

GeoJournal – Online Resource 1

Platform urbanism across scales: Mapping Airbnb, urban renewal and street corridors in Lisbon

Supplementary annual, lagged and finer-scale planar and network density analyses cited in the main manuscript

S1. Annual planar density patterns

Figs. S1–S4 present the four annual planar KDE comparisons. Each figure uses the same paired layout, with Airbnb on the left and licensed urban renewal on the right. The maps support interpretation of persistence, expansion and contraction within each phenomenon; raw intensity magnitudes are not compared directly between datasets or years.

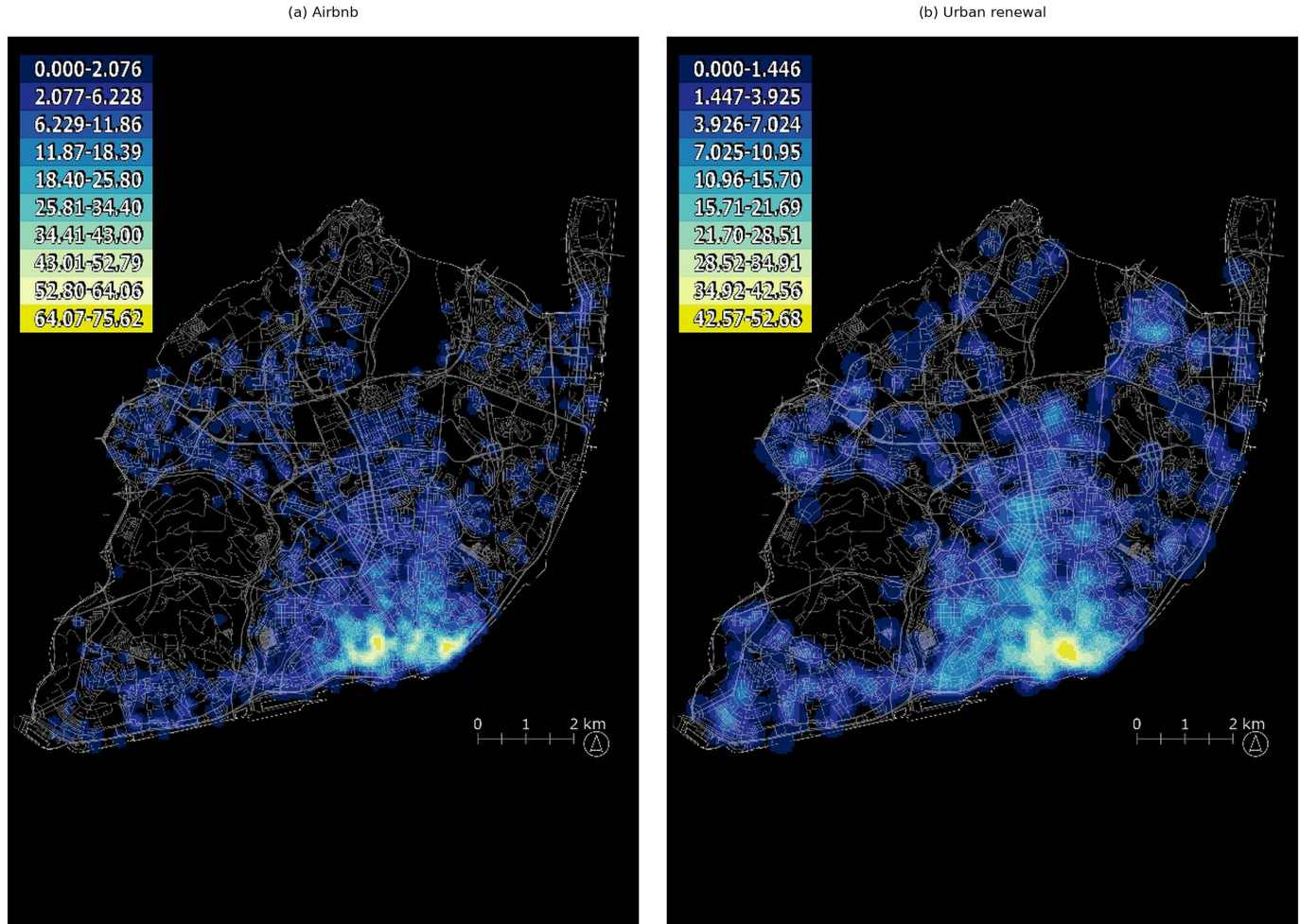
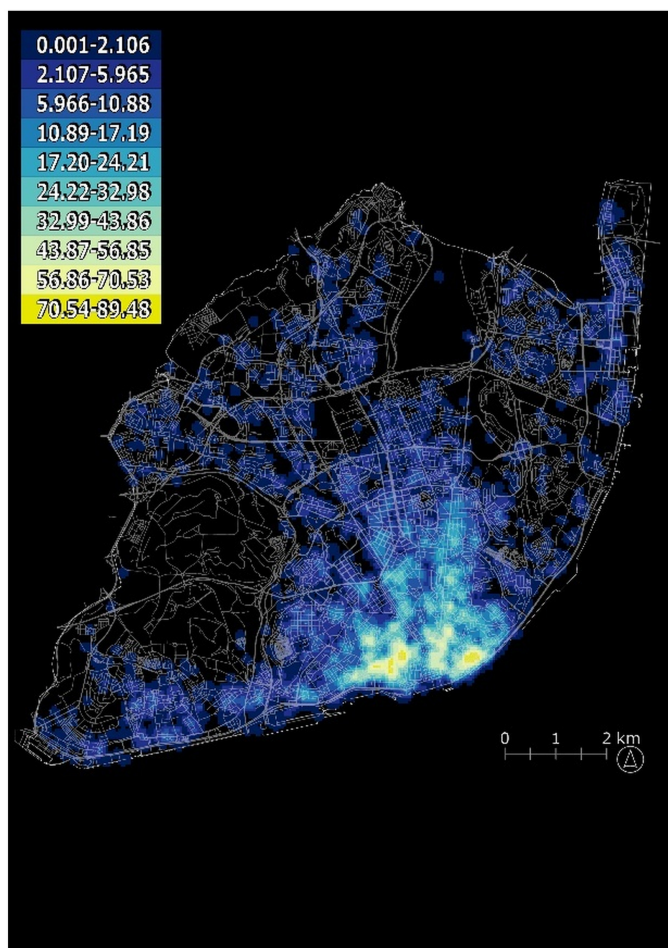


