

Module: POL42540 - Autumn 2024
Project: Data Story
Replication Files: [Google Drive](#) + Brightspace Submission
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Airbnb in Dublin: Friend or foe?

While Ireland faces a housing and homelessness crisis, Airbnb continues to serve satisfied visitors and investors in Dublin.

Introduction to Airbnb and the Dublin City datasets

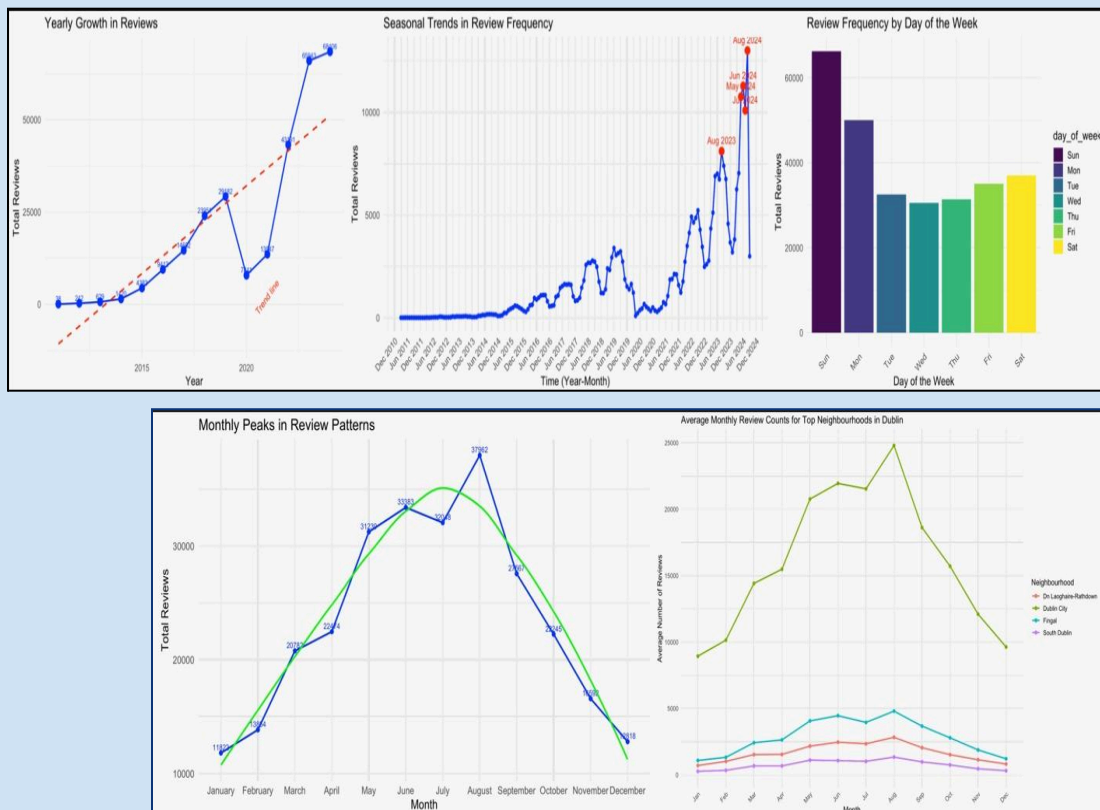
Millions of people have [used Airbnb since 2008](#) as guests or hosts. The [Inside Airbnb](#) project allows anyone to visualize and download Airbnb data from a selected city, including information about hosts, listings, and reviews. Today, we will take a look at basic Airbnb operations in Dublin, Ireland, and examine investment opportunities, demand trends, guest satisfaction, and host portfolios. We will also discuss whether Airbnb may be one contributing factor in [Dublin's ongoing housing crisis](#).

Dive in: Understanding the Dublin Airbnb datasets

- Anyone can explore Airbnb data via [Inside Airbnb](#). For this project, we downloaded [data for Dublin City, Ireland](#)
- The “listings” dataset contains information about Airbnb listings and hosts, including geolocation, room type, price, and number of days booked versus available in the year
- The “reviews” dataset contains reviews of Airbnb listings, including review date, reviewer name, and the full text of their review

When does Airbnb demand spike in Dublin?

Ireland is a well-known tourist destination, and **Airbnb demand spikes in Dublin follow clear seasonal and weekly patterns.** Demand peaks during the summer months (June to August), driven by international tourism, school breaks, and favorable weather; in December, due to Christmas vacations; and during graduation seasons, as families travel to ceremonies. On a weekly level, there is higher review activity on Fridays and Saturdays, reflecting short-term weekend trips. Neighborhood trends may include the impacts of major attractions, transportation hubs, cultural events, business travel, and even tourism promotions supported by the Irish government. The insights from the below visualizations present steady year-on-year growth in reviews, seasonal peaking of demand, and preferences for weekend travel, thus driving strategic tourism and marketing planning.



