

Estimating employment and business in small or bespoke areas

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Summary

- Official statistics on jobs and businesses are rarely available at small or special geographies such as high streets.
- GLA Economics has developed new methods to apportion ONS employment and business counts to these areas using commercial land area and total floorspace.
- The new methods address the limitations of the historical land-share method, which can over-allocate activity to areas with large residential or open spaces and under-allocate activity to dense commercial and office clusters.
- Commercial land share performs best for estimating businesses, while commercial floorspace share performs best for estimating employment.
- Validation shows that the new methods substantially reduce misallocation compared with the old land-share method.
- Some residual error remains, particularly for very small areas, so estimates at these levels should be interpreted with caution.

1 Introduction

Economic development, planning and regeneration strategies are often set at geographies that official statistics do not report on. For example, London planners and policymakers often require accurate employment and business counts for local, ad-hoc geographies such as the Central Activities Zone (CAZ), the Northern Isle of Dogs (NIOD), Opportunity Areas, town centres, and high streets.

The official series for detailed employment statistics, the Office for National Statistics (ONS) Business Register and Employment Survey (BRES), is available down to the Lower Layer Super Output Area (LSOA) level. The official series for business statistics, the UK Business Counts dataset from the ONS, is available down to the Middle Layer Super Output Area (MSOA) level.¹ Bespoke geographies are often smaller than

¹ Lower-level resolution is available through the ONS Secure Research Service.

these official units, and their boundaries rarely coincide with official geographies. Thus, there is a need to apportion counts from official geographies to target areas using spatial calculations.

GLA Economics (GLAE) has, until now, apportioned counts using a land-share method. This allocates jobs and businesses in a standard ONS geography (e.g. LSOA) to the 'target' geography (e.g. a high street) in proportion to the share of total land area falling within the target geography.

This method has known drawbacks. It over-distributes employments and businesses to target areas that contain large residential areas or open spaces and it also under-estimates numbers in dense office clusters.

This methodology paper addresses these limitations by replacing the total physical land layer with commercial land layer that contain building information. We propose two refined methods to better distribute business and employment counts to smaller areas using commercial land area and total floorspace, respectively. Compared with the existing land-share method, the refined methods reduce the share allocated to the wrong borough by 18 percentage points for businesses (from 34% to 16%) and 34 percentage points for employees (from 47% to 13%).

This paper is organised as follows. Chapter 2 introduces the data and existing method. Chapter 3 explains the refined methods for business and employment estimation. Chapter 4 validates the refined methods, while Chapter 5 presents their applications to the CAZ, NIOD and an example high street. Chapter 6 discusses the advantages and limitations of the methodological advancements and sets out the next steps. Chapter 7 concludes the paper.

2 Data and existing method

Previous GLAE work relied on land-share apportionment, in which employments and businesses are allocated based on the share of land parcels in smaller geographies (e.g., high streets) among land areas in bigger geographies (e.g., local authorities). This method assumed that employments and businesses were evenly distributed across all physical land within each LSOA/MSOA².

For business counts, the method is based on MSOA-level counts and land-share proportions within smaller target geographies within each MSOA. For employment, the method is based on numbers at the LSOA level and land-share proportions within smaller target geographies within each LSOA.

This approach has the advantage of simplicity. The only data required is:

1. Numbers of businesses (or employment) in MSOAs (or LSOAs).
 - a. UK Business Counts are an extract from the Inter Departmental Business Register (IDBR) and record the number of Local Units active at a reference date in March of each year. Available down to MSOA level from Nomis.
 - b. The Business Register and Employment Survey (BRES)³ is the ONS' preferred measure for employment at low-level geographies and for detailed industry breakdowns. Available down to LSOA level and 5-digit UK SIC codes from Nomis.

² An official geography often more relevant for businesses and employment is the Workplace Zone (WZ). However, WZ data is often not available, and, when it is available, its usage is limited by the need to round estimates in accordance with statistical disclosure rules. In practice this means that the gains in accuracy of more granular data are offset by the error introduced by rounding.

