

MN50754-Analytics in Practice

Competing with Airbnb

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Executive Summary

In retrospect, middle class retired couples discover a wide variety of accommodation catered to their requirements when exploring Amsterdam. Budget-conscious people can strike a compromise between cost and privacy by choosing private rooms, but whole houses and apartments can provide more space and facilities, especially in areas like Westerpark and Watergraafsmeer. Retirees should consider safety and convenience as well as communities with a large number of listings within their budget in order to get the most out of their experience. For hosts, it's critical to keep costs reasonable, emphasise the special qualities of various lodging options, and guarantee a flawless visitor experience. All ages call Amsterdam home, but older residents, particularly middle-class retirees, are drawn to the city because of its laid-back atmosphere and vibrant cultural scene. Location affects income levels; certain neighbourhoods are more middle-class, while others are more affluent. Here, people of many different kinds reside, contributing to the city's variety. People from many walks of life may be found here, which makes it a lively and welcoming destination. Social media activity offers real-time feedback and user-generated information that influences passengers' views and decision-making processes, giving vital insights into Amsterdam's tourism scene. Monitoring trending hashtags on social media provides insightful information about what tourists in Amsterdam are now interested in and prefer. Travellers may discover hidden treasures and get real perspectives on their experiences through content posted by users such as photographs, videos, and reviews. While influencer interaction shapes views and encourages visits to hotels and activities, online review sites offer suggestions. Businesses may modify their services for middle-class retired couples and enhance their city experience by utilising social media data. Amsterdam maintains its distinction as a location for engaging and reasonably priced experiences by matching housing alternatives with the customer's tastes and financial constraints.

INTRODUCTION

Amsterdam with its ageless beauty, invites millions of visitors every year to immerse themselves in a tapestry of cultural richness and historic beauty with its everlasting fascination. For middle-class travellers, it's a destination of accessibility and affordability, promising unforgettable experiences without breaking the bank.

Amsterdam's varied attractions, which bring in 10 to 20 million tourists a year and generate between €6 to €7 billion for the local economy, are what make the city so appealing. Every location provides an insight into Amsterdam's rich cultural past, from recognizable museums to moving historical places. Amsterdam has a diverse range of cultural attractions to explore, including the well-known Rijksmuseum, which houses paintings by Rembrandt and Vermeer, and the bustling Jordaan neighbourhood, which is home to several artisan shops and cafés. One moving representation of the city's resiliency and history is the well-known Anne Frank House. With Airbnb reshaping the lodging landscape, travellers now have access to authentic and affordable options that drive competition and innovation in the market.

Design Thinking and Empathy Mapping for Middle-Class Retired Couples:

- **What They Say:** Middle-class retired couples express a desire for comfortable and affordable accommodation options that offer a sense of security and tranquillity.
- **What They Do:** They tend to search for listings with amenities such as easy accessibility to attractions, proximity to public transportation, and well-maintained properties with positive reviews.
- **What They Think and Feel:** They value experiences that allow them to relax and create lasting memories. They look for accommodations that welcome back to simpler times and provide chances for relaxation and exploration.
- **Pain Points:** Concerns about budget constraints may lead them to prioritise cost-effective accommodation options. They may also worry about the reliability and safety of the chosen accommodation.
- **Gains:** Retired couples appreciate personalised experiences and thoughtful amenities that cater to their needs and preferences. Positive reviews and recommendations from peers play a significant role in influencing their accommodation choices.

Considering the unique needs of middle-class retired couples in Amsterdam, it's essential to prioritise affordability, comfort, and accessibility in housing solutions. Tailored options, like short-term rentals and age-friendly communities, cater to their needs, fostering a sense of belonging and connection. In addition to improving the experience, transparent pricing and user-friendly technologies enable retirees to make well-informed decisions. Resilient and inclusive housing that takes into account the financial limits and preferences of retirees is made possible via cooperative efforts and sustainable practices. Within a \$150 budget, Amsterdam provides its middle-class senior citizens with a warm and rewarding retirement experience by giving priority to these factors.

Analysis of Rental Property Market for Middle-Class Retired Couples

Data Preprocessing: The dataset has been preprocessed which contains 8739 entries detailing rental properties, covering essentials like price, room types, and reviews. No duplicates were found, ensuring data reliability. However, several crucial columns, including property descriptions and review scores, have missing values, requiring attention for accurate analysis and informed decision-making. To deal with missing price data, we carefully managed the "price" column to ensure data accuracy. By using suitable imputation methods, missing value in the "price" column is rectified, boosting the dataset's reliability for further analysis.

Bar Chart of Missing Values: The graph provides important information on the completeness of the data. The considerable missing data for variables like "bathrooms," "bedrooms," "calendar_updated," and "description" points to possible problems with data gathering. "Reviews_per_month" and "neighborhood_group_cleansed" both have moderately missing numbers and require correction. The missing percentages for variables connected to

reviews are lower, indicating consistent feedback capture. Analysis quality may be impacted by missing values, which emphasises the need for thorough data collection and possible imputation. Resolving missing data is essential to precise evaluation and assessment.