Fig. S1 Annual planar KDE comparison for 2015–2016: (a) Airbnb listings; (b) licensed urban-renewal permits

(a) Airbnb



(b) Urban renewal

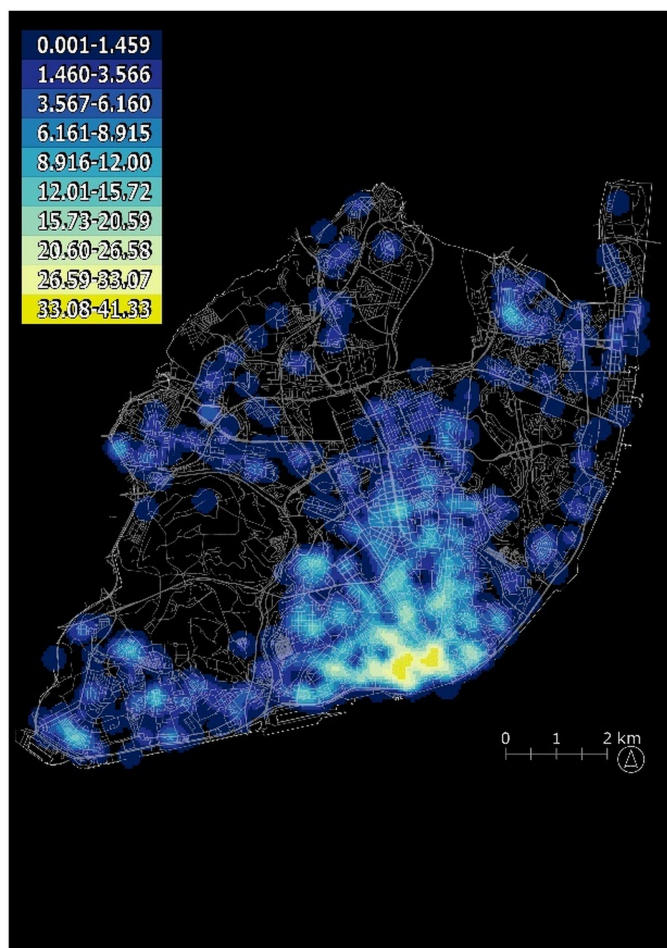
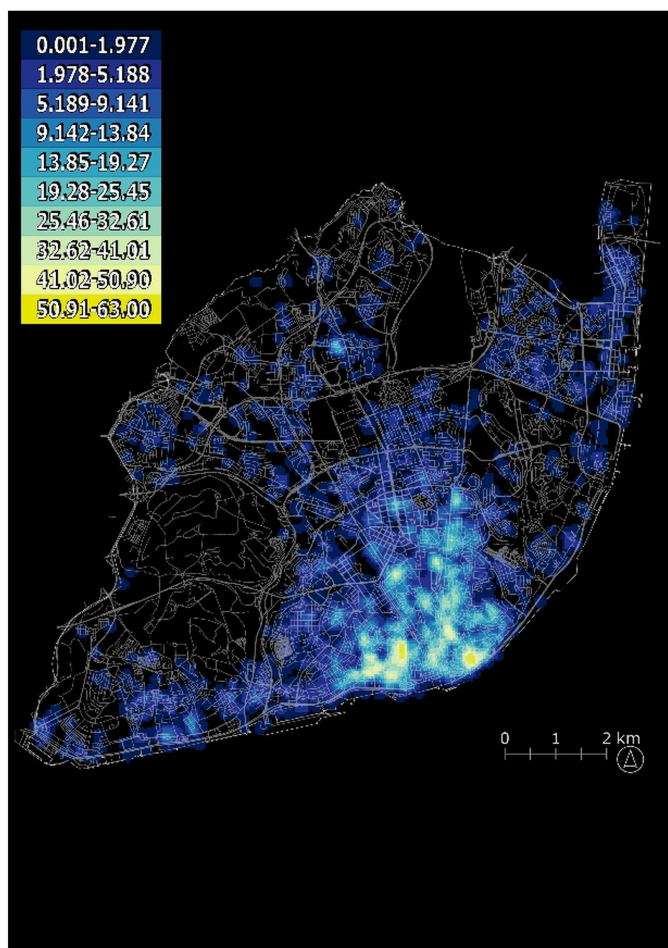