The above graphs provide insights into Airbnb demand patterns in Dublin:

1. **Yearly Review Growth Patterns:** Illustrates steady increase in review counts over time.
2. **Seasonal Trends in Review Frequency:** Shows demand spikes during summer months (June-August) and December holiday period.

3. **Weekly Patterns in Review Activity:** Peaks in review activity on Fridays and Saturdays, highlighting short-term weekend travel preferences.
4. **Monthly Review Peak:** Identifies months with highest review activity, particularly July, August, and December.
5. **Monthly Average Review Counts by Neighborhood:** Highlights variations in review trends across Dublin's key neighborhoods, with higher activity near attractions and transport hubs.

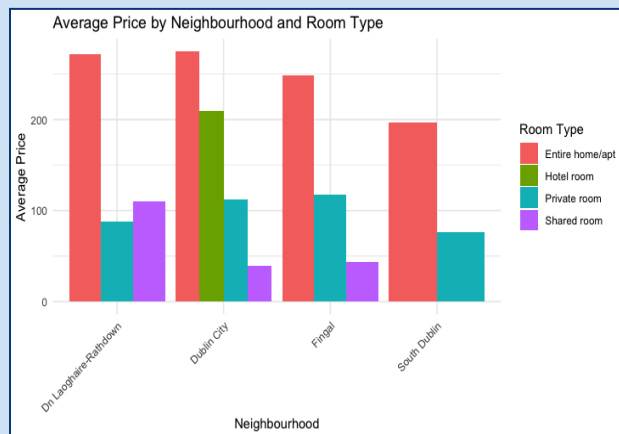
Which Dublin locations are attractive for investment?

Dublin's Airbnb market is a cornerstone of the city's tourism and hospitality sectors, offering diverse pricing structures and substantial investment opportunities. **Dublin City has the highest average nightly rate at €211.97, driven by its proximity to attractions and vibrant culture. With a 75% median occupancy rate, it appeals to high-end investments targeting luxury-seeking tourists.** South Dublin, with a more affordable average rate of €125.77, attracts budget-friendly option travelers and those interested in longer stays. This area is ideal for mid-range investors, with competitive occupancy rates drawing families and solo visitors.

Price distribution across neighborhoods shows considerable variability. Dublin City and Dún Laoghaire-Rathdown feature the widest price ranges, reflecting a mix of high-end properties catering to affluent travelers willing to pay premium rates. South Dublin showcases more affordable options, highlighting the diversity of Dublin's Airbnb market and its ability to meet a wide array of guest preferences.



Room type trends shape investment strategies. Entire homes dominate listings in high-demand areas like Dublin City, aligning with preferences for privacy among families and groups. South Dublin has more private rooms, suiting solo travelers or budget-conscious guests. Investors can leverage these trends to tailor offerings to local demand.

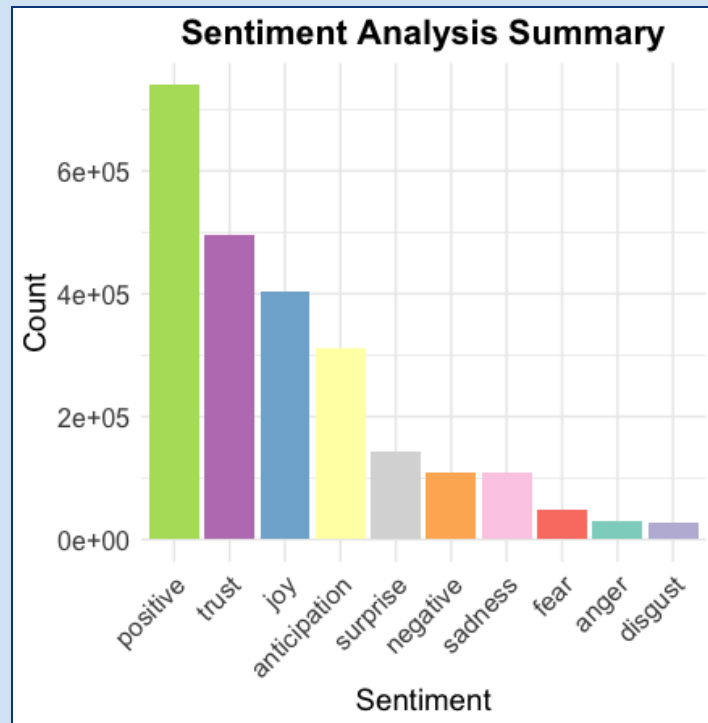


Dublin City not only commands the highest prices but also offers the greatest annual revenue potential at €51,152 per listing, driven by strong demand. Dún Laoghaire-Rathdown and Fingal balance affordability with solid occupancy rates, presenting attractive opportunities for mid-range investments.