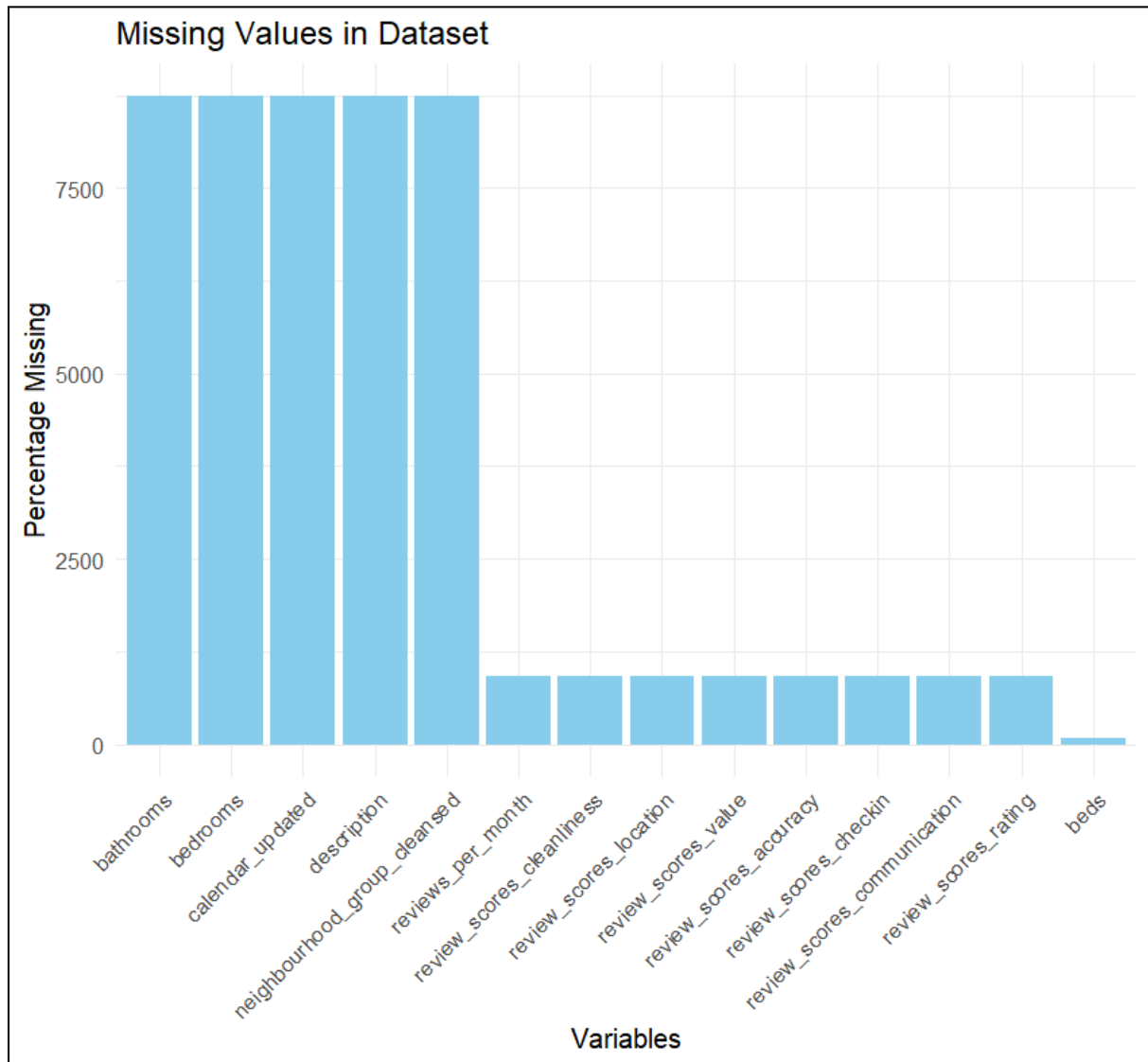


Figure 1: Barplot of missing values

Market Analysis - Price vs. Frequency Trends: In our analysis of the below scatter plot, some interesting points about the market behaviour has been uncovered. The majority of the products are priced in the lower price ranges, suggesting a tendency towards affordability. There is a higher concentration of data points at lower prices, indicating that availability of services more frequently at these price points. As the price increases, the frequency of the services generally decreases, as seen by the fewer and more scattered data points at higher prices.

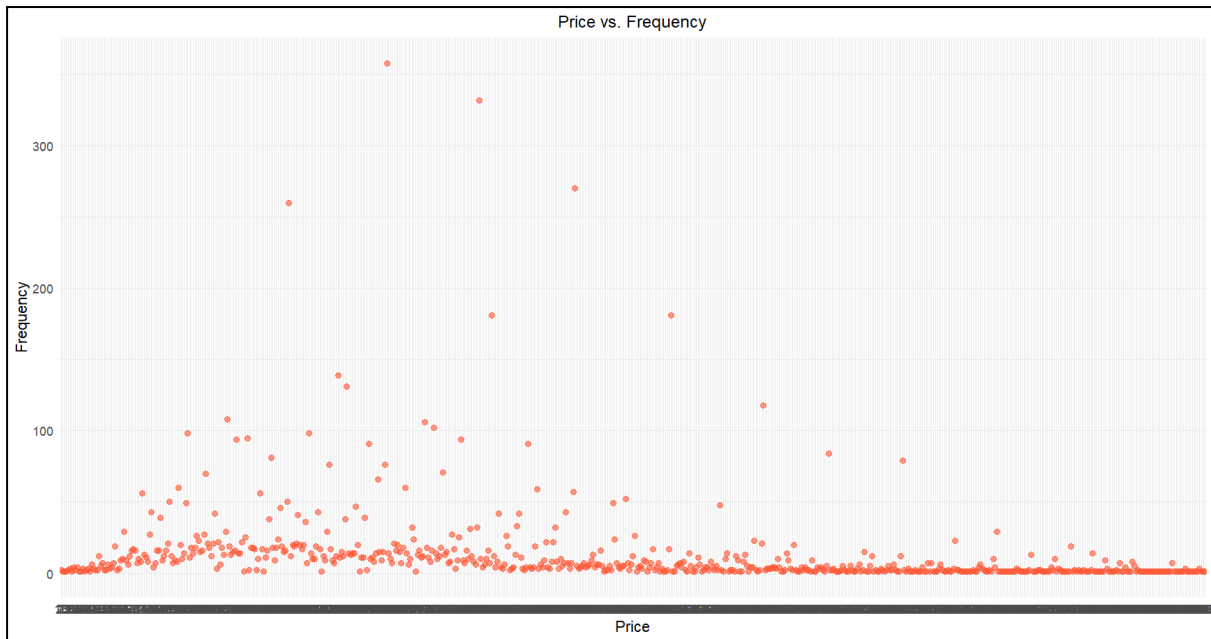


Figure 2: Scatterplot of Price vs Frequency

The dataset was combined in order to do neighbourhood analysis and comprehend pricing patterns in various locations. Finding trends and patterns with the use of this study can help with strategic decision-making about pricing and market positioning.

