yes		IEIA				x	image	balcony / window		Thaerstr. 35, 10249, Berlin	13.4551825262	52.5214305799
148	52.51588	13.43648	Private room in rental unit	Private room	21	2	yes	yes		ISIA		x	x	x	image	balcony / window / floor plan / street name / window	L	Koppenstr. 25, 10243, Berlin	13.4363780195	52.5158870012
149	52.51099	13.45642	Entire rental unit	Entire home/apt	245	1	yes	yes		EhA(183)				x	image	given address		Simon-Dach-Strasse 9, 10245, Berlin	13.4563986604	52.5109873628
150	52.5050299	13.4406259	Entire rental unit	Entire home/apt	245	10	yes	legal entity		EhA(183)		x	x	x	image	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
151	52.5050299	13.4406259	Entire rental unit	Entire home/apt	249	68	never	legal entity		EhA(183)		x	x	x	image	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
152	52.50965	13.4541	Entire rental unit	Entire home/apt	25	1	yes	yes		IEIA				x	image	window		Kopernikusstr. 13, 10245, Berlin	13.4541469455	52.5101568641
153	52.52217	13.45346	Entire rental unit	Entire home/apt	25	1	yes	yes		IEIA				x	image	balcony		Mühsamstr. 71, 10249, Berlin	13.4537756267	52.5213921926
154	52.50762	13.45248	Entire rental unit	Entire home/apt	253	1	no		x	EhA(183)									13.45248	52.50762
155	52.51621	13.47238	Entire rental unit	Entire home/apt	256	1	no		x	EhA(183)				x	image	balcony		Karl-Marx-Allee 109, 10243, Berlin	13.4487153882	52.5172002867
156	52.5050299	13.4406259	Entire rental unit	Entire home/apt	256	68	never	legal entity		EhA(183)		x	x	x	image	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
157	52.50833	13.461	Entire rental unit	Entire home/apt	257	2	yes		x	EhA(183)		x	x						13.461	52.50833
158	52.50776	13.46465	Entire rental unit	Entire home/apt	257	3	yes	yes		EhA(183)		x	x	x	image	building front / balcony		Böcklinstr. 15, 10245, Berlin	13.4661666831	52.5071128523
159	52.52039	13.43531	Entire condo	Entire home/apt	258	1	yes	yes		EhA(183)				x	image	building front		Friedrichsberger Str. 8, 10243, Berlin	13.4342545643	52.5208694296
160	52.5127	13.46044	Entire rental unit	Entire home/apt	258	1	yes	yes		EhA(183)									13.46044	52.5127
161	52.50378	13.44057	Entire rental unit	Entire home/apt	258	1	yes		x	EhA(183)									13.44057	52.50378
162	52.5109	13.47275	Entire condo	Entire home/apt	258	1	yes	yes		EhA(183)									13.47275	52.5109
163	52.51801	13.46882	Entire loft	Entire home/apt	26	1	yes	legal entity		IEIA			x	x	image	given address		Datziger Str. 20, 10247	13.4679600286	52.5187231917
164	52.51183	13.46657	Entire rental unit	Entire home/apt	26	1	yes	yes		IEIA				x	image	window		Jungstr. 28, 10247, Berlin	13.4666015444	52.5119816091
165	52.51866	13.43159	Entire rental unit	Entire home/apt	262	1	yes		x	EhA(183)				x	image	balcony / window		Andreasstr. 46, 10243, Berlin	13.4324993663	52.517566535
166	52.51783	13.46342	Entire rental unit	Entire home/apt	267	16	no		x	EhA(183)		x	x	x	image	building front		Bänschestr. 37, 10247, Berlin	13.4638334695	52.5186787066
167	52.51632	13.45871	Private room in rental unit	Private room	283	1	yes	yes		ISIA				x	image	building front		Frankfurter Allee 25, 10247, Berlin	13.4594541839	52.5158239076
168	52.5050299	13.4406259	Entire rental unit	Entire home/apt	269	10	yes	legal entity		EhA(183)		x	x	x	image	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
169	52.50967144051229	13.457458189961173	Entire condo	Entire home/apt	269	1	never	yes		EhA(183)									13.457458189961173	52.50967146051229
170	52.51519	13.43211	Private room in rental unit	Private room	3	1	yes	yes		ISIA				x	image	balcony		Andreasstr. 21A, 10243, Berlin	13.4330706733	52.5141133437

171	52.51831	13.44737	Private room in rental unit	Private room	23	12	no		x	SIA	3 months	x	x			G		13.44737	52.51831		
172	52.52878	13.43328	Entire rental unit	Entire home/apt	27	1	yes	name & address		IEIA			x	given address				Bötzowstr. 10, 10409, Berlin	13.4322049994	52.5288247531	roof
173	52.51131	13.46017	Entire rental unit	Entire home/apt	271	2	yes		x	EhA(183)		x	x	image	window		Gabriel-Max-Straße 8, 10245, Berlin	13.46017	52.51131		
174	52.52357	13.44764	Room in boutique hotel	Hotel room	362	1	yes	legal entity		IEhA(90-183)			x	given address			Petersburger Str. 24, 10249, Berlin	13.4484697109	52.5243431085		
175	52.51457169246413	13.456166472491455	Entire loft	Entire home/apt	271	1	no		x	EhA(183)			x	image	window		Boxhagener Str. 117, 10245, Berlin	13.4554767715	52.5140424413		
176	52.51787	13.46649	Entire rental unit	Entire home/apt	274	4	yes	name & address		IEhA(183)		x	x	x	given address		Samariterstr. 30, 10247, Berlin	13.4652391215	52.5171212866		
177	52.51367	13.45527	Entire rental unit	Entire home/apt	275	1	yes	yes		IEhA(183)			x	image	building front / window / balcony		Frankfurter Allee 12, 10247, Berlin	13.4566778416	52.5152621673		
178	52.52118	13.45307	Entire rental unit	Entire home/apt	275	2	yes	name & address		IEhA(183)		x	x	x	given address		Matternstr. 11, 10249, Berlin	13.453857773	52.5222185798		
179	52.5050299	13.4406259	Entire rental unit	Entire home/apt	275	10	yes	legal entity		IEhA(183)		x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761		
180	52.50903	13.45442	Private room in Shared room in hostel	Private room	18	1	yes	yes		ISIA			x	image	window		Simon-Dach-Str. 17, 10245, Berlin	13.4556015438	52.5092629026		
181	52.51596	13.42629	Private room in hostel	Shared room	87	49	yes	legal entity		IEhA(90-183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
182	52.51627	13.4286	Private room in hostel	Private room	93	49	yes	legal entity		IEhA(90-183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
183	52.51719	13.4285	Shared room in hostel	Shared room	240	49	yes	legal entity		IEhA(183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
184	52.51695	13.42652	Shared room in hostel	Shared room	305	49	no	legal entity		IEhA(183)		x	x	x	given address		Singerstr. 109, 10179, Berlin	13.4252500694	52.5166687887		
185	52.49699	13.4625	Private room in condo	Private room	246	1	yes	yes		ISHA			x	image	balcony / window / floor plan		Straßauer Allee 14, 10245, Berlin	13.4616671724	52.4979016879		
186	52.49518	13.46832	Entire rental unit	Entire home/apt	278	8	yes		x	EhA(183)	3 months	x	x	x	image	balcony	Mainzer Str. 24, 10247, Berlin	13.463078894	52.5140848672	roof	
187	52.51047	13.44726	Private room in hostel	Private room	321	13	yes	legal entity		IEhA(183)		x	x	x	given address		Helsingforsler Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
188	52.51054	13.44691	Shared room in hostel	Shared room	341	13	yes	legal entity		IEhA(183)		x	x	x	given address		Helsingforsler Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
