

Spatial Data Analysis on Green Spaces and House Prices in London Boroughs

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Contents

1	Background	2
2	Objective	2
3	Data	2
4	PART A: ALL LONDON WARDS	4
4.1	Data Visualization	4
4.2	Statistical Tests	6
5	PART B: INNER LONDON	6

1 Background

In the urban context of London, the relationship between access to green spaces and housing prices has become a significant focal point for investigation. As urbanization intensifies, the availability of green spaces in a city has profound implications for the quality of life and the economic landscape. Access to parks, gardens, and recreational areas not only contributes to the overall well-being of residents but also serves as a potential factor influencing housing market dynamics. Understanding this relationship is crucial for urban planners, policymakers, and residents alike, as it can inform strategic decisions regarding green space preservation, urban development, and housing affordability in a metropolis as dynamic and diverse as London.

Against this backdrop, the main objective of the forthcoming analysis is to systematically explore and establish the intricate relationship between access to green spaces and the pricing of residential properties in London. This investigation aims to employ quantitative methods to discern patterns, correlations, and potential causation between the proximity and quality of green spaces and the fluctuating prices of houses across different neighborhoods in the city. By unraveling these connections, the analysis seeks to contribute valuable insights that can guide urban planning initiatives, inform housing policies, and enhance our understanding of the complex interplay between urban ecology and real estate dynamics in the context of London.

2 Objective

The main objective of this analysis is to establish the relationship between access to green spaces and the price of houses in London.

3 Data

The data contains 17 variables and 633 observations of data. I augment the data with data for the map of london from the `sf` package to permit data visualization using maps.

We examine the missing values in the data. The variable prices in the prices has 2492 missing values, while eight (8) variables in the parks data have two missing values each.