Neighbourhood Popularity and Accommodation Listings: The chart highlights where accommodations are concentrated. Places with high listing densities are popular and provide a wide variety of residence options. Abundant listings in an area can influence decisions, offering competitive pricing or a quieter atmosphere.

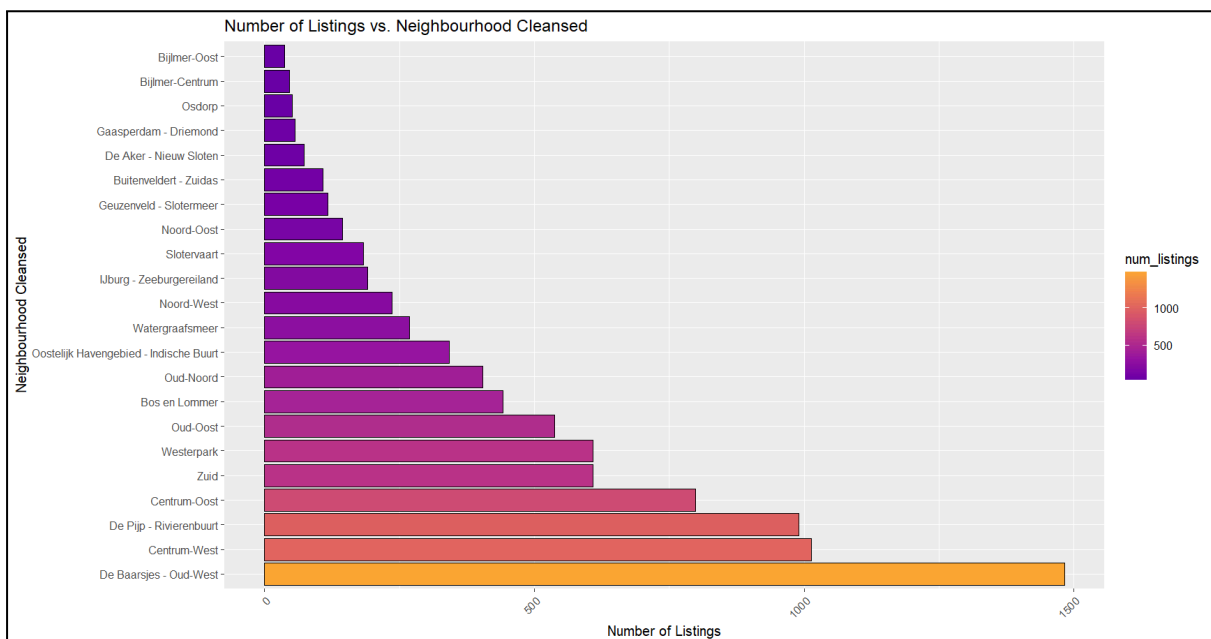


Figure 3: Bar graph for number of listings Vs neighbourhood cleansed

Neighborhood Ratings Overview: The scatter plot reveals most neighbourhoods have a satisfaction score around 4.8. Some areas have slightly lower ratings, possibly due to noise levels or facilities. Consistently high ratings are appealing to middle-class retired couples, who prioritise comfort and safety. These evaluations help retirees choose communities that match their standards of high-quality living.

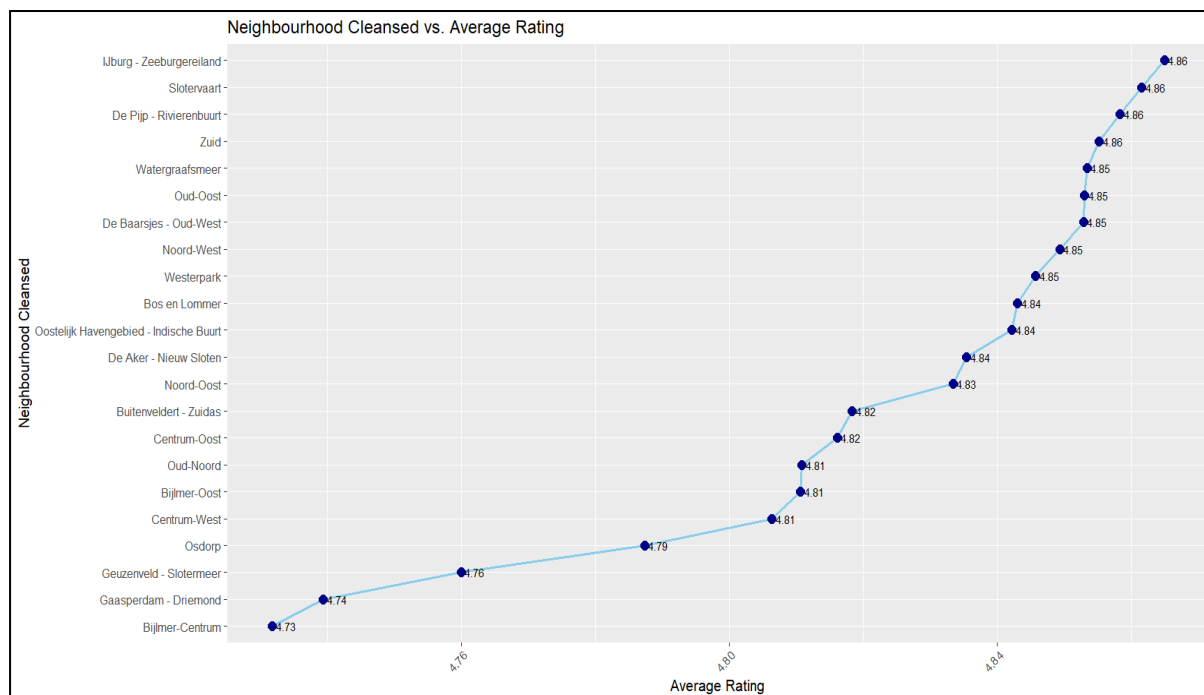


Figure 4: Scatter plot of Neighbourhood Cleansed vs. Average Rating

According to the line graph below, average review scores in Amsterdam neighbourhoods vary closely from 4.84 to 4.88, which is an indication of great satisfaction. Bos en Lommer had a lesser score—roughly 4.84—but it still represents favourable opinions. On the other hand, IJburg - Zeeburgereiland has the highest rating, around 4.88, which denotes very high satisfaction. Other neighbourhoods provide consistent favourable feedback, following closely behind with ratings ranging from 4.85 to 4.86.