Dublin's Airbnb market remains a thriving hub for investors and entrepreneurs, offering diverse opportunities across neighborhoods. With the ability to tailor listings to meet varied demand, complemented by guest-focused business ventures, investors and entrepreneurs alike can capitalize on this expanding market. Staying informed on regulations and trends will be crucial to sustaining profitability and growth in this dynamic sector.

Are Airbnb guests satisfied with their stays in Dublin?

Airbnb users rate their stays using a one-to-five star system, and can also leave detailed comments. Positive reviews help guests to find satisfactory accommodations, and may contribute to tourism growth. According to sentiment analysis of the text of Airbnb listing reviews in Dublin, **over 60% of guests left positive reviews about their accommodations.** Guests expressed satisfaction when they experienced cleanliness, safety, clear communication, welcoming hosts with positive attitudes towards their guests, and accessible locations. Guests especially appreciated staying near famous landmarks, restaurants, and other places of interest. The majority of Airbnb guests in Dublin were satisfied with their stays, as demonstrated by sentiment analysis of their reviews:



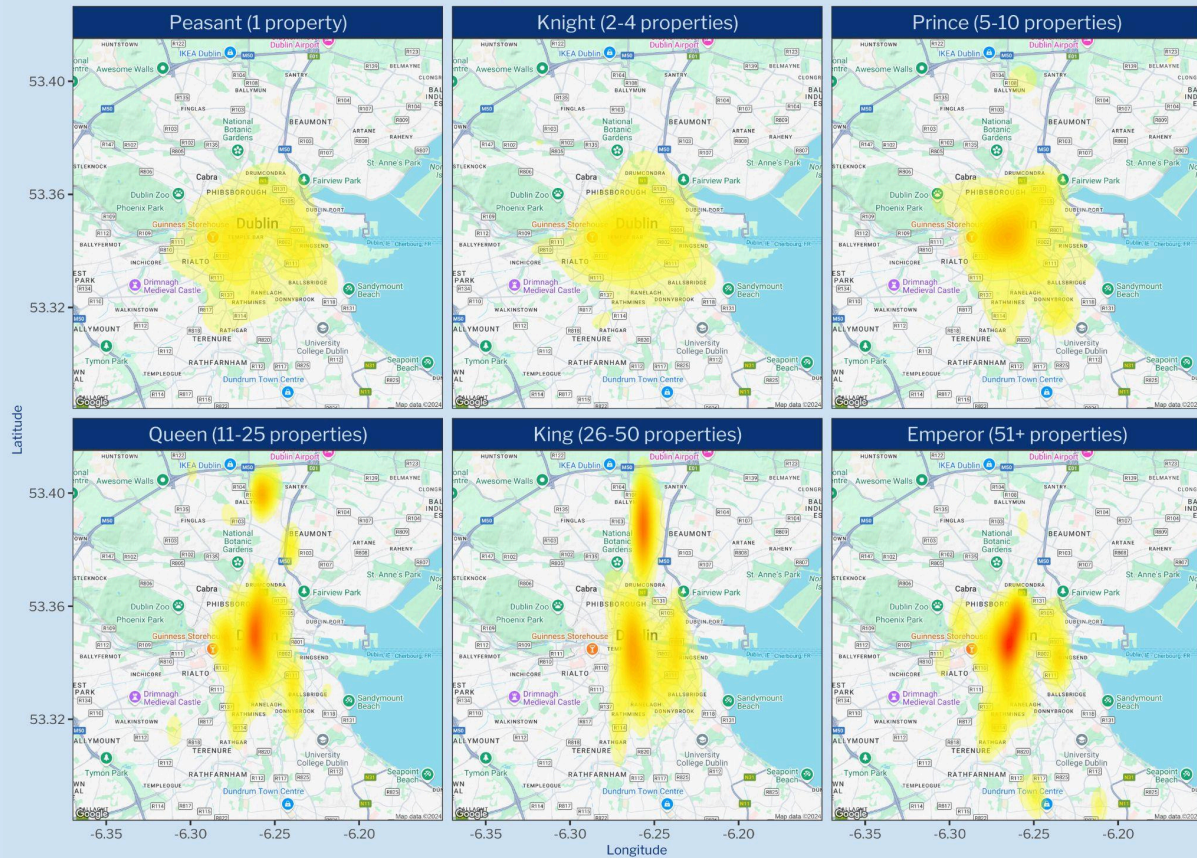
Are Dublin's Airbnb hosts big investors or local homeowners?

Airbnb originally pitched itself as a win for everyone: it would connect tourists with locals, reduce lodging costs for tourists, provide additional income for locals, stimulate tourism economies for cities, and provide profits for investors. But are Airbnb hosts still local homeowners with spare rooms, or has it become a big business for investors—potentially at the expense of local housing markets?