Fig. S2 Annual planar KDE comparison for 2016–2017: (a) Airbnb listings; (b) licensed urban-renewal permits

(a) Airbnb



(b) Urban renewal

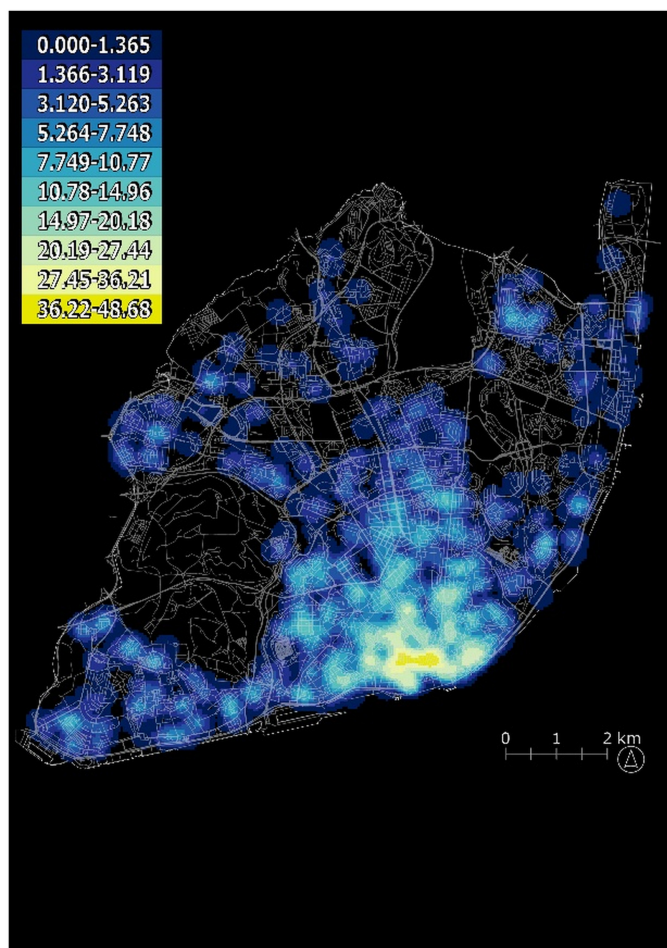


Fig. S3 Annual planar KDE comparison for 2017–2018: (a) Airbnb listings; (b) licensed urban-renewal permits