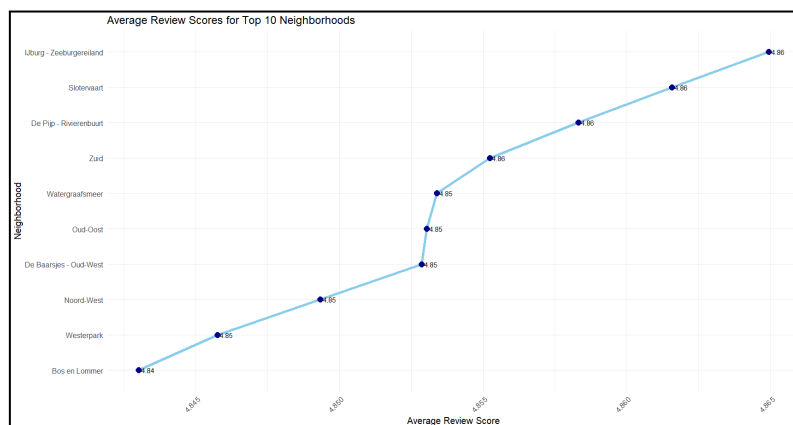


Figure 5: Average Review Scores for top 10 neighbourhoods

Comparative Cost of Living Across Neighbourhoods: The bar chart below focuses on how the average price by neighbourhood could affect the housing decisions of middle-class retired couples. This reveals a wide range of average prices, indicating economic differences between neighbourhoods. The most expensive areas are represented by lighter bars, providing better locations or more amenities. The chosen demography may find neighbourhoods with lower prices more suitable, considering their fixed income. Besides price, factors like safety and community offerings should also be considered for a satisfying living experience. Understanding price differences help choose neighbourhoods that match their budget and lifestyle preferences.

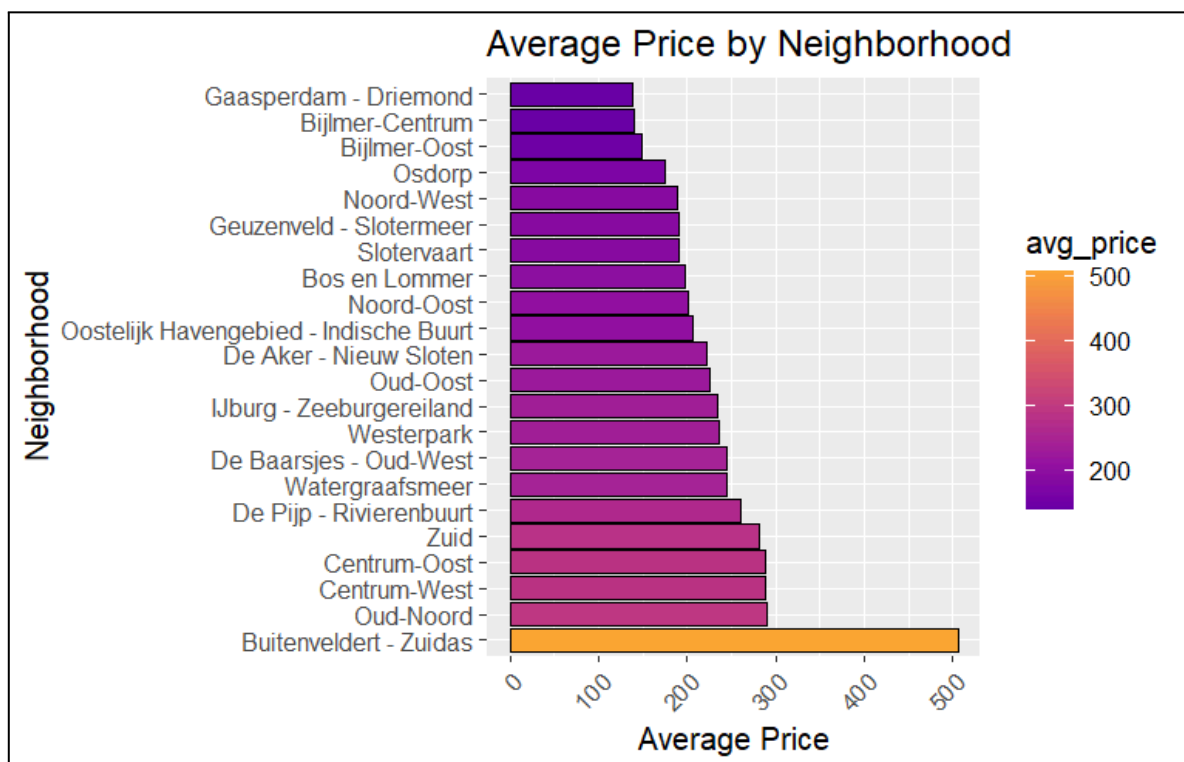


Figure 6: Average Price Vs Neighbourhood

Review Score and Price Analysis for top 10 neighbourhoods: Centrum-West has the highest average price for accommodations among the listed neighbourhoods, followed closely by Centrum-Oost and Oud-Noord. Bos en Lommer has the lowest average price, indicating it may be the most budget-friendly option among the top 10 neighbourhoods. This information can help middle class married couple to choose the places according to their budget.