³ In some cases GLA Economics uses data from ONS Workforce Jobs and the Annual Population Survey to adjust BRES borough-level employee data for self-employment. Discussion of this methodology is outside the scope for this note.

2. MSOA and LSOA geographic boundaries are available from the ONS Open Geography Portal at several different resolutions. This method uses the full resolution – clipped to the coastline (BFC)⁴.
3. Boundaries for designated special areas such as the Central Activities Zone, Northern Isle of Dogs, and High Streets are published by the GLA on the London Datastore.

The refined methods additionally use buildings data from the Ordnance Survey (OS) National Geographic Database (NGD)⁵, which provides building footprints, number of commercial addresses, and floor counts. In this study, a building and its parcel are classified as commercial if they contain at least one commercial address. These geometries form the commercial map. The remaining buildings, which contain no commercial addresses, are referred to as the non-commercial map. We use the May 2026 version of commercial map in the analysis.

The existing method for employment estimation follows a four-step land share apportionment process:

1. **LSOA-level data extraction:** Extract LSOA level employment counts
2. **Spatial intersection:** LSOA boundaries are intersected with target areas' boundary (e.g., town centres) using GIS overlay operations. Where an LSOA partially overlaps a target area, a clipped geometry is generated to calculate the size of the intersecting area.
3. **Land-share calculation:** For each LSOA intersecting the target area, a land share proportion is calculated as the ratio of the intersected area to the total LSOA area.

$$Land\ Share_{i,j} = \frac{Area(LSOA_i \cap Target_{area_j})}{Area(LSOA_i)}$$

4. **Job and business allocation:** Apply these shares to LSOA counts to estimate jobs in the target area. Job estimates are finally aggregated across all intersecting LSOAs to produce a total figure for the target geography.

$$Counts_j = \sum_i (Counts_i \times Land\ Share_{i,j})$$

The business estimation follows a similar method except that the base geography is MSOA.

This method assumes a uniform distribution of jobs and businesses within each LSOA/MSOA, which often does not reflect the true spatial concentrations. This can over-allocate jobs and businesses to large, low-density areas such as large parks and under-allocate them to small, high-density locations, including high-rise office buildings. To address these limitations, this paper proposes two refined methods that better capture the actual spatial distribution of business and employments.

⁴ See difference between versions in <https://geoportal.statistics.gov.uk/documents/f5f65561e00c4ea5af3708b7e1062830/explore>

⁵ [OS NGD Buildings | OS National Geographic Database](#)

3 Proposed methods

We proposed two methods to refine the estimation of business and jobs respectively.

Refined Business Estimation: Commercial Land Share

This method replaces total land area with commercial land as the apportionment basis. Commercial land is based on buildings data from OS NGD.⁶ This additional layer of data classifies buildings into commercial and residential stock, showing every building, location, number of commercial addresses, land area, total floorspace and height (in storeys).

The definition of commercial land use is any building with commercial addresses, and includes mixed-use buildings, residential buildings with commercial activities, schools and government buildings.

Because businesses are not uniformly distributed across all land types, restricting the analysis to commercial land provides a more realistic basis for apportionment than total land area.

The refined method follows four steps:

1. **MSOA-level business counts:** Extract MSOA level business counts from the ONS UK Business Counts (local units by industry and employment size band).
2. **MSOA-level commercial land calculation:** Perform a spatial intersection between the commercial land layer and the MSOA boundaries to aggregate total commercial land area for each MSOA.
3. **Commercial land share calculation:** Conduct a secondary spatial intersection between the MSOA commercial land layer and the target boundaries (e.g., a high street). The commercial land is clipped to the target boundary. The share proportion is defined as the ratio of the target area's commercial land to the parent MSOA's total commercial land area.

$$\text{Commercial Land Share}_{i,j} = \frac{\text{Commercial Land} (MSOA_i \cap \text{Target}_{area_j})}{\text{Commercial Land} (MSOA_i)}$$

4. **Business allocation:** Apply these shares to MSOA business estimates numbers to calculate the number of businesses in the target smaller areas. Business estimates are then aggregated across all MSOAs that intersect the target area to produce a total business estimate.