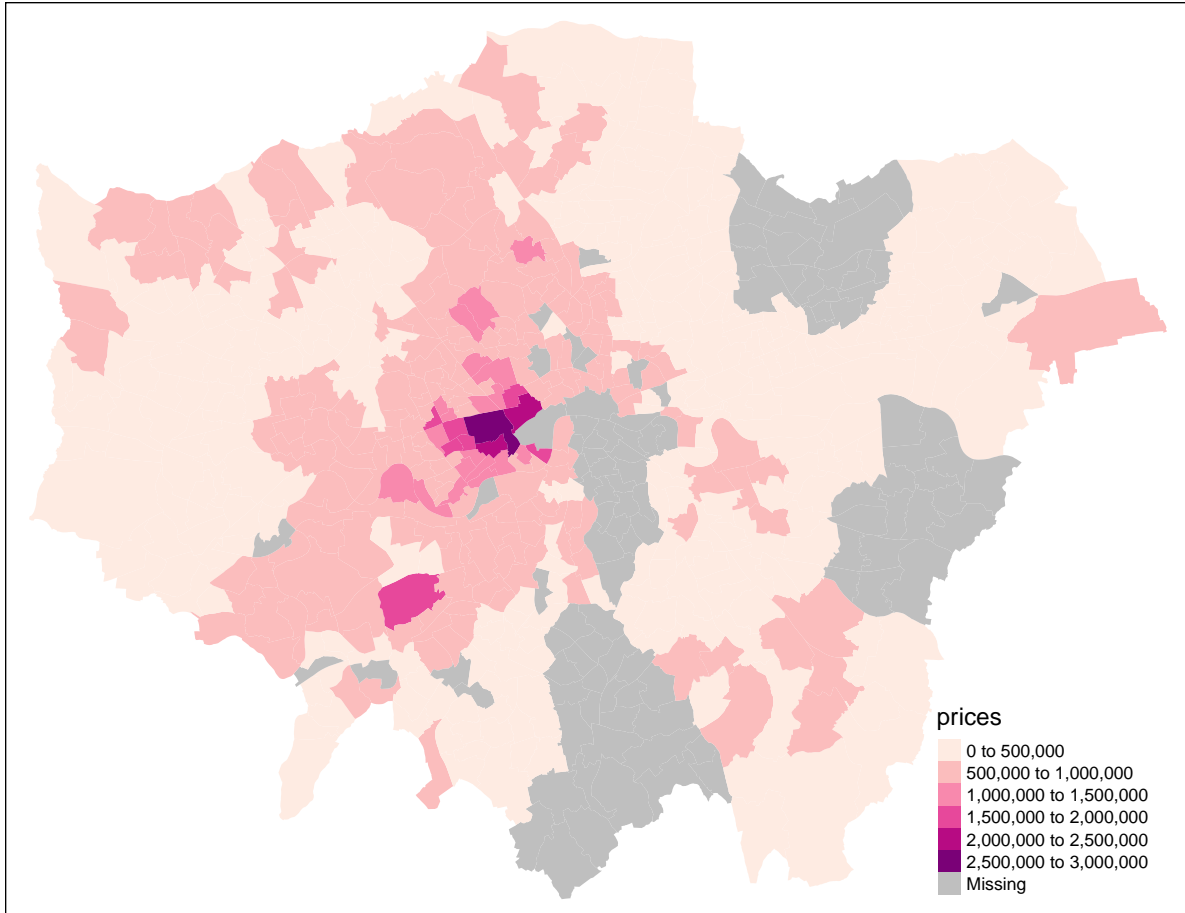
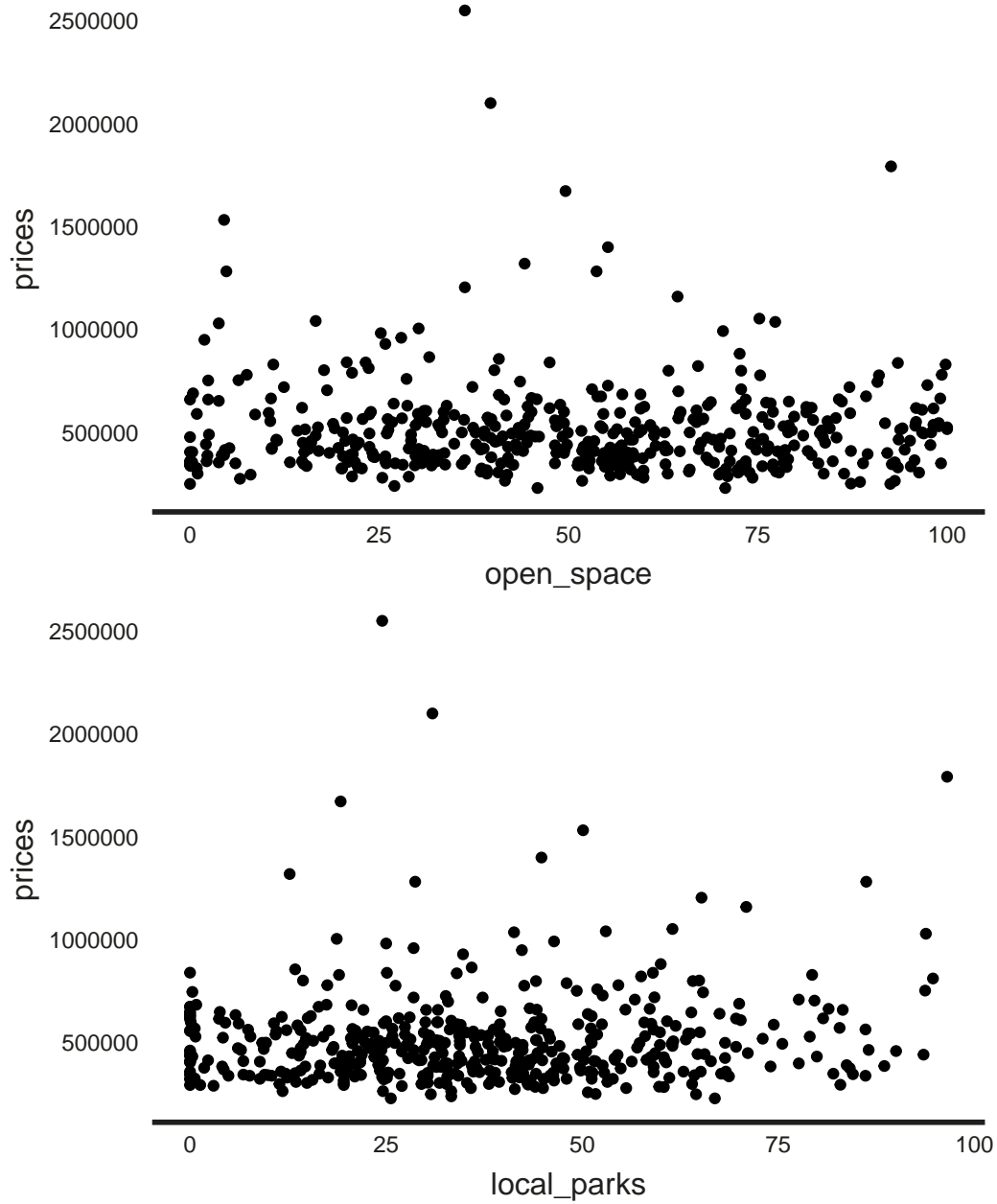