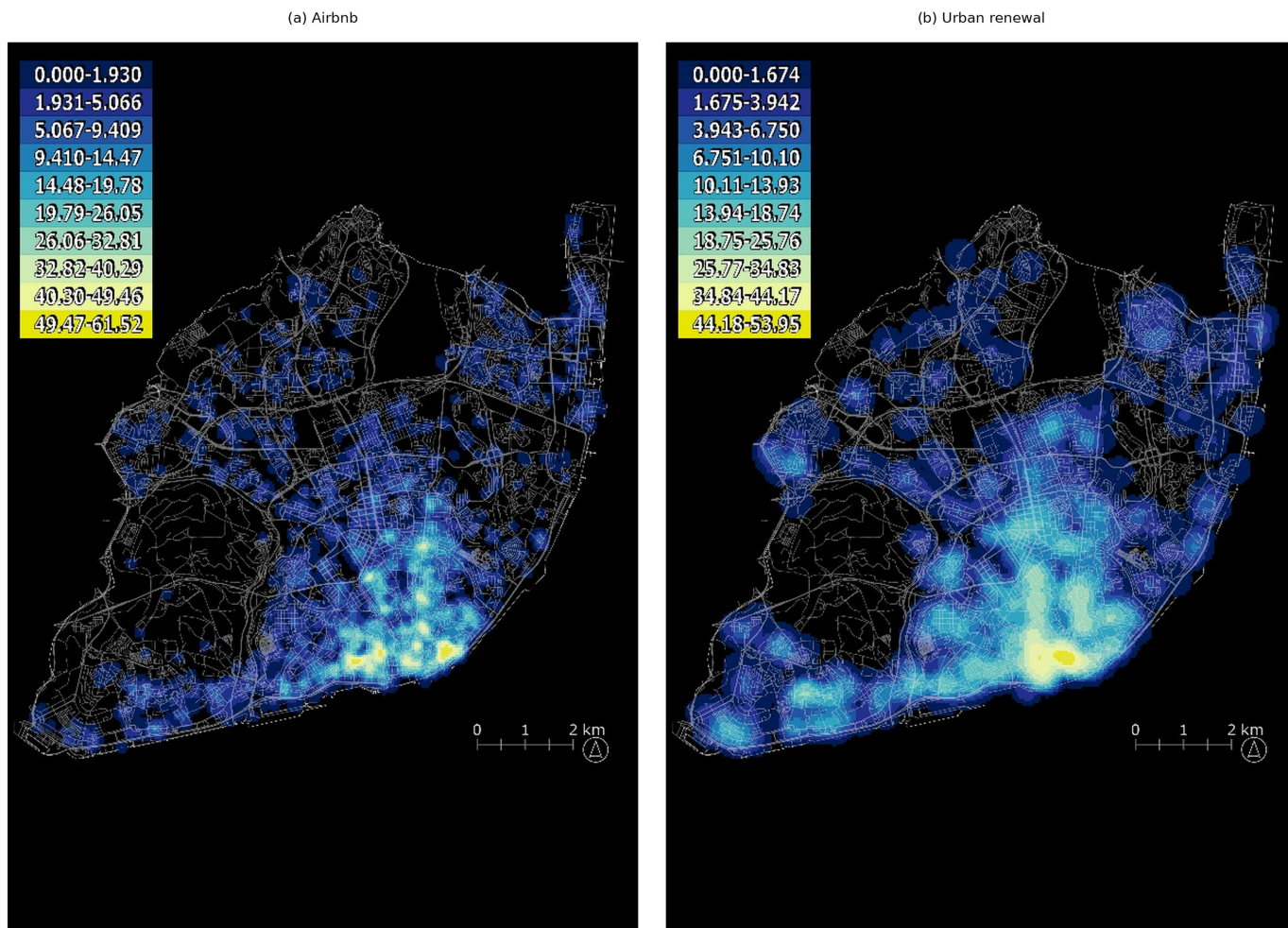


Fig. S4 Annual planar KDE comparison for 2018–2019: (a) Airbnb listings; (b) licensed urban-renewal permits

S2. Annual network-based density patterns

Figs. S5–S8 present the annual NKDE comparisons used to examine changes in the organisation of upper-intensity links. The same equal-split discontinuous kernel, 15 m bandwidth and 1.5 m sampling interval were applied throughout.