189	52.51069	13.44513	Shared room in hostel	Shared room	338	13	yes	legal entity		IEhA(183)		x	x	x	given address		Helsingforsler Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
190	52.50882	13.44502	Shared room in hostel	Shared room	317	13	yes	legal entity		IEhA(183)		x	x	x	given address		Helsingforsler Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
191	52.50923	13.45793	Entire rental unit	Entire home/apt	28	1	yes	name & address		IEIA			x	given address			Wühlschestr. 37, 10245, Berlin	13.4589496831	52.5090801138		
192	52.52511	13.45048	Private room in rental unit	Private room	216	1	yes		x	SHA								13.45048	52.52511		
193	52.51252909999999	13.4577807	Entire rental unit	Entire home/apt	28	18	never	legal entity		IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	roof	
194	52.5050299	13.4406259	Entire rental unit	Entire home/apt	280	68	never	legal entity		IEhA(183)		x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761		
195	52.5211583	13.4461129	Entire rental unit	Entire home/apt	282	68	never	legal entity		IEhA(183)		x	x	x	given address		Auerstr. 47, 10249, Berlin	13.4461737834	52.5212740426		
196	52.48922	13.4862	Houseboat	Entire home/apt	3	4	yes	legal entity		IEIA		x	x	x	given address		Kratzbruch 1, 10245, Berlin	13.4854505484	52.4891421928		
197	52.50708	13.45595	Entire rental unit	Entire home/apt	283	1	yes		x	EhA(183)								13.45595	52.50708		
198	52.51991	13.44221	Private room in rental unit	Private room	87	1	yes	yes		ISIA			x	image	window		Auerstr. 7, 10249, Berlin	13.4434230902	52.5187742916		
199	52.51203	13.45969	Private room in loft	Private room	248	3	yes	name & address		IEhA(183)		x	x	x	given address	J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818		
200	52.50892	13.46614	Entire rental unit	Entire home/apt	284	20	yes	legal entity		IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954		
201	52.50907	13.44713	Shared room in hostel	Shared room	322	13	yes	legal entity		IEhA(183)		x	x	x	given address		Helsingforsler Str. 17, 10243, Berlin	13.4462920134	52.5096491748		
202	52.51756	13.46978	Room in serviced apartment	Hotel room	317	7	yes	legal entity		IEhA(183)		x	x	x	given address		Bänschstr. 79, 10247, Berlin	13.4698625885	52.5175762115		
203	52.50925	13.46682	Entire serviced apartment	Entire home/apt	279	4	yes	legal entity		IEhA(183)		x	x	x	given address		Holteistr. 20, 10245, Berlin	13.4666858169	52.5092797769		
204	52.50925	13.46682	Entire serviced apartment	Entire home/apt	266	4	yes	legal entity		IEhA(183)		x	x	x	given address		Holteistr. 20, 10245, Berlin	13.4666858169	52.5092797769		
205	52.5050299	13.4406259	Entire rental unit	Entire home/apt	284	68	never	legal entity		IEhA(183)		x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761		
206	52.51093	13.4607	Entire condo	Entire home/apt	287	3	yes	name & address		IEhA(183)		x	x	x	given address	J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818		
207	52.5211583	13.4461129	Entire rental unit	Entire home/apt	287	68	never	legal entity		IEhA(183)		x	x	x	given address		Auerstr. 47, 10249, Berlin	13.4554767715	52.5140424413		
208	52.50925	13.46682	Entire serviced apartment	Entire home/apt	262	4	yes	legal entity		IEhA(183)		x	x	x	given address		Holteistr. 20, 10245, Berlin	13.4666858169	52.5092797769		
209	52.50925	13.46682	Entire serviced apartment	Entire home/apt	278	4	yes	legal entity		IEhA(183)		x	x	x	given address		Holteistr. 20, 10245, Berlin	13.4666858169	52.5092797769		
210	52.52141	13.45476	Private room in rental unit	Private room	13	1	yes		x	SIA								13.45476	52.52141		
211	52.4985	13.47112	Private room in rental unit	Private room	139	1	yes	yes		ISHA			x	image	window / outdoor area		Glasbläserallee 18, 10245, Berlin	13.4687685026	52.4970519742		
212	52.51876	13.44355	Entire rental unit	Entire home/apt	288	1	yes	yes		IEhA(183)								13.44355	52.51876		
213	52.50677	13.46584	Entire rental unit	Entire home/apt	289	20	yes	legal entity		IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954		
214	52.5184	13.46678	Entire rental unit	Entire home/apt	289	2	yes	yes		IEhA(183)		x	x	x	image	building front	M	Bänschstr. 59, 10247, Berlin	13.4689224379	52.5182281640	
215	52.51322	13.44234	Private room in rental unit	Private room	10	1	yes	yes		ISIA								13.44234	52.51322		
216	52.50907	13.46084	Entire loft	Entire home/apt	289	5	yes	legal entity		IEhA(183)		x	x	x	given address		Krossenerstr. 7, 10245, Berlin	13.4618424834	52.5101211691		
217	52.52385	13.44513	Entire serviced apartment	Entire home/apt	319	6	yes	legal entity		IEhA(183)		x	x	x	given address		Richard-Sorge-Str. 37, 10249, Berlin	13.4459628163	52.5226364601		
218	52.49867	13.46071	Entire rental unit	Entire home/apt	29	1	yes	name & address		IEIA			x	given address			Straßauer Allee 14, 10245, Berlin	13.4616671724	52.4979016879		
219	52.51389	13.4505	Entire rental unit	Entire home/apt	29	1	yes	yes		IEIA			x	image	balcony / outdoor area		Kadiner Str. 18, 10243, Berlin	13.4505346831	52.5137846528		
220	52.50813	13.45988	Private room in rental unit	Private room	5	1	yes		x	SIA								13.45988	52.50813		
221	52.51842972120935	13.458351874556252	Entire rental unit	Entire home/apt	29	1	yes	yes		IEIA			x	image	balcony		Weidenweg 75, 10247, Berlin	13.4571697154	52.518580835		
222	52.50973	13.45418	Entire rental unit	Entire home/apt	291	1	no		x	EhA(183)								13.45418	52.50973		
223	52.51427	13.44885	Entire rental unit	Entire home/apt	291	1	yes	(yes_name)		IEhA(183)			x	given address			Lasdehner Str. 30, 10243, Berlin	13.4478610358	52.5138824735		
224	52.51395	13.45425	Room in aparthotel	Private room	323	6	never	(yes_entity)		ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655		
225	52.51376	13.45425	Room in aparthotel	Private room	347	6	yes	(yes_entity)		ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655		
226	52.51376	13.45425	Room in aparthotel	Private room	339	6	yes	(yes_entity)		ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655		
227	52.51376	13.45425	Room in aparthotel	Private room	349	6	no	(yes_entity)		ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655		

228	52.51376	13.45425	Room in apartment	Private room	353	6	no	(yes_entity)	ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655
229	52.51376	13.45425	Room in apartment	Private room	336	6	yes	(yes_entity)	ISHA		x	x	x	given address		Boxhagener Str. 13, 10245, Berlin	13.4542440141	52.5137732655
230	52.51311	13.46123	Entire condo	Entire homelapt	291	3	yes	name & address	IEhA(183)		x	x	x	given address	J	Boxhagener Str. 33, 10245, Berlin	13.4602623710	52.5121942818