According to data from Inside Airbnb, Dublin offers over 6,000 listings on Airbnb. Over 50% of listings are managed by hosts with more than one listing. And over 20% of around 500 hosts in Dublin manage more than one listing. The below density maps illustrate that as listings portfolios grow, hosts prefer to list in the city center (close to tourist attractions, corporate offices, and transit hubs):

Dublin, Ireland: Airbnb Listings

Density Maps based on Host's Total Number of Listings



Although this trend is interesting, Inside Airbnb datasets offer a limited view of hosts and listings. To gain richer insights into host profiles, researchers could examine Airbnb nightly revenues, whether hosts are owners or renters, non-Airbnb incomes, property values, mortgages, tax bills, voter registrations, demographics, and more. Without this kind of data readily available, **we can only speculate that around 80% of Airbnb hosts in Dublin actually live in their listings, while the remaining 20% are profiting from the management of multiple commercialized short-term rentals, trending toward the city center.** Even then, it is highly plausible that single-listing hosts are listing second properties rather than their own residences.

Policymakers facing rising housing costs in cities around the world cannot solely blame Airbnb, and should consider that many complex factors contribute to housing costs. Dublin policymakers might consider local political economy factors such as the neoliberalization of social housing policy, and the Irish government's catering to international tourism and to global capital (particularly through low tax rates for private equity firms and high technology companies). Cities like Dublin may even be neglecting rehabilitation of thousands of city- or state-owned abandoned residential buildings. Many cities like Dublin also see housing costs

rise and fall as a result of global phenomena, including the 2008 financial crisis and the COVID-19 pandemic.

With this complexity in mind, Dublin's policymakers should consider enacting policies that avoid surrendering city center real estate to investors. Globally, some legislators are calling for legislation based at least partly on their city's experiences with Airbnb. For example, the Left in the European Parliament has long called for strong short-term housing regulations, and Ireland is now ready to implement crackdowns.

Conclusion

In the renowned tourist city of Dublin, Inside Airbnb data reveals that 60% of guests are satisfied with their accommodations, 20% of hosts are managing multiple listings, investment opportunities vary by neighborhood, and demand spikes predictably and seasonally. At the same time, housing costs and homelessness are rising, and Ireland will soon implement regulations on short-term rentals. Researchers and policymakers should ensure any new regulatory frameworks include a strong monitoring component to better understand the impacts of housing policy changes on locals, visitors, and investors alike.

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Group contributions

This data story was developed by four group members, assigned to work together by the module coordinator. Contributions were as follows:

- **Allwyn Reon D'Mello**: Contributed data story section “Are Airbnb guests satisfied in Dublin?” According to Reon this included: Contributed to the sentiment analysis of Airbnb reviews to effectively quantify and categorize user feedback, providing valuable insights into guest experiences. Designed and implemented an R script that employed advanced sentiment analysis techniques to process and analyze large volumes of textual data. Created a visually engaging graph to showcase the results, emphasizing satisfaction levels and key sentiment trends like positivity and trust. Collaborated with team members to integrate this analysis with other datasets and findings, ensuring a comprehensive understanding of guest feedback and aligning the results with broader project goals. This effort was crucial in identifying strengths and areas for improvement, ultimately supporting data-driven decision-making to enhance Airbnb guest satisfaction.
- **Vaishnavi Kandikonda**: Submitted section “When does Airbnb demand spike in Dublin?” According to Vaishnavi, this included: Contributed to data cleaning, preprocessing, and statistical analysis of Airbnb reviews. Developed R scripts for visualizing seasonal trends, yearly growth, and neighborhood popularity. Created and annotated graphs highlighting review trends by day of the week and monthly peaks. Collaborated with team members to interpret results and integrate findings into the final report. Supported debugging and ensured the accuracy of the dataset transformations.

- **Lindsey Shaughnessy:** Coordinated weekly team meetings, notes, and Slack messages. Sent questions to and met with module TA. Shared potential footfall dataset with team (not selected). Drafted report and assigned sections to individual team members. Used ggplot2, ggmap, and Google's API to generate density maps and format visualizations. Wrote the data story sections: introduction + "Are Dublin's Airbnb hosts big investors or local homeowners?" + conclusion. Gathered relevant research papers and formatted reference list. Submitted report package for team via Brightspace.
- **Sanchit Shrinivas Deshpande:** Contributed data story section: "Which Dublin locations are attractive for investment?" According to Sanchit, this included: Suggested airbnb dataset with the group, which was used for the project. Wrote R script for analysing the property type, prices and locations for suggesting the investment opportunities which included cleaning the data, stat analysis and generating visualizations. Worked closely with team members to integrate the analysis of business and investment opportunities with other findings, supported with references contributing to a comprehensive understanding of Dublin's Airbnb market and aligning the results with the overall project objectives.