Refined Employment Estimation: Commercial Floorspace Share

This method replaces total land area with commercial floorspace as the apportionment basis. Commercial floorspace aligns more closely than commercial land shares for estimating employment because, in general, floorspace per employee is relatively stable across use classes, but the number of businesses does not scale directly with building size or height. Larger buildings may contain relatively few firms (e.g. single-occupancy offices or large retail units), while smaller premises can host multiple businesses.

One issue with the floorspace approach is that the OS NGD does not show the residential/commercial shares of mixed-use buildings. We therefore make an assumption on how much commercial space is used. We assume buildings with residential functions only have one floor of commercial space.

⁶ [OS NGD Buildings | OS National Geographic Database](#)

This method follows five steps:

1. **LSOA-level employment:** LSOA-level workforce job estimates are derived by extracting each area's share of employees from BRES and applying this proportion to the total number of jobs in London from the WFJ.
2. **Commercial floor space estimation:** Estimate commercial floor space by multiplying each building's ground floor footprint area by its number of (adjusted) floors.
3. **LSOA-level aggregation:** The commercial floor space layer spatially intersects with LSOA boundaries. Commercial floor space aggregates to the LSOA level.
4. **Commercial floor space share calculation:** Run another spatial intersection between the LSOA commercial layer and target boundary, clipping commercial floor space to target area boundaries within their parent LSOA. The ratio of target-area commercial floor space to total LSOA commercial floor space defined the commercial floor space share.

$$\text{Commercial Floor Space Share}_{i,j} = \frac{\text{Floor Space}(\text{LSOA}_i \cap \text{Target_area}_j)}{\text{Floor Space}(\text{LSOA}_i)}$$

5. **Job allocation:** Apply these shares to LSOA job estimates numbers to calculate the number of jobs in the target smaller areas (e.g., CAZ). Job estimates are then aggregated across all LSOAs that intersect the target area to produce a total job estimate.

4 Method validation

To validate the methods, we test the old and new approaches on areas at ONS geographies where observed employment and business counts are available. This allows the estimates to be compared with actual counts at the same geographic level, providing an indication of how well each method reproduces the observed distribution. We further validated both the commercial map and the apportionment methods against the Valuation Office Agency's (VOA) non-domestic business floorspace publications.⁷

London-total to borough counts

The London-wide total was apportioned across the 32 boroughs and City of London and compared with observed counts, for both employees and businesses. Accuracy is measured as the share of employees or businesses allocated to the wrong borough, using total variation distance. In practical terms, it represents the proportion you would have to move between boroughs to match the observed pattern. It is a single total for London, not an average across boroughs. A score of 0 means every employee/business is allocated to the right borough while a score of 1 means none are.

Apportioning the London total by each borough's share of total land area (i.e., the old method) performs poorly, placing 47% of employees and 34% of businesses in the wrong borough. Because Outer London has more land per job/business, the old approach pushes counts outwards. Outer London boroughs receive

⁷ <https://www.gov.uk/government/statistics/non-domestic-rating-business-floorspace-march-2025>