231	52.5166	13.45919	Private room in rental unit	Private room	71	1	no	(yes_number)	ISIA								13.45919	52.5166
232	52.50881	13.46681	Entire rental unit	Entire homelapt	292	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
233	52.49949	13.46274	Private room in rental unit	Private room	3	2	yes	yes	ISIA		x	x			I		13.46274	52.49949
234	52.51372	13.46155	Entire rental unit	Entire homelapt	296	6	yes	legal entity	IEhA(183)		x	x	x	given address		Mainzerstr. 3, 10247, Berlin	13.4626659072	52.514103664
235	52.52148	13.45298	Entire rental unit	Entire homelapt	297	2	yes	name & address	IEhA(183)		x	x	x	given address		Matternstr. 11, 10249, Berlin	13.453857773	52.5222185798
236	52.5066	13.46657	Entire rental unit	Entire homelapt	297	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
237	52.5169	13.43227	Private room in rental unit	Private room	49	1	yes	yes	ISIA				x	image	window	Andreasstr. 51, 10243, Berlin	13.4321886327	52.5164346561
238	52.50655	13.46879	Private room in rental unit	Private room	149	1	yes	(fake)	SIA				x	image	window	Lenbachstr. 17, 10245, Berlin	13.4684104803	52.5056106632
239	52.50853889445543	13.46609794670947	Entire rental unit	Entire homelapt	297	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
240	52.4985	13.46181	Private room in rental unit	Private room	298	1	yes	yes	ISHA				x	image	building front	Stralauer Allee 19a, 10245, Berlin	13.4619970989	52.4987395808
241	52.51859	13.4356	Private room in rental unit	Private room	36	1	no		SIA		x						13.4356	52.51859
242	52.5135	13.45802	Entire rental unit	Entire homelapt	298	2	yes	(yes_number)	IEhA(183)		x	x					13.45802	52.5135
243	52.50807	13.46162	Entire loft	Entire homelapt	298	1	yes	x	EhA(183)				x	image	balcony	Knorrpromenade 1, 10245, Berlin	13.4626590867	52.5086458473
244	52.50943	13.46652	Private room in rental unit	Private room	64	1	no	x	SIA				x	image	window	Boxhagener Str. 818, 10245, Berlin	13.4670386449	52.5083368649
245	52.51292	13.47	Entire rental unit	Entire homelapt	298	1	yes	legal entity	IEhA(183)		x		x	given address		Weichselstr. 6, 10245, Berlin	13.4700475428	52.512895863
246	52.51874	13.43763	Private room in rental unit	Private room	5	12	yes	x	SIA	3 months	x	x			H		13.43763	52.51874
247	52.51868	13.43726	Private room in rental unit	Private room	1	12	yes	x	SIA	3 months	x	x			H		13.43726	52.51868
248	52.50851098830652	13.467815949707373	Entire rental unit	Entire homelapt	299	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
249	52.5169	13.47207	Entire rental unit	Entire homelapt	3	1	yes	yes	IEIA				x	image	balcony / window / floor plan	Pettenkoferstr. 4C, 10247, Berlin	13.4728302818	52.5168907554
250	52.51255	13.45778	Entire serviced apartment	Entire homelapt	46	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
251	52.51825	13.46631	Entire rental unit	Entire homelapt	3	1	yes	x	EIA				x	image	balcony	Bänschestr. 52, 10247, Berlin	13.4652636604	52.5180032109
252	52.51255	13.45778	Private room in serviced apartment	Private room	81	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
253	52.51255	13.45778	Entire serviced apartment	Entire homelapt	45	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
254	52.51255	13.45778	Entire serviced apartment	Entire homelapt	69	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
255	52.51655	13.4651	Entire rental unit	Entire homelapt	3	1	yes	yes	IEIA								13.4651	52.51655
256	52.51255	13.45778	Entire serviced apartment	Entire homelapt	69	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
257	52.50818	13.46828	Entire rental unit	Entire homelapt	3	1	yes	(yes_number)	IEIA								13.46828	52.50818
258	52.51194	13.45907	Entire rental unit	Entire homelapt	3	1	yes	name & address	IEIA				x	given address		Kopernikustr. 4, 10243, Berlin	13.4590609134	52.5108048866
259	52.522267945341504	13.446458628989904	Entire condo	Entire homelapt	3	1	yes	name & address	IEIA				x	given address		Auerstr. 34, 10249, Berlin	13.4457304705	52.5203817594
260	52.512529099999999	13.4577807	Entire rental unit	Entire homelapt	30	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
261	52.50904	13.46521	Entire rental unit	Entire homelapt	301	1	yes	yes	IEhA(183)								13.46521	52.50904
262	52.5174	13.46388	Entire rental unit	Entire homelapt	303	1	yes	name & address	IEhA(183)				x	given address		Schreiner Str. 61, 10247, Berlin	13.4629429492	52.5179424853
263	52.52197	13.44808	Entire rental unit	Entire homelapt	304	5	yes	name & address	IEhA(183)		x	x	x	given address		Danziger Str. 207, 10407, Berlin	13.4444394678	52.5299308671
264	52.52904	13.44365	Entire rental unit	Entire homelapt	304	5	yes	name & address	IEhA(183)		x	x	x	given address		Danziger Str. 207, 10407, Berlin	13.4444394678	52.5299308671
265	52.51255	13.45778	Entire serviced apartment	Entire homelapt	63	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
266	52.51255	13.45778	Entire serviced apartment	Entire homelapt	46	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
267	52.5201993	13.4507591	Private room in rental unit	Private room	1	1	yes	yes	ISIA				x	image	balcony / window / outdoor area	Mühsamstr. 67, 10249, Berlin	13.4534755001	52.5210400903
268	52.50829	13.46612	Entire rental unit	Entire homelapt	305	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
269	52.4995	13.46112	Entire rental unit	Entire homelapt	305	2	yes	yes	IEhA(183)		x	x					13.46112	52.4995
270	52.51287437518184	13.459475372531935	Entire rental unit	Entire homelapt	305	31	never	legal entity	IEhA(183)		x	x	x	given address		Urbanstr. 46, 10967, Berlin	13.4117378465	52.4904906129
271	52.51224	13.45711	Private room in loft	Private room	39	1	yes	(fake)	SIA	x			x	image	balcony / window	Boxhagener Str. 22, 10245, Berlin	13.4563656309	52.513086471
272	52.51297	13.46231	Private room in rental unit	Private room	257	1	yes	yes	ISHA				x	image	window	Mainzer Str. 23, 10247, Berlin	13.4631782066	52.5138222166
273	52.50166	13.45113	Private room in rental unit	Private room	17	1	yes	yes	ISIA				x	image	balcony	Stralauer Allee 5, 10245, Berlin	13.4528714616	52.5005869869
274	52.51312	13.4582	Entire rental unit	Entire homelapt	306	2	yes	(yes_number)	IEhA(183)		x	x					13.4582	52.51312
275	52.51162	13.45716	Entire serviced apartment	Entire homelapt	49	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532
276	52.51552	13.45439	Private room in rental unit	Private room	24	1	yes	(yes_number)	ISIA								13.45439	52.51552
277	52.50861	13.46769	Entire rental unit	Entire homelapt	307	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