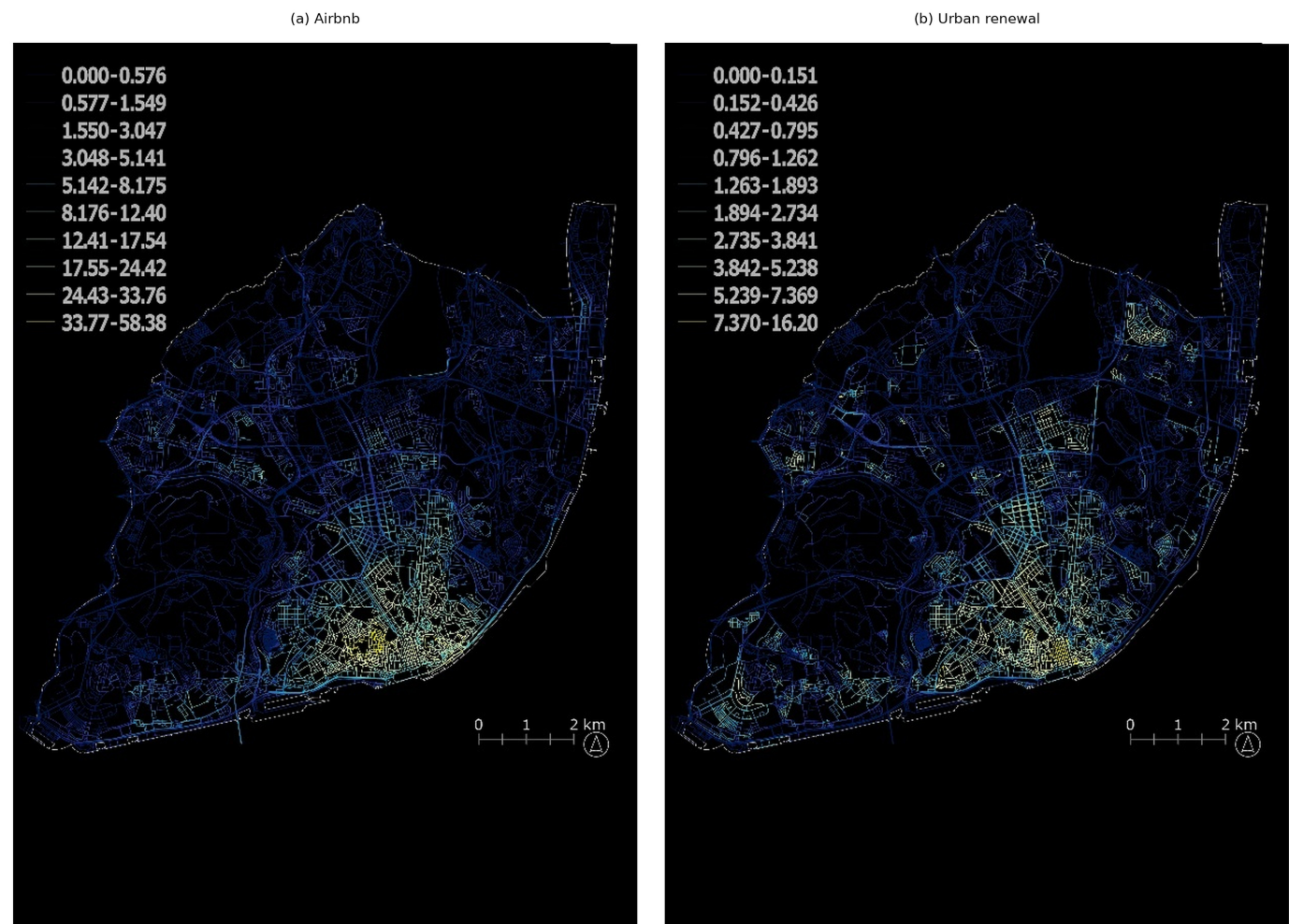
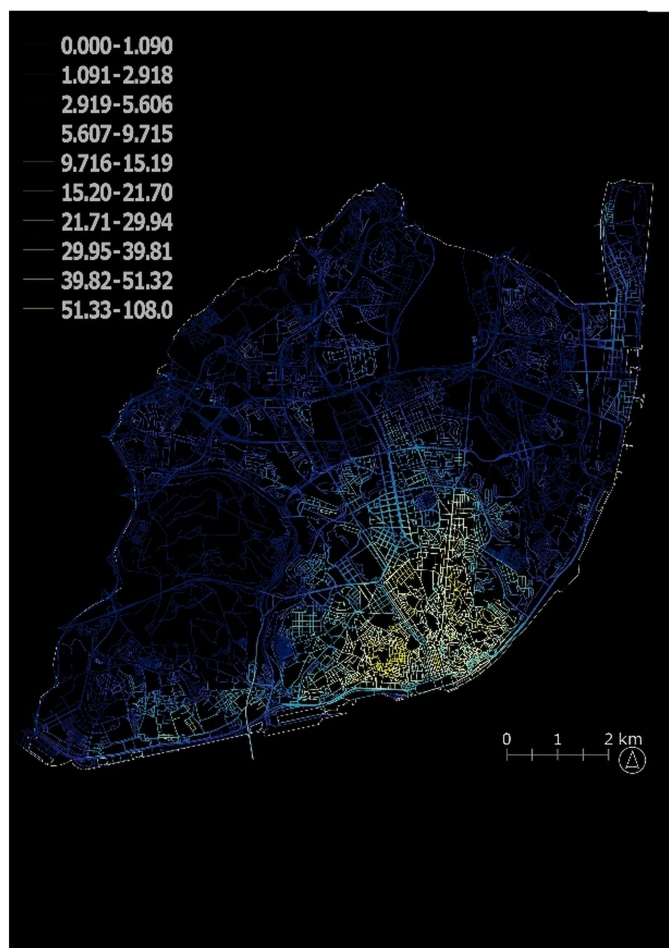


Fig. S5 Annual network KDE comparison for 2015–2016: (a) Airbnb listings; (b) licensed urban-renewal permits