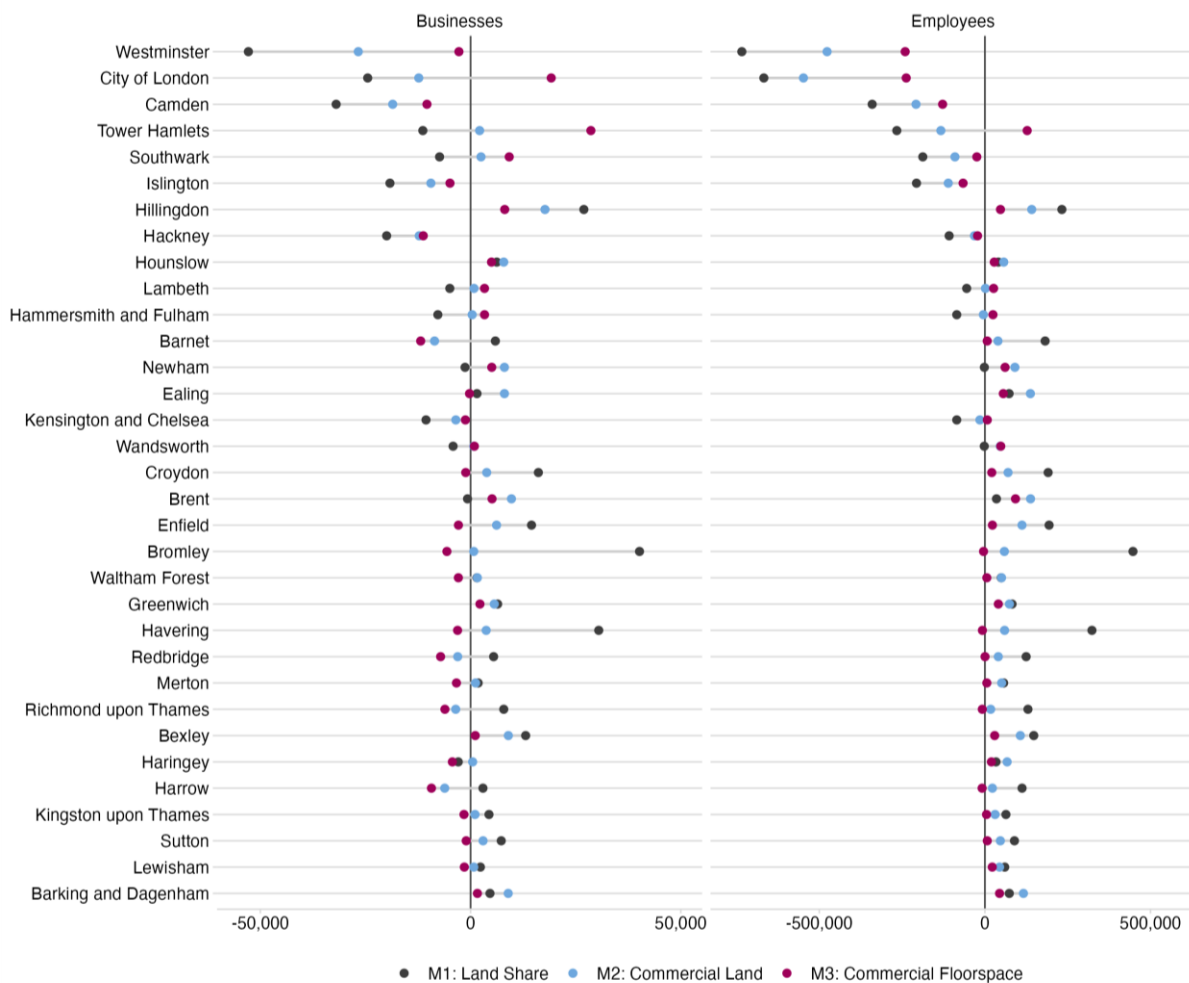
132% more employees and 68% more businesses than observed. Both commercial-based methods reduce the error.

The relative performance of the two commercial methods differs between employees and businesses. For employees, commercial floorspace further improves on the commercial land method, reducing the misallocation from 28% to 13%. For businesses, the two refined methods perform similarly, at 18% and 16% respectively.

However, this means the best methods still misallocate 13% of employees and 16% of businesses into the wrong boroughs.

Comparing estimates with observed counts borough by borough (Figure 1) also helps illustrate differences between methods. The old method's errors are systematically higher. For businesses, both commercial methods close the gap between estimated and actual counts. But the floorspace method over allocates businesses in some Inner London boroughs such as City of London, Tower Hamlets and Southwark. For employees, the floorspace method produces closer estimates to actual counts in most of the boroughs.

Figure 1: New methods tend to improve allocation but errors vary across local authorities



Sources: ONS BRES, ONS UK Business Counts, OS NGD

MSOA to LSOA employees

Employee counts at LSOA level were aggregated to MSOA, then reallocated back down to LSOA using each method. Predicted counts were compared with actuals across 4,835 LSOAs in 983 MSOAs for 2023.