278	52.513853	13.472735	Entire rental unit	Entire homelapt	307	6	yes	legal entity	IEhA(183)		x	x	x	given address		Frankfurter Allee 98, 10247, Berlin	13.472689288	52.5136731824
279	52.50855	13.47021	Entire rental unit	Entire homelapt	310	3	yes	name & address	IEhA(183)		x	x	x	given address	C	Jessenerstr. 62, 10247, Berlin	13.4696889403	52.5093859169
280	52.50839	13.4679	Entire rental unit	Entire homelapt	311	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
281	52.5081	13.46593	Entire rental unit	Entire homelapt	311	20	yes	legal entity	IEhA(183)		x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
282	52.50605	13.47	Entire rental unit	Entire homelapt	313	6	yes	name & address	IEhA(183)		x	x	x	given address	D	Boxhagener Str. 61, 10245, Berlin	13.4698762721	52.5062139558
283	52.52266	13.43388	Entire rental unit	Entire homelapt	313	4	yes	name & address	IEhA(183)		x	x	x	given address		Friedenstr. 37, 10249, Berlin	13.4348388022	52.5219019306
284	52.51163	13.45884	Entire serviced apartment	Entire homelapt	48	18	yes	legal entity	IEIA		x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532

285	52.51317	13.45708	Entire serviced apartment	Entire home/apt	67	18	yes	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	roof
286	52.52814	13.42636	Room in hotel	Private room	192	4	yes	name & address	IShA	x	x	x	given address		Greifswalder Str. 6-7, 10405, Berlin	13.4254772871	52.529202922	
287	52.52201	13.43674	Entire rental unit	Entire home/apt	313	4	yes	name & address	IEhA(183)	x	x	x	given address		Landsberger Allee 18, 10249, Berlin	13.4361841609	52.5231504394	
288	52.50756	13.46542	Entire condo	Entire home/apt	314	1	yes	yes	IEhA(183)			x	image	window / outdoor area	Böcklinstr. 6, 10245, Berlin	13.4663673151	52.5063003318	
289	52.5109	13.46947	Private room in condo	Private room	3	2	yes	yes	ISIA							13.46947	52.5109	roof
290	52.50703	13.46615	Entire rental unit	Entire home/apt	314	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
291	52.51149	13.45869	Entire serviced apartment	Entire home/apt	68	18	yes	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	roof
292	52.51184	13.45838	Entire serviced apartment	Entire home/apt	45	18	yes	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	
293	52.499474	13.463846	Entire condo	Entire home/apt	314	1	yes	yes	IEhA(183)			x	image	building front / description	Corinthstr. 51, 10245, Berlin	13.4637792344	52.4994400523	
294	52.51442	13.45243	Entire loft	Entire home/apt	315	2	yes	yes	IEhA(183)	x	x	x	image	building front / balcony / floor plan	Warschauer Str. 77, 10243, Berlin	13.453221081	52.5131395832	
295	52.50027	13.4604	Entire condo	Entire home/apt	315	1	yes	legal entity	IEhA(183)			x	given address		Corinthstr. 28, 10245, Berlin	13.459991599	52.5004236562	
296	52.506	13.467	Private room in rental unit	Private room	196	2	yes	(yes_number)	IShA							13.467	52.506	
297	52.51731	13.45522	Entire rental unit	Entire home/apt	316	1	yes	yes	IEhA(183)							13.45522	52.51731	
298	52.51355	13.45675	Entire serviced apartment	Entire home/apt	63	18	yes	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	roof
299	52.51836	13.45685	Private room in rental unit	Private room	278	1	no		ShA	x						13.45685	52.51836	
300	52.50889	13.47056	Entire rental unit	Entire home/apt	316	3	yes	name & address	IEhA(183)	x	x	x	given address	C	Jessnerstr. 62, 10245, Berlin	13.4696889403	52.5093858169	
301	52.51177	13.4559	Entire serviced apartment	Entire home/apt	318	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111	
302	52.50686	13.46658	Entire rental unit	Entire home/apt	316	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
303	52.51177	13.4559	Entire serviced apartment	Entire home/apt	327	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111	
304	52.51177	13.4559	Entire serviced apartment	Entire home/apt	326	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111	
305	52.51177	13.4559	Entire serviced apartment	Entire home/apt	313	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111	
306	52.51177	13.4559	Entire serviced apartment	Entire home/apt	308	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111	
307	52.5192	13.46552	Entire rental unit	Entire home/apt	317	1	yes		EhA(183)							13.46552	52.5192	
308	52.5068384925854	13.470095040350552	Entire rental unit	Entire home/apt	317	1	no		EhA(183)							13.470095040350552	52.5068384925854	
309	52.50692	13.46731	Entire rental unit	Entire home/apt	318	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
310	52.50668309470867	13.43622043587313	Private room in condo	Private room	109	1	never	(yes_number)	IShA				image	window	Mühlenstr. 35, 10243, Berlin	13.4380048083	52.50668696959	
311	52.50692	13.46768	Entire loft	Entire home/apt	318	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
312	52.5033	13.4443	Private room in boat	Private room	255	4	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 73, 10243, Berlin	13.4438166216	52.5038995101	
313	52.4895	13.48351	Houseboat	Entire home/apt	2	4	yes	(yes_entity)	IEIA	x	x	x	given address		Kratzbruch 1, 10245, Berlin	13.4854505484	52.4891421926	
314	52.51092	13.4605	Private room in rental unit	Private room	12	1	yes	yes	ISIA							13.4605	52.51092	
315	52.50877	13.46655	Entire rental unit	Entire home/apt	318	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	roof
316	52.50763	13.46028	Entire serviced apartment	Entire home/apt	190	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gärtnerstr. 32, 10245, Berlin	13.4595955601	52.5085584148	
317	52.50969	13.45976	Entire serviced apartment	Entire home/apt	187	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gärtnerstr. 32, 10245, Berlin	13.4595955601	52.5085584148	
318	52.50934	13.46052	Entire serviced apartment	Entire home/apt	186	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gärtnerstr. 32, 10245, Berlin	13.4595955601	52.5085584148	roof
319	52.50783	13.45868	Entire serviced apartment	Entire home/apt	189	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gärtnerstr. 32, 10245, Berlin	13.4595955601	52.5085584148	
320	52.50748	13.46045	Entire serviced apartment	Entire home/apt	189	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gärtnerstr. 32, 10245, Berlin	13.4595955601	52.5085584148	roof
321	52.50702	13.46821	Entire rental unit	Entire home/apt	32	1	yes	fake	EIA	x						13.46821	52.50702	roof
322	52.50975	13.45347	Entire rental unit	Entire home/apt	321	7	yes	name & address	IEhA(183)	x	x	x	given address		Kopernikusstr. 24, 10245, Berlin	13.454129539	52.5104231306	