(a) Airbnb



(b) Urban renewal

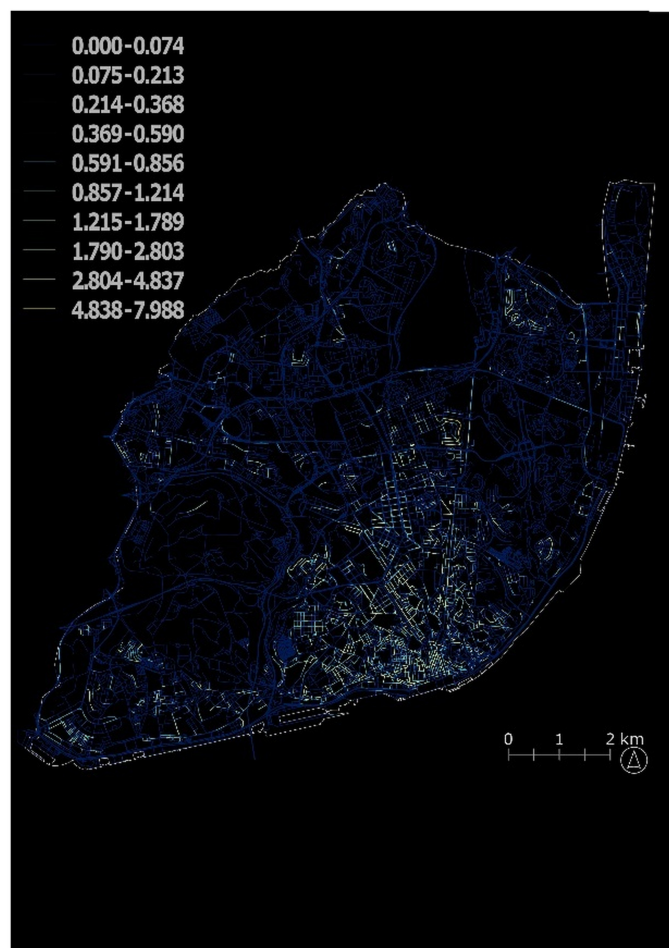
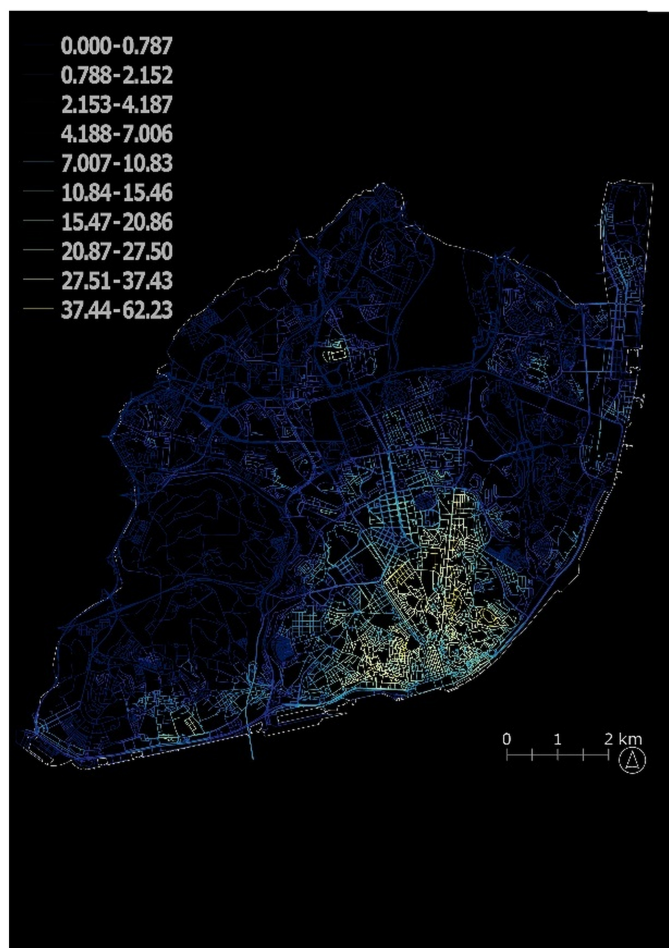


Fig. S6 Annual network KDE comparison for 2016–2017: (a) Airbnb listings; (b) licensed urban-renewal permits

(a) Airbnb



(b) Urban renewal

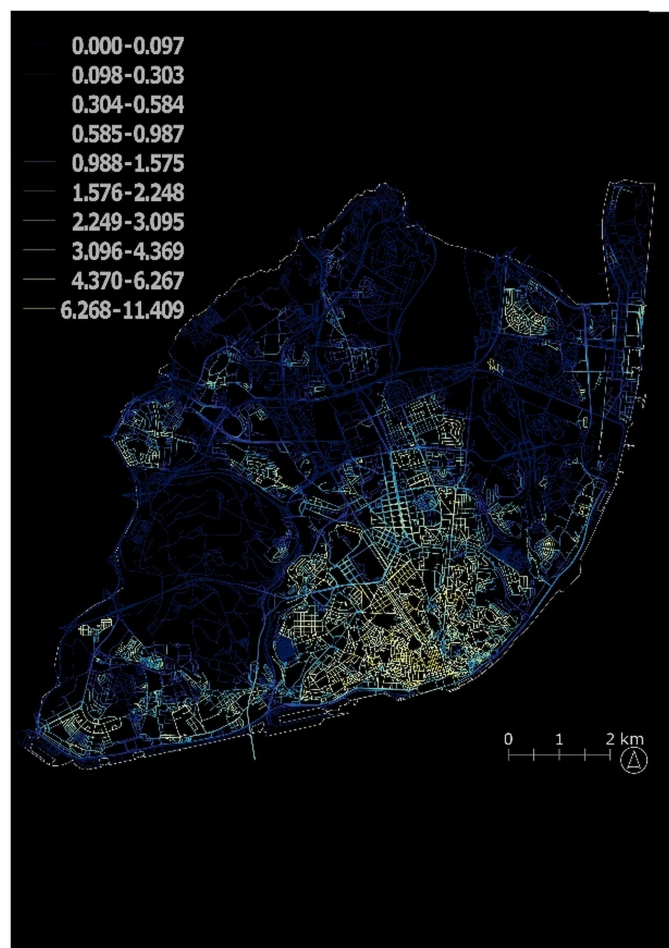
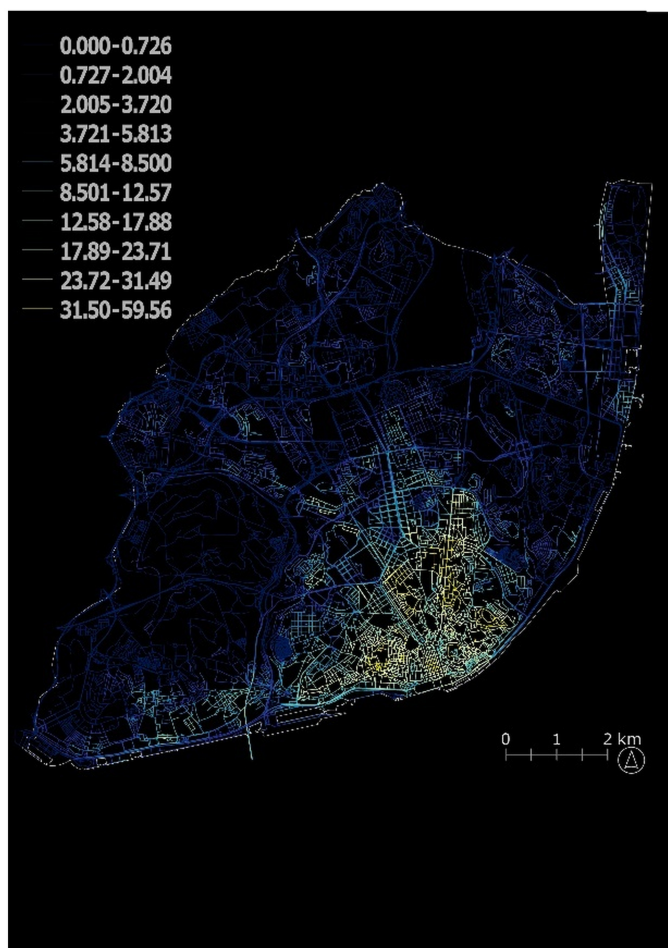