Accuracy is measured as the share of an MSOA's employees allocated to the wrong LSOA, using the Total Variation Distance as above.

Switching from total land area to commercial land reduces within-MSOA misallocation by around a third, from 29% to 19%. Adding floorspace does not substantially improve performance further.

Nevertheless, floorspace remains the preferred benchmark for two reasons: firstly, it can be updated as new development comes forward, and secondly, it is a well-established measure already used in planning and by the VOA.

However, under the best-performing method, around 19% of employees remain allocated to the wrong LSOA within an MSOA. Additionally, a small number of Outer London LSOAs with home-based employment or employment in non-commercial premises receive no allocation. These account for around 0.1% of London employees.

Against VOA business floorspaces

On the input side, our commercial floorspace measure correlates strongly (correlation score of 0.92) with VOA's published floorspace across London's 33 local authorities, confirming that it captures where commercial density is concentrated. However, the OS measure is systematically two to three times higher than VOA values in absolute terms, particularly in tower-dense boroughs such as Tower Hamlets and Wandsworth. This reflects differences in the underlying floor-count data and definitions: our input captures all identified floors, whereas VOA excludes non-rateable space such as communal areas.

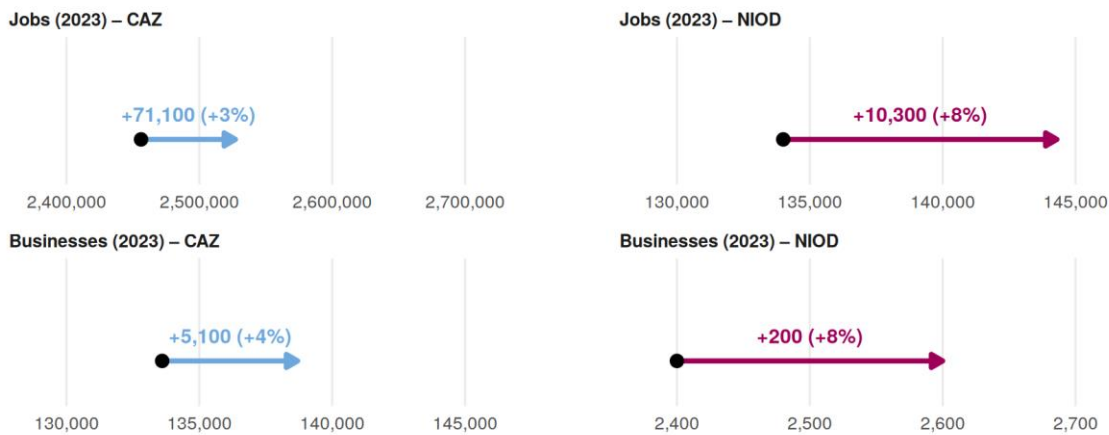
On apportionment, we further tested all three methods against VOA's London-wide property count (262,430 properties in total). Commercial floorspace and commercial land substantially outperform the old land-share method. Notably, the floorspace method's 9.9% error is only slightly higher than the 8.5% Total Variation Distance between the two underlying data sources, suggesting that much of the remaining discrepancy may reflect differences between the datasets themselves rather than the apportionment method. However, VOA property counts are not directly equivalent to business counts, so this comparison should be interpreted with caution.

5 Applications

To show what the change in methodology means in practice, we compare the old and new estimations for the CAZ, NIOD and an example high street – Ealing Broadway.

