**Appendix**

**Table 3.1** Potential Variables and Data Sources

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | **mean** | **std** | **min** | **max** | **Data Source** |
| **Dependent Variables** | | | | | |
| Aggregated Bicycle rental trips at each Santander Cycle Station | 16790.79 | 10674.76 | 1215 | 94329 | [Cycling Data TFL](https://cycling.data.tfl.gov.uk/) |
| **Independent Variables** | | | | | |
| **Demographic heterogeneity** | | | | | [CDRC-IMD 2019](https://www.bing.com/ck/a?!&&p=91f5b8a20e265c14JmltdHM9MTcyNDg4OTYwMCZpZ3VpZD0xMGQxNWFiNy0wZmFiLTYwZTgtMjRkZi00YjU4MGVjZDYxNzYmaW5zaWQ9NTIwMw&ptn=3&ver=2&hsh=3&fclid=10d15ab7-0fab-60e8-24df-4b580ecd6176&psq=Consumer+Data+Research+Centre+(CDRC)+Open+Data+imd&u=a1aHR0cHM6Ly9kYXRhLmNkcmMuYWMudWsvZGF0YXNldC9pbmRleC1tdWx0aXBsZS1kZXByaXZhdGlvbi1pbWQ&ntb=1) |
| Population density (person/km²) | 11173.52 | 7254.62 | 0 | 34746.09 |
| Deprivation Level (Index of Multiple Deprivation (IMD) Score of the LSOA where bike docking station locates) | 0.46 | 0.23 | 0.10 | 1.00 |
| **Transport connectivity** | | | | | |
| Road density (km/km²) | 30.66 | 11.86 | 0 | 89.85 | [Digimap Ordnance Survey Service](https://digimap.edina.ac.uk) |
| Distance to the nearest bus station (m) | 158.23 | 156.88 | 4.64 | 881.73 |
| Distance to the nearest underground station (m) | 432.93 | 301.68 | 4.35 | 1433.80 |
| Average Distance to the nearest railway station (m) | 371.39 | 225.09 | 169.37 | 9017.37 |
| Average Distance to Central Activity Zone centroid (m) | 3945.38 | 2069.12 | 169.37 | 9017.37 |
| **Land Use** | | | | |
| Area of Retail land-use per km² | 0.10 | 0.18 | 0.00 | 1.15 |
| Area of Residential land-use per km² | 1.24 | 1.57 | 0.00 | 14.58 |
| Area of Leisure Park land-use per km² | 0.84 | 2.79 | 0.00 | 0.00 |
| Area of Commercial land-use per km² | 0.19 | 0.61 | 0.00 | 9.07 |
| **Points of Interest (POI)** | | | | |
| POI Entropy: H= | 1.49 | 0.28 | 0 | 2.16 |
| Number of offices per km² | 467.05 | 738.75 | 0 | 11044.21 |
| Number of education institudes per km² | 7.31 | 11.29 | 0 | 85.78 |
| Number of public facilities per km² | 63.85 | 46.98 | 63.85 | 46.98 |
| Number of sports facilities per km² | 11.08 | 13.68 | 11.08 | 13.68 |
| Number of Catering Site per km² | 167.85 | 249.07 | 167.85 | 249.07 |
| Number of daily shopping places per km² | 45.54 | 52.64 | 45.54 | 52.64 |
| Number of non-essential retail shop per km² | 102.51 | 206.67 | 0 | 1916.51 |
| Number of indoor entertainment places per km² | 13.93 | 30.19 | 0 | 389.23 |
| Number of Short-Term Accommodation per km² | 13.98 | 31.14 | 0 | 453.24 |
| **Mobility behaviour** |  |  |  |  | [2021 Cencus- LONDON DATASTORE](https://data.london.gov.uk/census/2021-ward-and-lsoa-estimates/) |
| Ratio of households with no car | 0.67 | 0.11 | 0.32 | 0.87 |
| Residents aged 16 and over in employment who work mainly at office(%) | 0.23 | 0.04 | 0.13 | 0.39 |
| Usual residents who take bicycles to work(%) | 0.38 | 0.26 | 0.11 | 1.00 |

\* For POI Entropy, *n* represents the number of POI categories, and is the proportion of the location category. The log function based natural logarithm. A higher value of H indicates greater diversity or a more even distribution of locations.

Note: All land-use data was calculated within the Voroini polygon around each docking point; Road density was derived by the average lengths of all road segments within each station influence area .