Fig. S7 Annual network KDE comparison for 2017–2018: (a) Airbnb listings; (b) licensed urban-renewal permits

(a) Airbnb



(b) Urban renewal

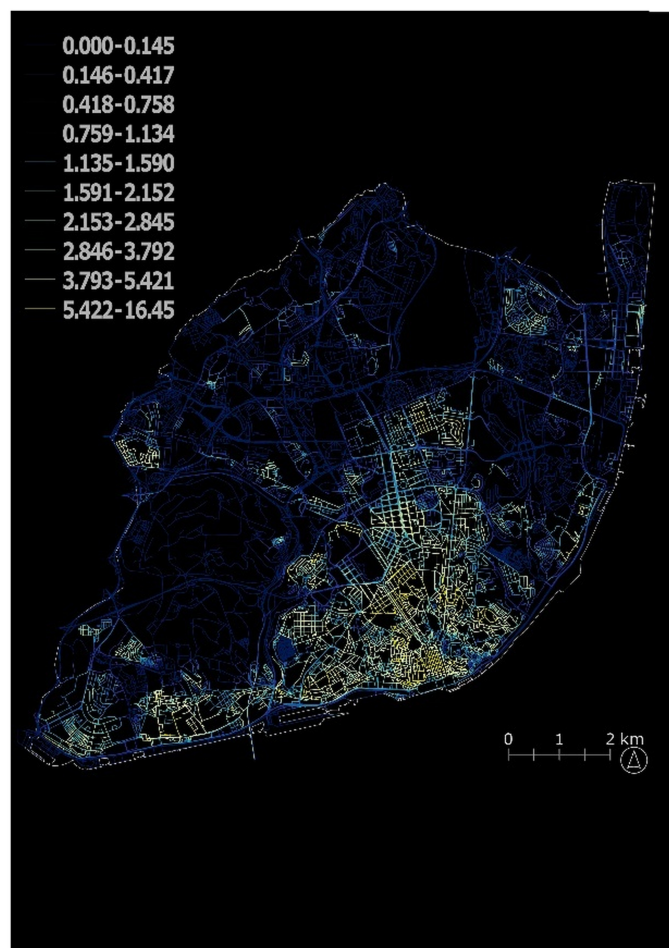


Fig. S8 Annual network KDE comparison for 2018–2019: (a) Airbnb listings; (b) licensed urban-renewal permits

S3. Finer-scale illustration

Arroios illustrates why a broad planar concentration can contain several lower-intensity link sequences. The network map separates the Avenida Almirante Reis axis from parallel and side-street peaks, supporting the selective or fragmented category used in the main article.