323	52.50979	13.4679	Private room in condo	Private room	20	1	yes	yes	ISIA							13.4679	52.50979	
324	52.5141	13.47251	Entire rental unit	Entire home/apt	321	5	yes	(yes_entity)	IEhA(183)	x	x	x	given address		Müggelstr. 31, 10247, Berlin	13.4718111627	52.5133641708	
325	52.51104	13.47014	Entire rental unit	Entire home/apt	322	2	yes	legal entity	IEhA(183)	x	x	x	given address		Müggelstr. 9, 10247, Berlin	13.4707024373	52.5120149824	
326	52.48906	13.48545	Houseboat	Entire home/apt	351	4	yes	legal entity	IEhA(183)	x	x	x	given address		Kratzbruch 1, 10245, Berlin	13.4854505484	52.4891421926	
327	52.51364	13.45051	Entire rental unit	Entire home/apt	323	5	yes	(yes_entity)	IEhA(183)	x	x	x	given address		Kadiner Str. 16, 10243, Berlin	13.4504665649	52.5136385087	
328	52.518507076926724	13.462705791509928	Entire rental unit	Entire home/apt	323	1	yes	yes	IEhA(183)							13.462705791509928	52.518507076926724	
329	52.51765	13.42709	Private room in rental unit	Private room	149	1	yes	yes	IShA			x	image	window	Strausberger Platz 18, 10243, Berlin	13.426686553	52.5183490217	
330	52.51291	13.45488	Entire rental unit	Entire home/apt	325	6	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 7, 10245, Berlin	13.4542440141	52.5137732655	
331	52.50991	13.46061	Entire loft	Entire home/apt	327	5	yes	legal entity	IEhA(183)	x	x	x	given address		Krossenerstr. 7, 10245, Berlin	13.4618424834	52.510121691	
332	52.50864	13.456	Private room in rental unit	Private room	4	1	yes		ShA			x	image	balcony / window	Revaler Str. 14, 10245, Berlin	13.4548372649	52.5080308492	
333	52.5057	13.46895	Entire rental unit	Entire home/apt	329	2	yes	name & address	IEhA(183)	x	x	x	given address	D	Boxhagener Str. 61, 10245, Berlin	13.4696762721	52.5082139558	
334	52.52502	13.45103	Entire rental unit	Entire home/apt	329	15	yes	legal entity	IEhA(183)	x	x	x	given address		Kochhamstr. 27, 10247, Berlin	13.4511227173	52.5249464428	
335	52.50676	13.46668	Entire rental unit	Entire home/apt	329	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
336	52.52929	13.44332	Entire rental unit	Entire home/apt	330	5	yes	name & address	IEhA(183)	x	x	x	given address		Danziger Str. 207, 10487, Berlin	13.4444394678	52.529308071	
337	52.513206	13.429037	Private room in rental unit	Private room	324	1	yes	yes	IShA							13.429037	52.513206	
338	52.51616	13.43212	Room in hotel	Private room	122	3	yes	legal entity	IEhA(90-183)	x	x	x	given address		Stralauer Platz 30-31, 10243, Berlin	13.4313811144	52.5095488626	
339	52.509636	13.431273	Room in hotel	Private room	122	3	yes	legal entity	IEhA(90-183)	x	x	x	given address		Stralauer Platz 30-31, 10243, Berlin	13.4313811144	52.5095488626	
340	52.509636	13.431273	Room in hotel	Private room	122	3	yes	legal entity	IEhA(90-183)	x	x	x	given address		Stralauer Platz 30-31, 10243, Berlin	13.4313811144	52.5095488626	
341	52.51258	13.47053	Entire rental unit	Entire home/apt	331	15	yes	legal entity	IEhA(183)	x	x	x	given address		Scharnweberstr. 14, 10247, Berlin	13.4704901347	52.5124879319	

342	52.51943	13.46925	Entire rental unit	Entire home/apt	331	5	yes	(yes_entity)	IEhA(183)	x	x	x	given address		Eldenaer Str. 29, 10247, Berlin	13.4699592635	52.5202576145
343	52.5109799	13.4656871	Entire condo	Entire home/apt	331	1	never	yes	IEhA(183)			x	image	balcony	Jungstr. 23, 10247, Berlin	13.4655804337	52.5109141553
344	52.50855	13.46883	Entire rental unit	Entire home/apt	333	3	yes	name & address	IEhA(183)	x	x	x	given address		Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
345	52.52241	13.45147	Entire rental unit	Entire home/apt	334	9	yes	legal entity	IEhA(183)	x	x	x	given address		Straßmannstr. 26, 10249, Berlin	13.4514333333	52.5223956579
346	52.50941949107137	13.474209290324562	Private room in condo	Private room	13	1	yes	yes	ISIA			x	image	window	Gürtelstr. 26A, 10247, Berlin	13.4730476692	52.5088264116
347	52.50861	13.4665	Entire rental unit	Entire home/apt	334	20	yes	legal entity	IEhA(183)	x	x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954
348	52.51291	13.47145	Entire rental unit	Entire home/apt	334	2	yes	legal entity	IEhA(183)	x	x	x	given address		Müggelestr. 9, 10247, Berlin	13.4707202473	52.5129149824
349	52.50967	13.46463	Entire rental unit	Entire home/apt	334	5	yes	legal entity	IEhA(183)	x	x	x	given address		Gryphustr. 10, 10245, Berlin	13.4637931002	52.5086536975
350	52.51325	13.44829	Room in hotel	Private room	181	5	yes	legal entity	IEhA(90-183)	x	x	x	given address		Gubener Str. 46, 10243, Berlin	13.4486868677	52.5120017059
351	52.51301	13.44941	Room in hotel	Private room	238	5	yes	(yes_entity)	IShA	x	x	x	given address		Gubener Str. 46, 10243, Berlin	13.4486868677	52.5120017059
352	52.51289	13.44771	Room in hotel	Private room	246	5	yes	(yes_entity)	IShA	x	x	x	given address		Gubener Str. 46, 10243, Berlin	13.4486868677	52.5120017059
353	52.51325	13.44803	Room in hotel	Private room	235	5	yes	(yes_entity)	IShA	x	x	x	given address		Gubener Str. 46, 10243, Berlin	13.4486868677	52.5120017059
354	52.51152	13.44988	Room in hotel	Private room	229	5	yes	(yes_entity)	IShA	x	x	x	given address		Gubener Str. 46, 10243, Berlin	13.4486868677	52.5120017059
355	52.51894	13.46013	Entire rental unit	Entire home/apt	334	2	yes	yes	IEhA(183)	x	x	x	image	outdoor area	Proskauer Str. 24, 10247, Berlin	13.4612971648	52.518157413
356	52.51149	13.46627	Private room in rental unit	Private room	142	1	yes	yes	IShA							13.46627	52.51149
357	52.52328	13.43515	Entire rental unit	Entire home/apt	335	4	yes	name & address	IEhA(183)	x	x	x	given address		Landsberger Allee 18, 10249, Berlin	13.4361841609	52.5231040394
358	52.52285	13.44715	Entire rental unit	Entire home/apt	335	3	yes	legal entity	IEhA(183)	x	x	x	given address		Richard-Sorge-Str. 37, 10249, Berlin	13.4459628163	52.5226364601
359	52.51737	13.46192	Entire rental unit	Entire home/apt	338	2	yes	yes	IEhA(183)	x	x	x	image	building front	Proskauer Str. 24, 10247, Berlin	13.4609374188	52.5182179009
360	52.51095	13.47141	Entire rental unit	Entire home/apt	34	1	yes	yes	IEIA							13.47141	52.51095
361	52.51289	13.46942	Entire rental unit	Entire home/apt	340	3	yes	name & address	IEhA(183)	x	x	x	given address		Weichselestr. 30, 10247, Berlin	13.4704035672	52.5125874596
362	52.5214867	13.4461563	Entire rental unit	Entire home/apt	341	3	yes	legal entity	IEhA(183)	x	x	x	given address		Richard-Sorge-Str. 68, 10249, Berlin	13.4462150002	52.5214874996
363	52.51046	13.46401	Room in hotel	Private room	91	3	yes	name & address	IEhA(90-183)	x	x	x	given address		Wesenerstr. 24, 10247, Berlin	13.4636655672	52.5113913829