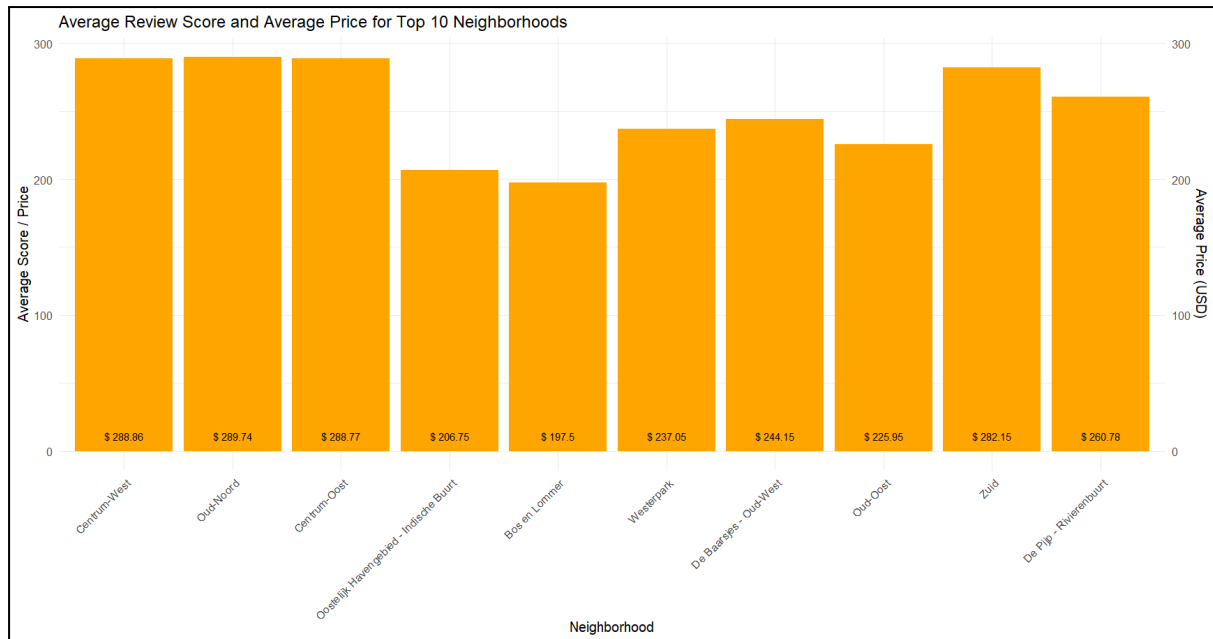


Figure 7: Average Price Vs Neighbourhood

Top Ten Neighbourhoods for price range \$150: From the above graph, De Baarsjes - Oud-West leads with the most listings below \$150, ideal for the chosen demographic. Conversely, Oostelijk Havengebied - Indische Buurt has the fewest options in this range. Other neighbourhoods offer a balanced selection of affordable accommodations. Middle class retired couples can check out these places while keeping in head about the safety and mode of travel.

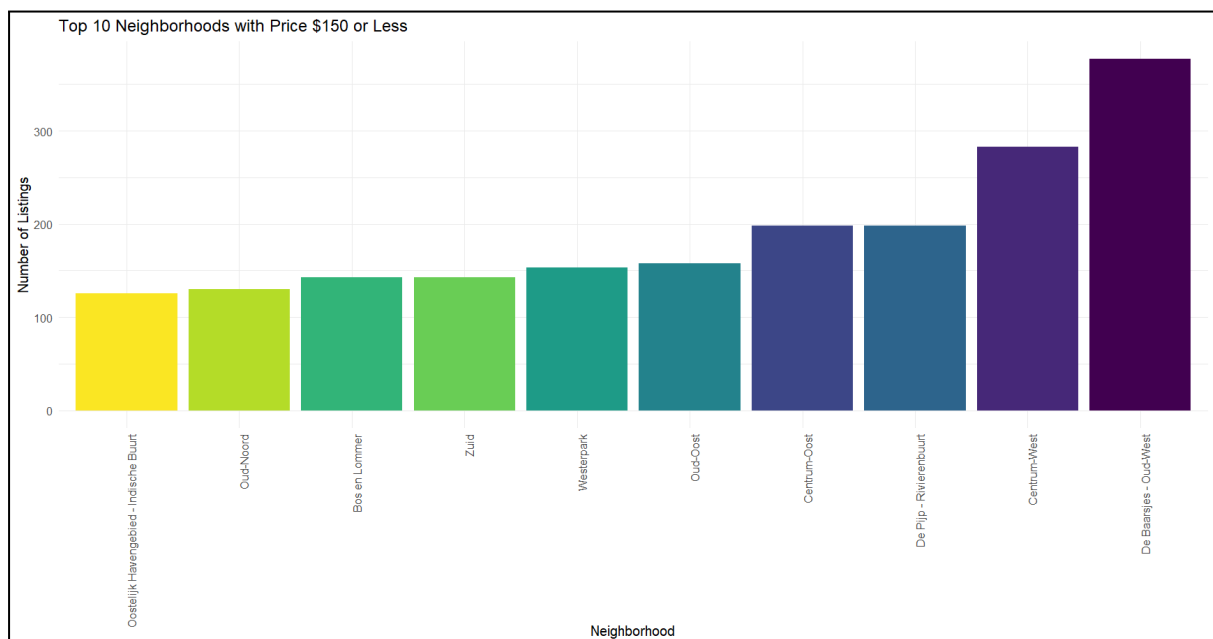


Figure 8: Top ten neighbourhoods with price range of \$150

Average Distance to City Centre for top 10 neighbourhoods: The bar chart illustrates the average proximity of the top 10 neighbourhoods to the city centre. Centrum-Oost is the closest at 1265 metres, while Zuid is the farthest at 5074.64 metres. Other neighbourhoods show varying distances, with some moderately far like Oud-West and Watergraafsmeer, and others closer such as De Pijp - Rivierenbuurt and Centrum-West.