CAZ and NIOD

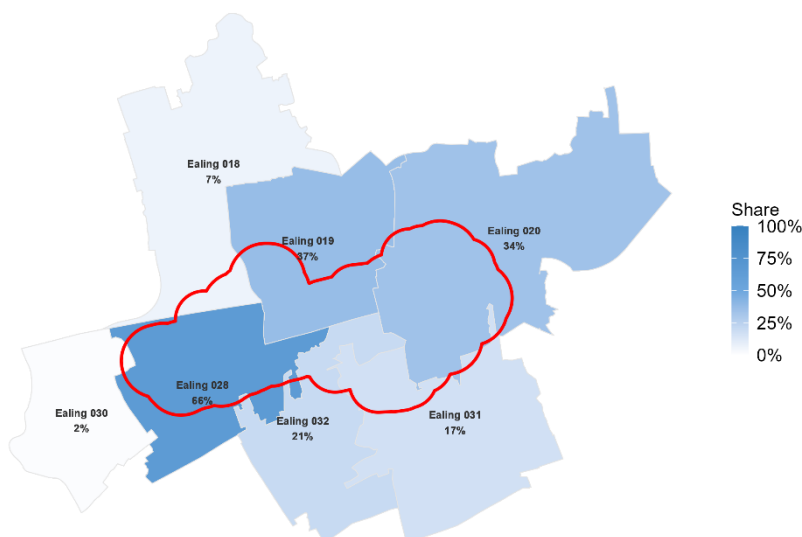
According to the validation results, the old method is more likely to misallocate both employment and businesses to Outer London boroughs, so Inner London boroughs — particularly the CAZ and NIOD — would be expected to be undercounted. The new methods reduce this error and allocate more jobs to high-density business areas. See Figure 2 for the comparison. Using the new methods, the CAZ sees 3% more jobs and 4% more businesses, and NIOD sees 8% more jobs and businesses.

Figure 2: New methods raise employment and business counts in key geographies

Ealing Broadway high street

Ealing Broadway high street, with a 200-meter buffer, overlaps with seven MSOAs. The land-based shares are shown in Figure 3. Mapping commercial areas within these MSOAs (Figure 4) shows that commercial buildings are concentrated within the high street boundary. This indicates that the true shares of business in Ealing Broadway are higher than the land-based shares.

The refined shares are shown in Figure 5. Ealing 030, which contains no commercial buildings, has a revised share of 0%. All other MSOAs have higher shares of businesses, confirming the new approach shifts distribution inward toward dense commercial clusters.

Figure 3: Land shares in MSOAs intersecting with Ealing Broadway High Street (200m buffered)

Sources: GLAE & ONS Open Geography Portal

Figure 4: Commercial lands in MSOAs intersecting with Ealing Broadway High Street (200m buffered)

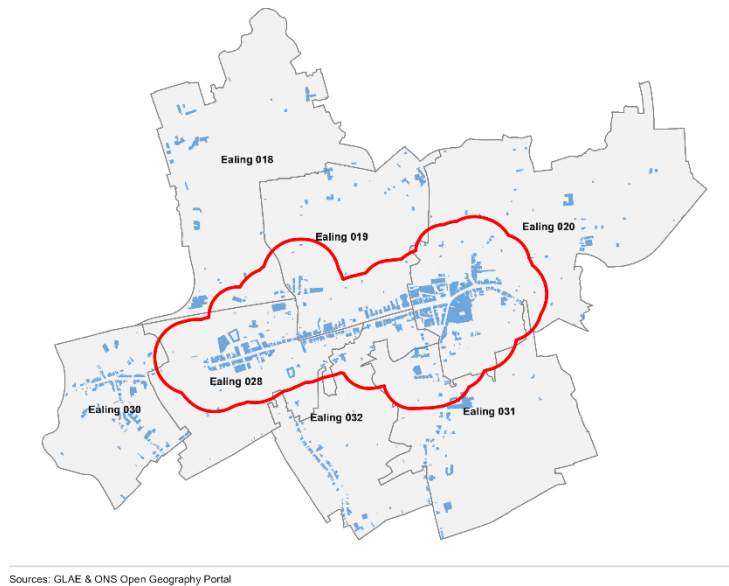
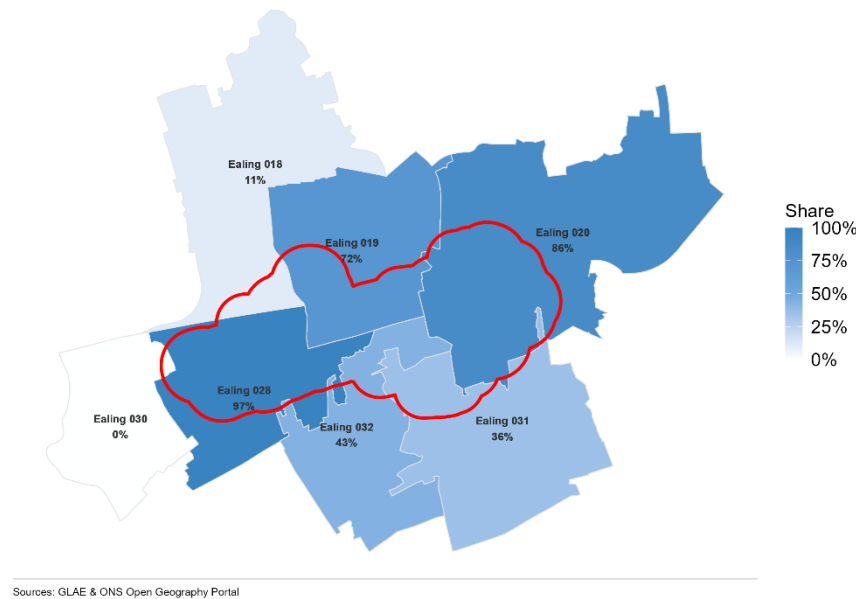