364	52.51202	13.46289	Room in hotel	Private room	88	3	yes	name & address	IEIA	x	x	x	given address		Wesenerstr. 24, 10247, Berlin	13.4636655672	52.5113913829
365	52.51176	13.46483	Room in hotel	Private room	79	3	yes	name & address	IEIA	x	x	x	given address		Wesenerstr. 24, 10247, Berlin	13.4636655672	52.5113913829
366	52.52477	13.45048	Entire rental unit	Entire home/apt	342	1	yes		x IEhA(183)							13.45048	52.52477
367	52.51058	13.47006	Entire rental unit	Entire home/apt	342	6	yes	name & address	IEhA(183)	x	x	x	given address		Jessnerstr. 62, 10247, Berlin	13.4696889403	52.5093858169
368	52.51917	13.46819	Entire rental unit	Entire home/apt	344	2	yes	legal entity	IEhA(183)	x	x	x	given address		Doblinger Str. 22, 10247, Berlin	13.4683475012	52.5186513991
369	52.50165	13.45335	Entire condo	Entire home/apt	344	1	yes	name & address	IEhA(183)			x	given address		Lehmbruck Str. 13, 10245, Berlin	13.4530125677	52.5027125268
370	52.524162770901306	13.428880895141708	Private room in rental unit	Private room	14	1	never	yes	ISIA							13.428880895141708	52.524162770901306
371	52.52241	13.45147	Entire rental unit	Entire home/apt	345	9	yes	legal entity	IEhA(183)	x	x	x	given address		Straßmannstr. 26, 10249, Berlin	13.4514333333	52.5223956579
372	52.49069	13.48352	Houseboat	Entire home/apt	140	4	yes	legal entity	IEhA(90-183)	x	x	x	given address		Kratzbruch 1, 10245, Berlin	13.4854505484	52.4891421926
373	52.5050299	13.4406259	Entire rental unit	Entire home/apt	348	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
374	52.52422	13.42879	Entire rental unit	Entire home/apt	349	2	yes	fake	x IEhA(183)			x	image	building front / window	Höchste Str. 10, 10249, Berlin	13.4281616012	52.5252752395
375	52.51181	13.455815	Entire serviced apartment	Entire home/apt	320	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111
376	52.52639	13.42752	Entire rental unit	Entire home/apt	349	2	yes	fake	x IEhA(183)			x	image	building front / window	Höchste Str. 10, 10249, Berlin	13.4281616012	52.5252752395
377	52.51181	13.455815	Entire serviced apartment	Entire home/apt	315	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111
378	52.51181	13.455815	Entire serviced apartment	Entire home/apt	326	8	yes	legal entity	IEhA(183)	x	x	x	given address		Grünberger Str. 54, 10245, Berlin	13.455842072	52.5117350111
379	52.5050299	13.4406259	Entire rental unit	Entire home/apt	349	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
380	52.51161	13.46221	Entire condo	Entire home/apt	35	1	yes	yes	IEIA							13.46221	52.51161
381	52.505699	13.469476	Entire rental unit	Entire home/apt	350	14	never	legal entity	IEhA(183)	x	x	x	given address		Neue Bahnhofstr. 29, 10245, Berlin	13.4694901643	52.5056677782
382	52.5173	13.46256	Entire serviced apartment	Entire home/apt	347	6	yes	legal entity	IEhA(183)	x	x	x	given address		Rigaer Str. 80, 10247, Berlin	13.4637034993	52.5167712012
383	52.50428	13.44344	Private room in houseboat	Private room	249	4	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 73, 10243, Berlin	13.4438166216	52.5030895101
384	52.5050299	13.4406259	Entire rental unit	Entire home/apt	350	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
385	52.5050299	13.4406259	Entire rental unit	Entire home/apt	350	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
386	52.50402	13.44522	Private room in houseboat	Private room	252	4	never	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 73, 10243, Berlin	13.4438166216	52.5030895101
387	52.50224	13.44409	Private room in houseboat	Private room	252	4	never	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 73, 10243, Berlin	13.4438166216	52.5030895101
388	52.5050299	13.4406259	Entire rental unit	Entire home/apt	352	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
389	52.5050299	13.4406259	Entire rental unit	Entire home/apt	353	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
390	52.52275192096333	13.454806026153097	Entire condo	Entire home/apt	354	32	never	name & address	IEhA(183)	x	x	x	given address		Ebertstr. 21, 10249, Berlin	13.4538718638	52.523207992
391	52.50744	13.45179	Private room in rental unit	Private room	43	1	yes	yes	ISIA							13.45179	52.50744
392	52.5050299	13.4406259	Entire rental unit	Entire home/apt	354	10	yes	legal entity	IEhA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761
393	52.51211	13.45796	Entire loft	Entire home/apt	358	1	no		x IEhA(183)		3 months		image	balcony / window	Boxhagener Str. 111, 10245, Berlin	13.4572232653	52.5137886957
394	52.50367	13.446684	Entire serviced apartment	Entire home/apt	253	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833
395	52.50367	13.446684	Entire serviced apartment	Entire home/apt	264	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833
396	52.50367	13.446684	Entire serviced apartment	Entire home/apt	284	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833
397	52.50367	13.446684	Entire serviced apartment	Entire home/apt	313	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833
398	52.50367	13.446684	Entire serviced apartment	Entire home/apt	314	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833

399	52.50367	13.446684	Entire serviced apartment	Entire home/apt	307	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833	
400	52.51269	13.46648	Entire rental unit	Entire home/apt	365	3	no		EhA(183)	x	x					13.46648	52.51269	
401	52.50367	13.446684	Entire serviced apartment	Entire home/apt	254	7	yes	legal entity	IEhA(183)	x	x	x	given address		Warschauerstr. 47, 10243, Berlin	13.4471140093	52.5035633833	
402	52.51383	13.47205	Entire rental unit	Entire home/apt	365	1	no		EhA(183)	x						13.47205	52.51383	
403	52.5166295	13.4547409	Entire rental unit	Entire home/apt	365	1	no	x	EhA(183)			x	image	building front / window	Frankfurter Tor 4, 10243, Berlin	13.4548526533	52.516842593	
404	52.50288	13.45387	Entire rental unit	Entire home/apt	37	1	yes	yes	IEIA			x	image	balcony / outdoor area	Lehmbruckstr. 14, 10245, Berlin	13.4526948752	52.5029675021	
405	52.515068	13.457919	Entire rental unit	Entire home/apt	37	1	yes	name & address	IEIA			x	given address		Frankfurter Allee 18, 10247, Berlin	13.4580217832	52.5151171513	
406	52.50834	13.45504	Entire rental unit	Entire home/apt	38	1	yes	(yes_number)	IEIA							13.45504	52.50834	
407	52.51279	13.44946	Entire loft	Entire home/apt	39	1	yes	name & address	IEIA			x	given address		Gubener Str. 44, 10243, Berlin	13.448935904	52.5117058671	
408	52.51171	13.43211	Private room in rental unit	Private room	348	2	yes	name & address	IShA	x	x	x	given address	B	Lange Str. 74, 10243, Berlin	13.4332333907	52.5127601356	roof