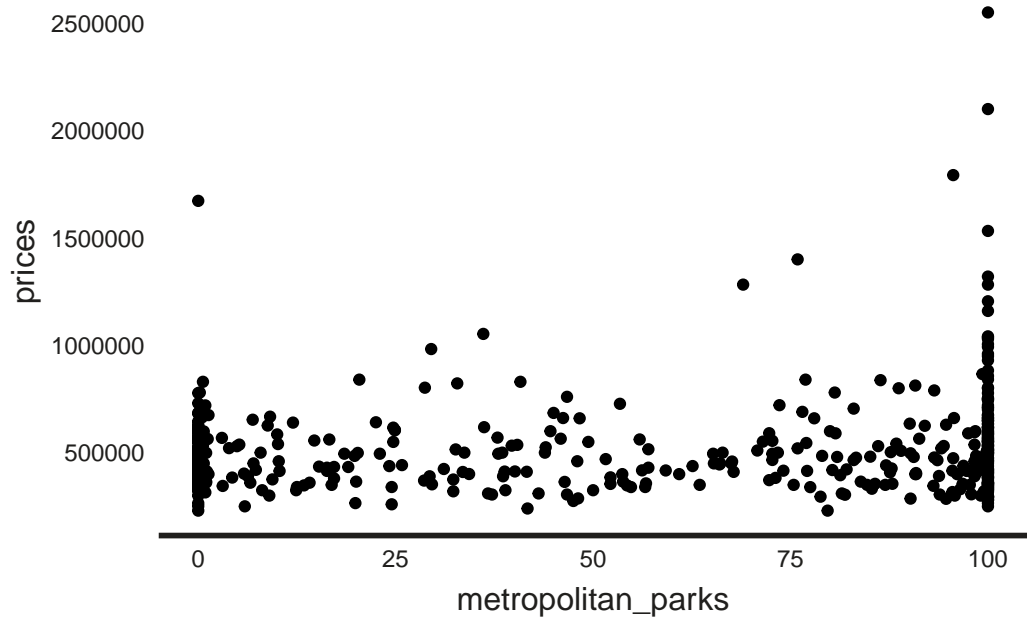
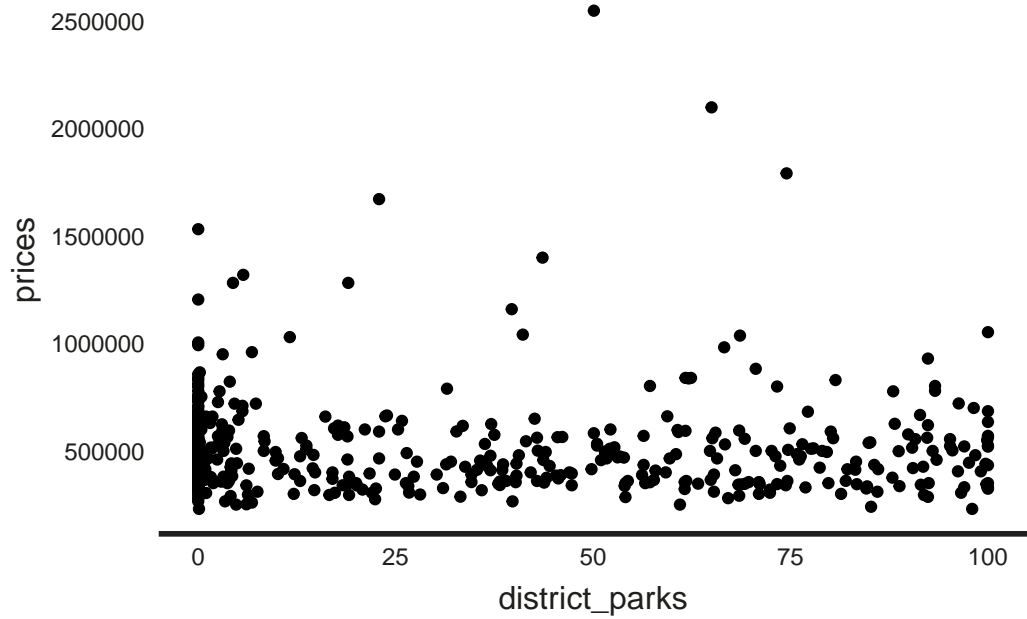