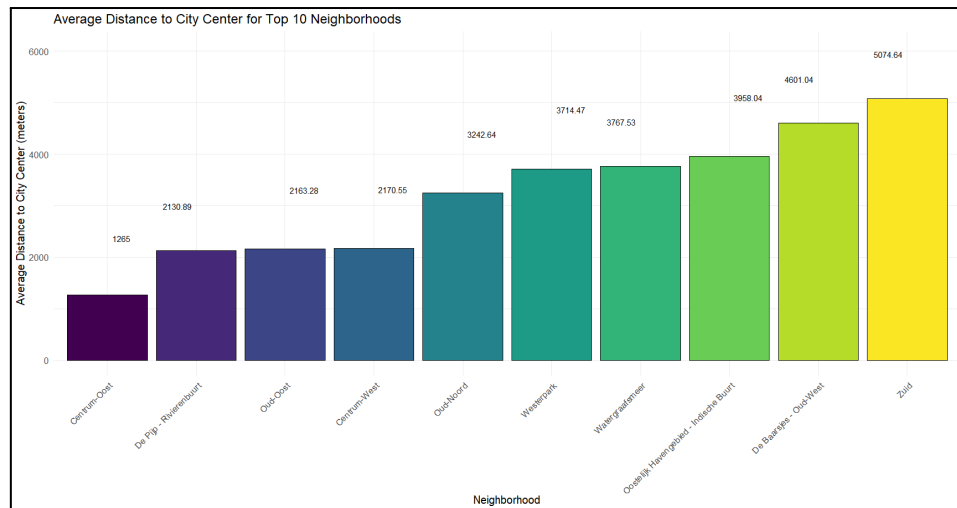


Figure 9: Average Distance to city centre

Neighborhood Stay Duration Preferences: The "Average Minimum Nights by Neighbourhood" chart provides insights into stay duration across different areas. It aids middle-class retired couples in choosing shorter or longer stays, with some neighbourhoods encouraging longer stays. While most areas favour shorter stays, offering flexibility for tourists, those with extended stay requirements may be less appealing to retirees seeking freedom, especially if they plan to travel frequently.

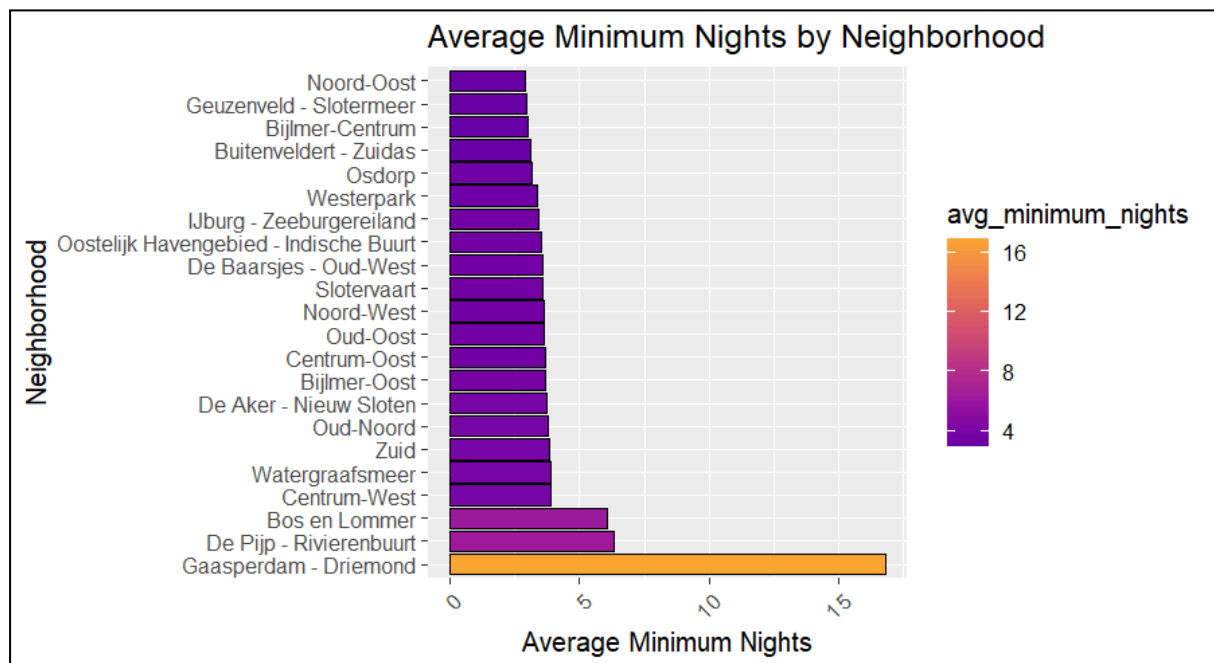


Figure 10: Average Minimum Nights Vs Neighbourhood

Room Type Distribution: The bar chart indicates a clear preference for entire homes and apartments in the market, with private rooms being a secondary option. The research indicates that visitors strongly favour "Entire home/apt" accommodations, showing a desire for luxury and privacy. Listings for "Private rooms" also attract some interest, while demand for "Shared room" and "Hotel room" is low. Private rooms are generally accessible and offer a useful compromise between cost and solitude. But in this price category, hotel rooms and shared lodgings are less popular, which is consistent with retired couples' generally desire for more private living accommodations.