409	52.51776	13.44832	Entire rental unit	Entire home/apt	4	12	no		EIA	3 months	x	x				13.44832	52.51776	
410	52.51791	13.44797	Entire condo	Entire home/apt	4	1	yes	yes	IEIA			x	image	building front / window	Karl-Marx-Allee 131, 10243, Berlin	13.4490790858	52.5168606722	
411	52.520199	13.450759	Private room in condo	Private room	137	1	yes	yes	IShA			x	image	window / floor plan	Mühsamstr. 38, 10249, Berlin	13.4492051874	52.5196617916	
412	52.51857	13.46112	Entire rental unit	Entire home/apt	4	1	yes	(yes_number)	IEIA							13.46112	52.51857	
413	52.5233	13.45126	Entire rental unit	Entire home/apt	4	4	yes	name & address	IEIA	x	x	x	given address	A	Weisbachstr. 7, 10249, Berlin	13.4509997703	52.5241757486	
414	52.52523	13.45202	Private room in rental unit	Private room	351	4	yes	name & address	IShA	x	x	x	given address	A	Weisbachstr. 7, 10249, Berlin	13.4509997703	52.5241757486	
415	52.517162330123305	13.44632282806644	Entire rental unit	Entire home/apt	40	1	yes	yes	IEIA							13.44632282806644	52.517162330123305	
416	52.51492	13.45801	Entire rental unit	Entire home/apt	42	3	yes	name & address	IEIA	x	x	x	given address		Frankfurter Allee 18, 10247, Berlin	13.4580217832	52.5151171513	
417	52.51095	13.44985	Entire rental unit	Entire home/apt	44	2	yes	name & address	IEIA	x	x	x	given address		Gubenerstr. 37, 10243, Berlin	13.4500996601	52.5101289665	
418	52.52466	13.44637	Entire rental unit	Entire home/apt	46	1	yes	(yes_name)	IEIA			x	given address		Petersburger Str. 30, 10249, Berlin	13.4490871151	52.5235397833	
419	52.50963	13.46281	Entire rental unit	Entire home/apt	47	1	yes	yes	IEIA							13.46281	52.50963	
420	52.52587	13.45213	Entire rental unit	Entire home/apt	48	3	yes		EIA	3 months	x	x				13.45213	52.52587	
421	52.51013	13.46075	Private room in rental unit	Private room	65	6	yes	yes	IShA		x	x	image	balcony	Weserstr. 17, 10247, Berlin	13.4659280376	52.5104336204	
422	52.51626	13.44668	Private room in condo	Private room	168	2	never	yes	IShA		x	x	image	building front / window	Karl-Marx-Allee 115, 10243, Berlin	13.446716677	52.5171248502	
423	52.51047	13.45365	Private room in condo	Private room	3	2	yes	yes	IShA		x	x	image	window	Warschauer Str. 68, 10243, Berlin	13.4525928521	52.5115084548	
424	52.49151	13.47613	Entire condo	Entire home/apt	48	1	yes	yes	IEIA			x	image	balcony	Alt-Stralau 32F, 10245, Berlin	13.4775252509	52.4927221179	
425	52.51103	13.44785	Entire condo	Entire home/apt	5	1	yes	name & address	IEIA			x	given address		Am Comeniusplatz 5, 10243, Berlin	13.4468523476	52.5120269887	
426	52.51944	13.43467	Entire rental unit	Entire home/apt	5	1	yes	(yes_number)	IEIA			x	image	building front / window / floor plan	Friedrichsberger Str. 12, 10243, Berlin	13.4337692166	52.5204354201	
427	52.51973	13.46341	Entire rental unit	Entire home/apt	5	1	yes	name & address	IEIA			x	given address		Bänschstr. 39, 10247, Berlin	13.4640610166	52.5186419762	
428	52.50649	13.46269	Private room in rental unit	Private room	200	1	yes	yes	IShA			x	image	balcony / window	Döringstr. 7, 10245, Berlin	13.462384295	52.5054504286	roof
429	52.51621	13.471144	Private room in rental unit	Private room	1	1	yes	yes	IShA			x	image	window	Waldeyerstr. 8, 10247, Berlin	13.4718859618	52.5153965744	roof
430	52.50626828059456	13.469685024757444	Private room in rental unit	Private room	54	1	never	yes	IShA							13.469685024757444	52.50626828059456	
431	52.51059	13.45782	Entire rental unit	Entire home/apt	50	1	yes		EIA							13.45782	52.51059	
432	52.51166	13.45113	Entire rental unit	Entire home/apt	50	3	yes	legal entity	IEIA	x	x	x	given address		Grünbergerstr. 30, 10245, Berlin	13.4517073814	52.5124517224	
433	52.516075134277344	13.468347694396973	Private room in condo	Private room	351	1	yes	yes	IShA							13.46834769439697352	51.6075134277344	
434	52.51026	13.46541	Entire condo	Entire home/apt	54	1	yes	yes	IEIA			x	image	window	Finowstr. 17, 10247, Berlin	13.466448101	52.5107580301	
435	52.52429	13.45161	Entire rental unit	Entire home/apt	57	2	yes		EIA		x	x				13.45161	52.52429	
436	52.50826	13.44691	Entire rental unit	Entire home/apt	59	1	yes	yes	IEIA							13.44691	52.50826	
437	52.514034	13.45554	Entire loft	Entire home/apt	60	3	yes	(yes_number)	IEhA(90-183)	x	x	x	image	window / outdoor area	Boxhagener Str. 117, 10245, Berlin	13.45533998	52.5138001613	roof
438	52.514132	13.453993	Private room in vacation home	Private room	2	1	yes	yes	IEIA			x	image	balcony / window / floor plan	Boxhagener Str. 123, 10245, Berlin	13.4539419166	52.5141855771	
439	52.50521	13.46603	Entire loft	Entire home/apt	62	1	yes	legal entity	IEIA			x	given address		Lenbachstr. 9, 10245, Berlin	13.4660822618	52.5052055776	
440	52.51723	13.43797	Entire loft	Entire home/apt	62	1	yes	yes	IEIA			x	image	building front / window	Koppenstr. 28A, 10243, Berlin	13.4369847685	52.5162707215	
441	52.52417	13.45241	Entire rental unit	Entire home/apt	62	1	yes		EIA							13.45241	52.52417	
442	52.51764	13.46043	Entire rental unit	Entire home/apt	63	1	yes	yes	IEIA			x	image	window	Proskauer Str. 11, 10247, Berlin	13.461919116	52.5173541826	
443	52.5048612	13.469574	Private room in condo	Private room	20	1	yes	yes	IShA							13.469574	52.5048612	
444	52.5007	13.46294	Entire condo	Entire home/apt	63	1	never	yes	IEIA							13.46294	52.5007	
445	52.50084	13.45622	Entire rental unit	Entire home/apt	67	3	yes	legal entity	IEIA	x	x	x	given address		Modersohmstr. 77, 10245, Berlin	13.4561856017	52.5005639556	
446	52.501621	13.452043	Entire rental unit	Entire home/apt	68	1	yes	yes	IEIA							13.452043	52.501621	
447	52.52028	13.46075	Entire rental unit	Entire home/apt	7	1	yes	yes	IEIA			x	image	building front / window	Zellestr. 6, 10247, Berlin	13.4587933946	52.5183881369	
448	52.499	13.46164	Entire rental unit	Entire home/apt	7	1	yes	name & address	IEIA			x	given address		Corinthstr. 43, 10245, Berlin	13.4625799249	52.4998190001	
449	52.52076744000344	13.43534637414631	Private room in rental unit	Private room	65	1	yes	name & address	IShA			x	given address		Friedrichsbergerstr. 6, 10243, Berlin	13.4345241843	52.5210874852	
450	52.52107	13.45483	Entire rental unit	Entire home/apt	7	1	yes	(yes_number)	IEIA			x	image	balcony	Mühsamstr. 69, 10249, Berlin	13.45350964	52.521374667	
451	52.52206	13.4516	Entire rental unit	Entire home/apt	7	1	yes		EIA							13.4516	52.52206	
452	52.50899	13.45636	Entire rental unit	Entire home/apt	70	1	yes	yes	IEIA			x	image	building front / balcony	Simon-Dach-Str. 14, 10245, Berlin	13.4560523172	52.5101807696	