Figure 1: House Price in Greater London Boroughs

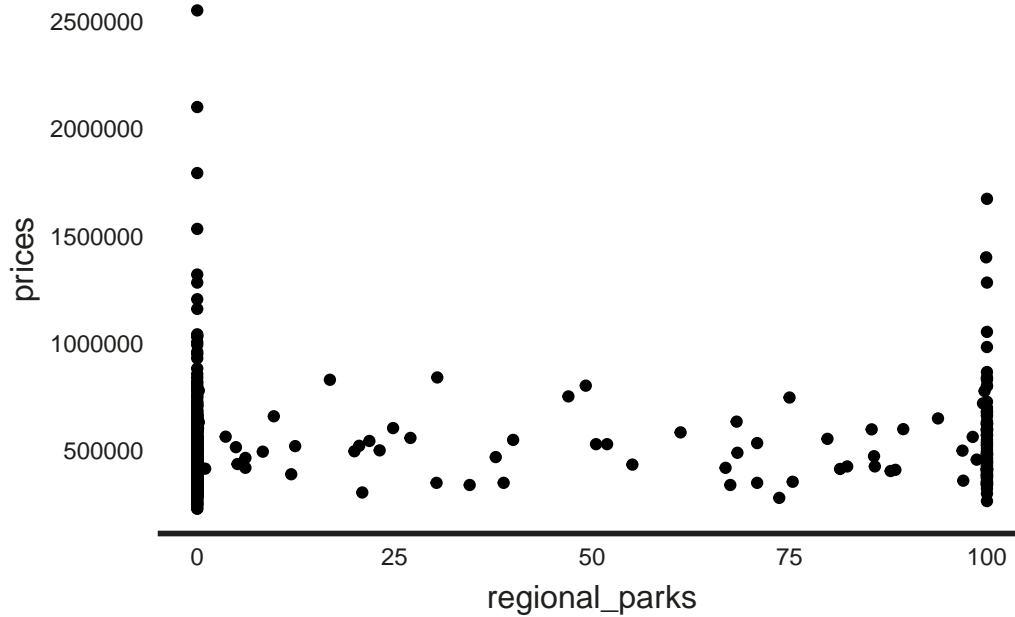
4 PART A: ALL LONDON WARDS

4.1 Data Visualization





	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
prices	337	17	535 963.1	268 089.3	230 000.0	476 500.0	2 550 000.0
open_space	366	24	50.4	27.0	0.0	51.8	100.0
local_parks	359	24	36.9	22.3	0.0	34.5	96.5
district_parks	276	24	33.0	34.5	0.0	20.0	100.0
metropolitan_parks	218	24	55.2	42.0	0.0	66.4	100.0
regional_parks	64	24	25.4	41.4	0.0	0.0	100.0