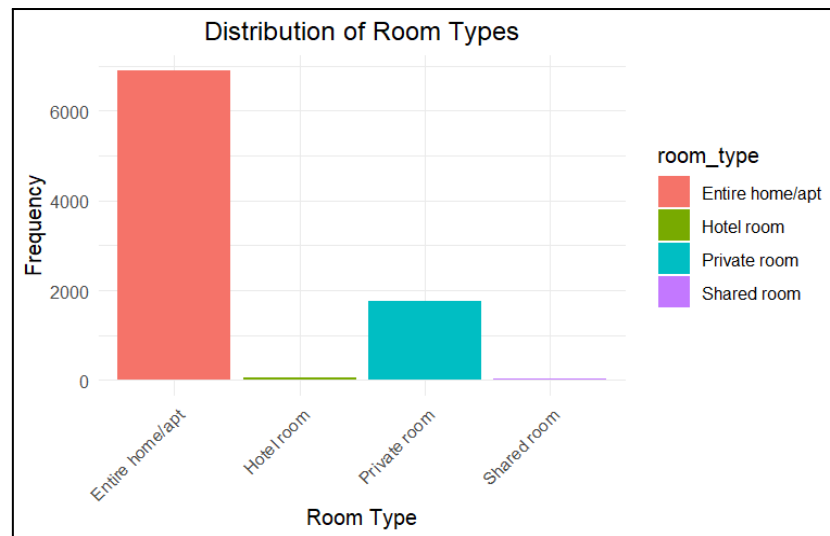


Figure 11: Distribution of room types

Characteristics of Neighbourhood Accommodations: The distribution of room types throughout localities has a big impact on where middle-class retired couples choose to live. Fully furnished flats and houses give privacy and comfort, while budget-friendly private rooms offer economical choices for brief visits without sacrificing privacy. Retired couples' choices are influenced by the limited selection of hotels and shared rooms, which imply a community atmosphere. Housing options that are tailored to individual interests and specific neighbourhoods are important considerations.

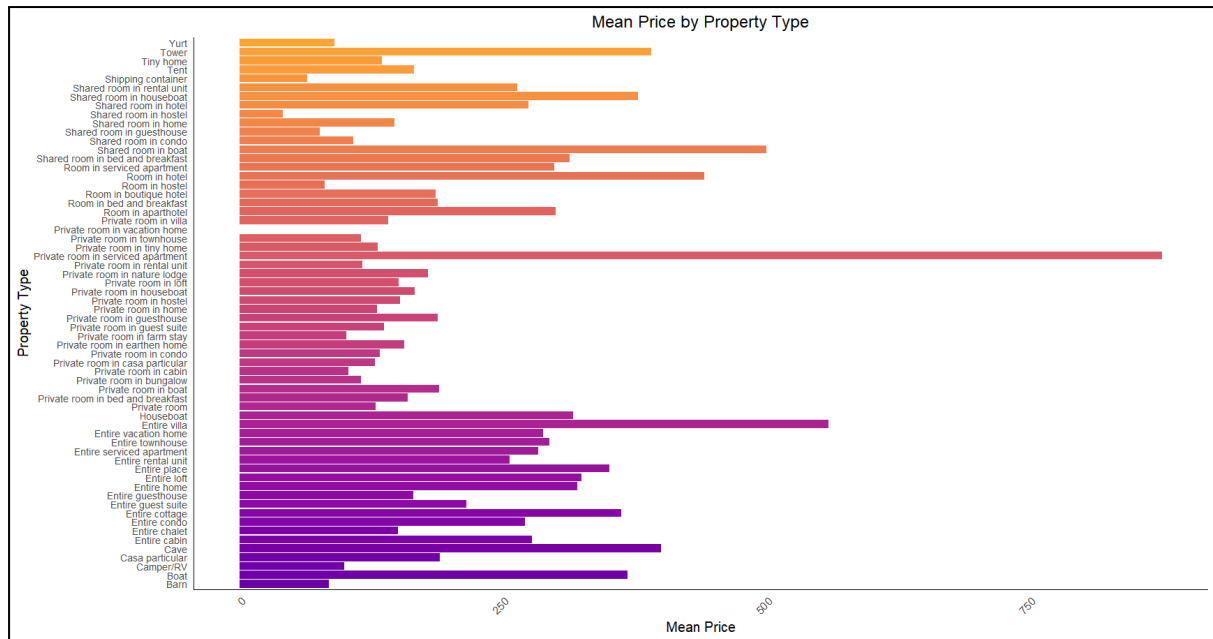


Figure 12: Distribution of Price by Property Type

Housing Affordability and Preferences for Middle-Class Retired Couples:

The chart highlights the cost differences among room types, with entire homes and apartments being the most expensive due to their added space and privacy. Despite their higher cost, middle-class retired couples may choose these choices because they provide a higher standard of living. While shared rooms are the least expensive option, they aren't as comfortable as private ones. Private rooms offer a balance between privacy and expense. Taking advantage of these trends, Airbnb can cater to middle-class retired couples who prioritise affordability and desired amenities when choosing a place to live. They can do this by providing competitive pricing and emphasising the advantages of different types of accommodations.

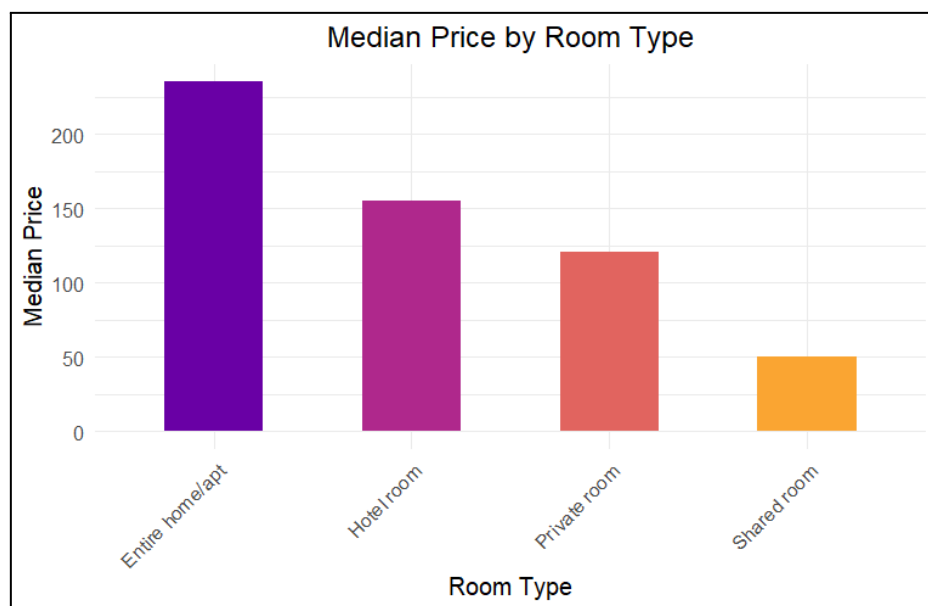


Figure 13: Distribution of Median Price by Room Type

Neighbourhood Affordability and Selection for Middle-Class Retired Couples: The bar chart offers valuable insights into the availability of affordable housing options within a \$150 price range across different neighbourhoods. It's clear that some neighbourhoods stand out with a higher number of listings at this price point, indicating they may have more options for middle-class retired couples on a budget. The colour-coded bars help quickly identify these neighbourhoods, suggesting they could offer a competitive market with varied amenities. For retired couples, this information can guide their housing search effectively, though they should also consider factors beyond price like safety and accessibility.