453	52.49514	13.468947	Entire rental unit	Entire home/apt	70	1	yes	yes	IEIA			x	image	window / outdoor area	Alt-Stralau 58 A, 10245, Berlin	13.4689292612	52.495125252	
454	52.50893	13.45737	Entire condo	Entire home/apt	71	1	yes	yes	IEIA			x	image	balcony / window	Wühlschstr. 32, 10245, Berlin	13.4571467744	52.5100805817	roof
455	52.5208	13.45327	Entire rental unit	Entire home/apt	71	1	yes	yes	IEIA			x	image	balcony / outdoor area	Matternstr. 15, 10249, Berlin	13.4528262764	52.5219586876	
456	52.52333901386731	13.453991971546031	Private room in rental unit	Private room	365	1	no		ShA	x						13.453991971546031	52.52333901386731	

457	52.51791	13.47161	Entire rental unit	Entire homelapt	71	1	yes	yes	IEIA			x	image	window / outdoor area	Pettenkoferstr. 10A, 10247, Berlin	13.4725693594	52.5171849573	
458	52.51252909999999	13.4577807	Entire serviced apartment	Entire homelapt	68	18	yes	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	
459	52.4968801	13.4686274	Private room in condo	Private room	364	1	no		SHA			x	image	balcony / window	Glasbläserallee 16, 10245, Berlin	13.4686399028	52.4969039308	
460	52.51296	13.45512	Entire condo	Entire homelapt	72	1	yes	yes	IEIA							13.45512	52.51296	
461	52.52305	13.43251	Entire rental unit	Entire homelapt	72	2	yes	fake	EIA	x	x					13.43251	52.52305	
462	52.50735	13.4544	Entire rental unit	Entire homelapt	73	1	no		EIA							13.4544	52.50735	
463	52.51359645789967	13.434422409475069	Entire rental unit	Entire homelapt	76	2	never	name & address	IEIA	x	x	x	given address	B	Lange Str. 74, 10243, Berlin	13.4323233907	52.5127001356	
464	52.5067	13.47036	Entire condo	Entire homelapt	78	1	yes	yes	IEIA			x	image	window	Neue Bahnhofstr. 21, 10245, Berlin	13.4710979764	52.5073457216	
465	52.51251	13.46292	Entire home	Entire homelapt	79	1	yes	name & address	IEIA							13.46292	52.51251	
466	52.51592	13.46517	Entire rental unit	Entire homelapt	79	1	yes	yes	IEIA			x	image	building front / balcony / window	Frankfurter Allee 55, 10247, Berlin	13.4654660198	52.5148644387	roof
467	52.515549	13.452571	Entire rental unit	Entire homelapt	8	1	yes	yes	IEIA			x	image	building front / window	Karl-Marx-Allee 140, 10243, Berlin	13.45222379745	52.5156779665	
468	52.51358	13.46599	Entire rental unit	Entire homelapt	8	1	yes	yes	IEIA			x	image	window / outdoor area	Kinzigtstr. 23, 10247, Berlin	13.4656033293	52.5125343606	
469	52.51308	13.45185	Entire loft	Entire homelapt	80	3	yes		EIA	x	x	x				13.45185	52.51308	
470	52.51687	13.43297	Entire rental unit	Entire homelapt	80	1	no		EIA							13.43297	52.51687	
471	52.52302	13.45452	Entire rental unit	Entire homelapt	82	1	yes	yes	IEIA							13.45452	52.52302	
472	52.51723572179869	13.451750515252577	Private room in condo	Private room	53	1	never	name & address	ISIA			x	given address		Weidenweg 39, 10248, Berlin	13.4506676392	52.5181645561	
473	52.50959	13.45667	Entire rental unit	Entire homelapt	83	2	yes	yes	IEIA	x	x	x	image	window	Kopernikusstr. 18, 10245, Berlin	13.4559246203	52.5100837024	
474	52.520806886126834	13.448096409843702	Private room in bed and breakfast	Private room	22	1	yes	yes	IEIA		x					13.44809640984370252.520806886126834		
475	52.50727	13.46818	Entire loft	Entire homelapt	84	1	yes	(yes_entity)	IEIA		x	x	given address		Boxhagener Str. 53, 10245, Berlin	13.4670485886	52.5078147954	
476	52.52164	13.45441	Entire rental unit	Entire homelapt	88	1	no	(yes_number)	IEIA			x	image	balcony	Mühsamstr. 67, 10249, Berlin	13.4534755001	52.5210400903	
477	52.5152	13.47583	Entire condo	Entire homelapt	88	2	yes	name & address	IEIA	x	x	x	given address		Deutschnmeisterstr. 23, 10367, Berlin	13.4764634531	52.5159010617	
478	52.51969	13.46717	Entire rental unit	Entire homelapt	9	2	no	yes	IEIA	x	x	x	image	building front / window	Bänschestr. 59, 10247, Berlin	13.4669224379	52.5182281640	M
479	52.52023	13.44703	Entire loft	Entire homelapt	93	1	yes	yes	IEIA(90-183)							13.44703	52.52023	
480	52.51014891337617	13.449378920099049	Private room in rental unit	Private room	4	1	yes	name & address	ISIA				given address (missing)			13.449378920099049 52.51014891337617		
481	52.5050299	13.4406259	Entire rental unit	Entire homelapt	94	68	never	legal entity	IEIA(90-183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
482	52.51509	13.43536	Entire condo	Entire homelapt	95	2	never	yes	IEIA(90-183)	x	x	x	image	building front	Koppenstr. 25, 10243, Berlin	13.4363780195	52.5158870012	L
483	52.50557635957621	13.439209693640123	Entire serviced apartment	Entire homelapt	170	5	yes	legal entity	IEIA(90-183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
484	52.51252909999999	13.4577807	Entire serviced apartment	Entire homelapt	28	18	never	legal entity	IEIA	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	
485	52.51252909999999	13.4577807	Entire serviced apartment	Entire homelapt	287	18	yes	legal entity	IEIA(183)	x	x	x	given address		Simon-Dach-Str. 46, 10245, Berlin	13.4578344187	52.512527532	
486	52.51951	13.4518	Entire rental unit	Entire homelapt	97	12	no		EIA(90-183)	3 months	x	x						
487	52.52006	13.44441	Entire loft	Entire homelapt	98	1	no		EIA(90-183)			x	image	balcony / window	Auerstr. 7, 10249, Berlin	13.4434230902	52.5187742916	roof
488	52.511182006462185	13.462200236638948	Entire vacation home	Entire homelapt	341	19	never	yes	IEIA(183)	x	x	x	image	balcony	Boxhagener Str. 35, 10245, Berlin	13.4607316917	52.512096323	roof
489	52.50603273787648	13.44044098821168	Entire serviced apartment	Entire homelapt	353	5	yes	legal entity	IEIA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
490	52.50992	13.46474	Entire rental unit	Entire homelapt	98	1	yes	yes	IEIA(90-183)							13.46474	52.50992	
491	52.51007281711268	13.447256959906091	Private room in rental unit	Private room	288	1	yes	name & address	ISIA			x	given address		Marchlewskistr. 93, 10243, Berlin	13.4483108798	52.5096152815	
492	52.50599734428106	13.439056139522602	Entire serviced apartment	Entire homelapt	164	5	never	legal entity	IEIA(90-183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
493	52.504802787623625	13.441706550261245	Entire serviced apartment	Entire homelapt	166	5	yes	legal entity	IEIA(90-183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
494	52.50579519636992	13.44116995615015	Entire serviced apartment	Entire homelapt	349	5	never	legal entity	IEIA(183)	x	x	x	given address		Mühlenstr. 20, 10243, Berlin	13.4404811138	52.505151761	
495	52.500454288153456	13.457158199006631	Private room in rental unit	Private room	340	1	never	yes	ISIA			x	image	window	Modersohnstr. 65, 10245, Berlin	13.4564858035	52.5015261457	