4.2 Statistical Tests

- T-tests
- ANOVA
- Analysis of spatial autocorrelation (e.g. Moran's I or LISA mapping).
- Correlations or chi-square tests of association.
- Linear, multiple or logistic models

5 PART B: INNER LONDON

	prices	open_space	local_parks	district_parks	metropolitan_parks	regional_p
prices	1
open_space	−0.03	1
local_parks	0.08	−0.02	1	.	.	.
district_parks	−0.03	−0.03	−0.21	1	.	.
metropolitan_parks	0.15	−0.02	0.09	−0.18	1	.
regional_parks	0.07	0.05	−0.06	0.01	−0.17	1

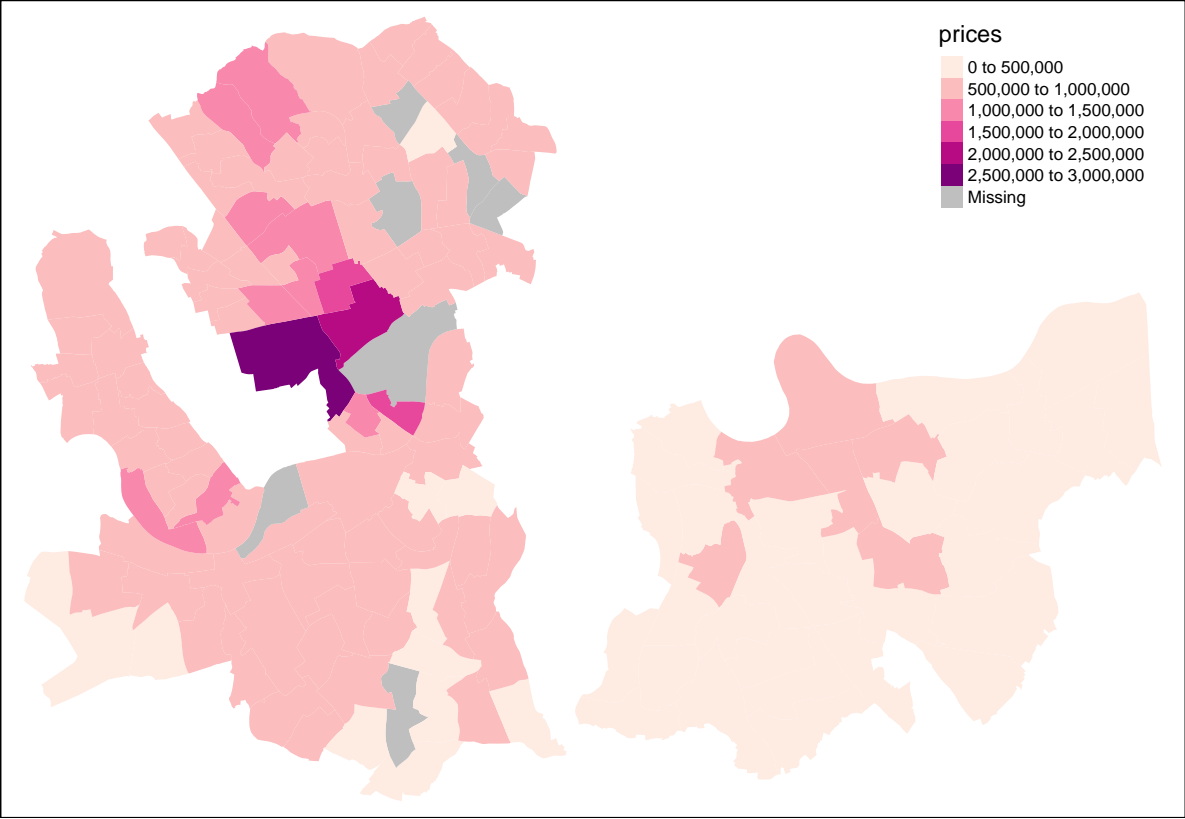


Figure 2: House Price in Inner London Boroughs