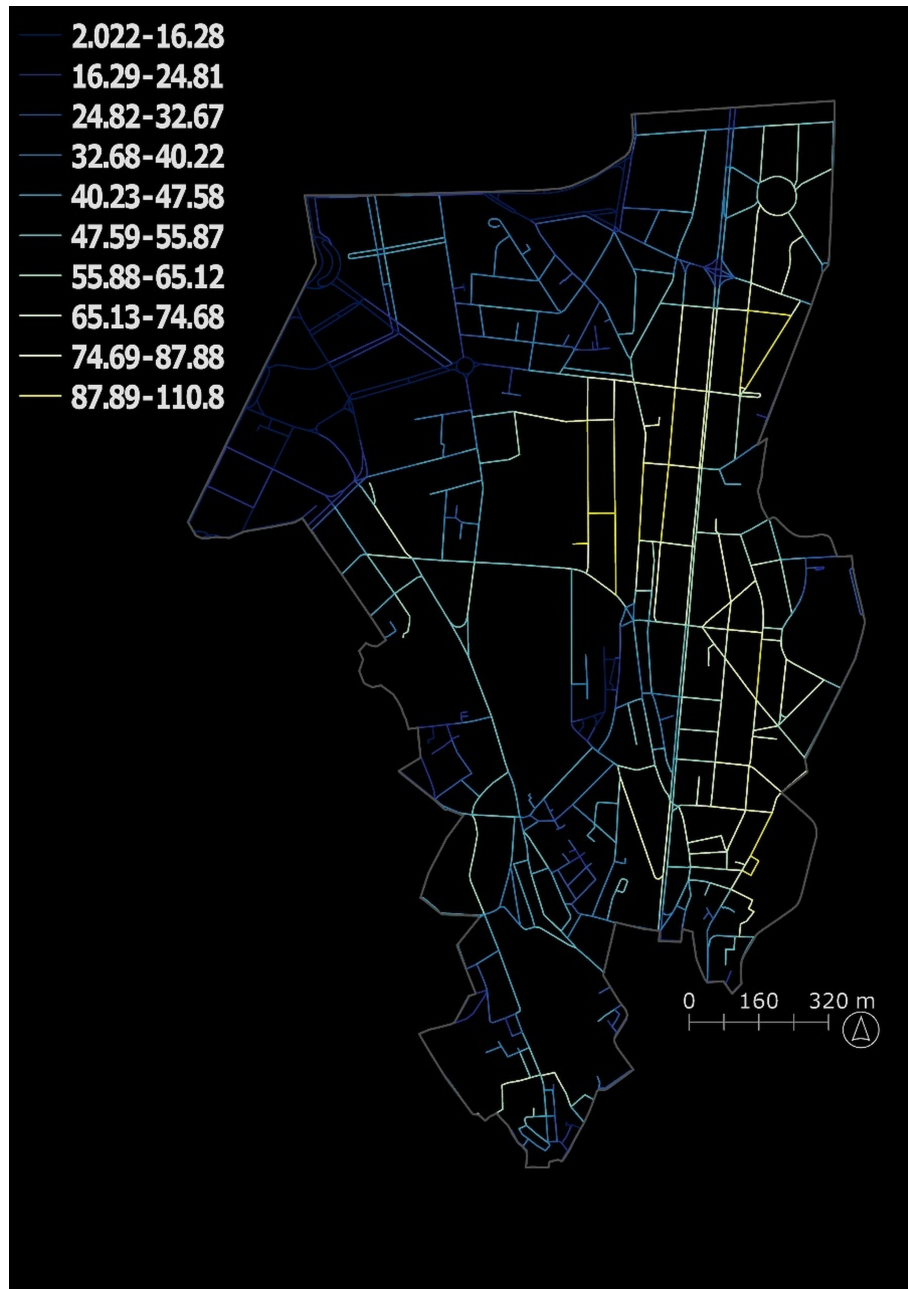


Fig. S9 Network KDE of Airbnb listings in Arroios parish, illustrating corridor- and street-level differentiation

S4. Interpretation of lagged comparisons

The annual offset comparisons were treated as exploratory. Renewal in 2015–2016 was compared with Airbnb in 2016–2017; renewal in 2016–2017 with Airbnb in 2017–2018; and renewal in 2017–2018 with Airbnb in 2018–2019. Correspondence was recurrent in parts of Baixa, Bairro Alto–Misericórdia and Avenida da Liberdade, but the relative extent and precise link structure changed between windows. Avenida Almirante Reis showed adjacency and displacement rather than a uniform sequence. These observations do not establish temporal causality.

S5. Additional methodological detail

The thesis workflow tested four KDE bandwidth selectors: fixed rule-of-thumb, fixed cross-validation, adaptive cross-validation and QFA-KDE. Computation-time tests were conducted in Python 3.9 across the aggregated and annual Airbnb and renewal datasets. The fixed rule-of-thumb and QFA-KDE selectors produced results of comparable magnitude and substantially shorter processing times than the cross-validation alternatives. Rule-of-thumb outputs were used in the main maps to avoid duplicating similar surfaces and because

they provided clearer visual interpretation. KDE cell size was set to 50 m following tests of alternative raster sizes.

At municipal scale, NKDE used the equal-split discontinuous kernel, 15 m bandwidth and 1.5 m sampling interval. The network contained 22,098 segments, 75,472 nodes and 13,358 intersections. The same settings were maintained across annual windows. Local parish and street readings used proportionally finer settings in the thesis workflow to distinguish short links. Edge effects can remain near clipped boundaries and network ends; these areas were interpreted cautiously.