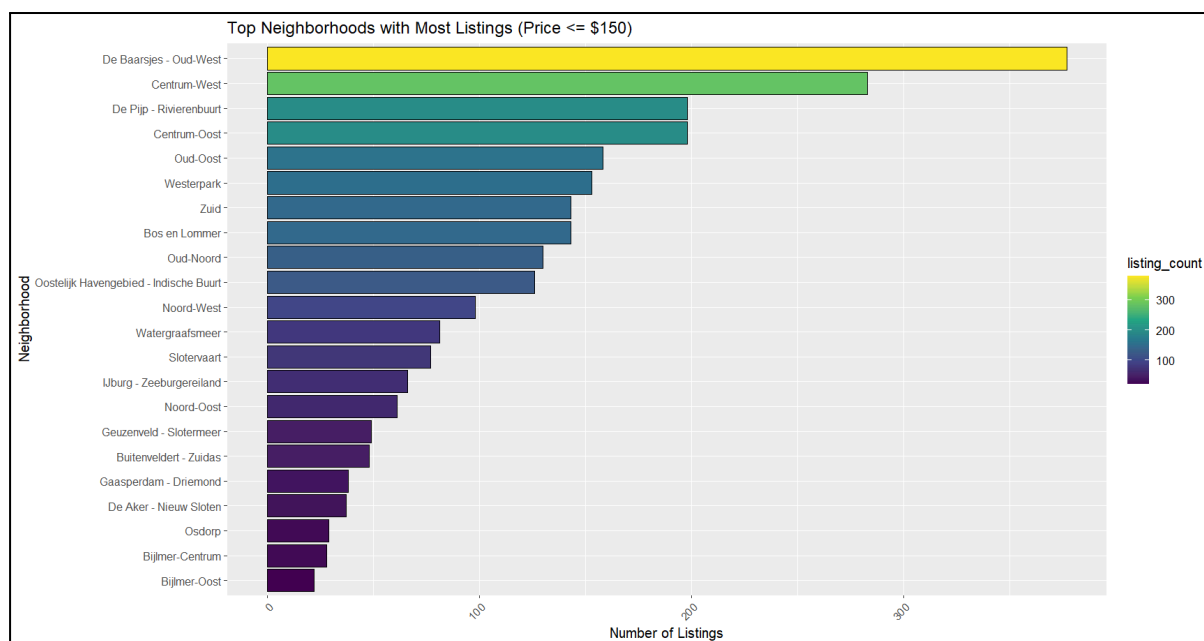


Figure 14: Price Vs Review Scores

Price Analysis of Accommodation by Room Type and Neighbourhood: The analysis indicates that private rooms are the most affordable option for middle-class retired couples in all three neighbourhoods. While entire homes/apartments offer more space and amenities, they come at a higher average price, particularly in Watergraafsmeer and Westerpark. For those seeking the most cost-effective accommodations, Westerpark stands out with lower average prices for both room types.

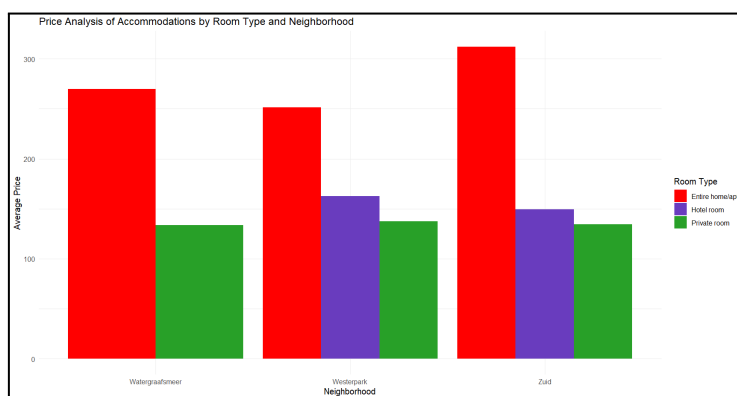


Figure 15: Price Analysis of Accommodation by Room Type and Neighbourhood

Market Gap and Opportunities:

- Middle-class retired couples need housing options designed specifically for their needs, emphasising affordability, safety, and accessibility.
- User-friendly platforms with customizable search filters can enhance the housing search experience for retirees, offering convenience and efficiency.
- Developing social spaces and organising community events can foster a sense of belonging and connection among retirees in their chosen neighbourhoods.

Conclusions:

After examining the accommodation landscape in Amsterdam, it's clear that there's a good range of affordable housing options for middle-class retirees. Private rooms are the most economic, striking a nice balance between cost and privacy. If they are willing to splurge a bit more, entire homes and apartments offer extra space and amenities, especially in neighbourhoods like Watergraafmeer and Westerpark. To make the most of our search, we should focus on neighbourhoods with plenty of listings within a budget, while also considering factors like safety, convenience, and community vibe. For housing providers, it's important to keep prices competitive, highlight the benefits of different accommodation types, and improve the overall guest experience to cater better to retirees like us. However there are certain limitations.

- Missing data in critical variables may affect the accuracy of insights drawn from the analysis, highlighting the need for robust data collection methods.
- External factors like economic conditions and government policies can impact the accommodation market.