Figure 5: Commercial land share in MSOAs intersecting with Ealing Broadway High Street (200m buffered)



Without a buffer, Ealing Broadway high street overlaps with 15 LSOAs. The old land share of high street land within each LSOA is in Figure 6. Commercial land within these LSOAs is again concentrated within the high street boundary. Figure 7 also shows the commercial buildings within intersecting LSOAs, with lighter blue indicating buildings with fewer floors and darker blue indicating buildings with more floors. Buildings inside the high street are often taller than those outside, so the floorspace basis should allocate higher shares of jobs to the high street.

The new shares in most LSOAs see an increase in their share, with the largest increases in Ealing 019E, Ealing 028B and Ealing 020E (see Figure 8). By contrast, Ealing 019D and Ealing 020H see drops as both LSOAs contain no commercial buildings within the high street boundary.

Figure 6: Land shares in LSOAs intersecting with Ealing Broadway High Street

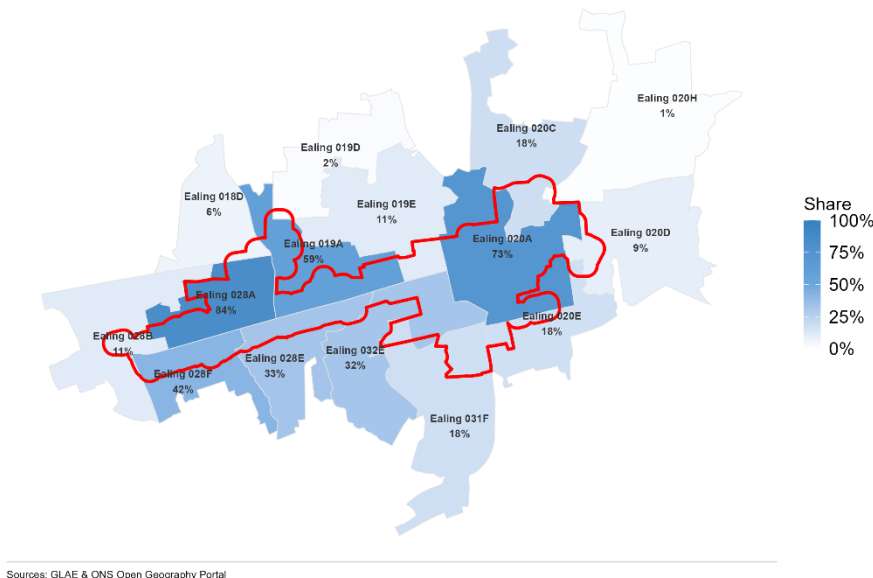


Figure 7: Commercial floor-space in LSOAs intersecting with Ealing Broadway High Street

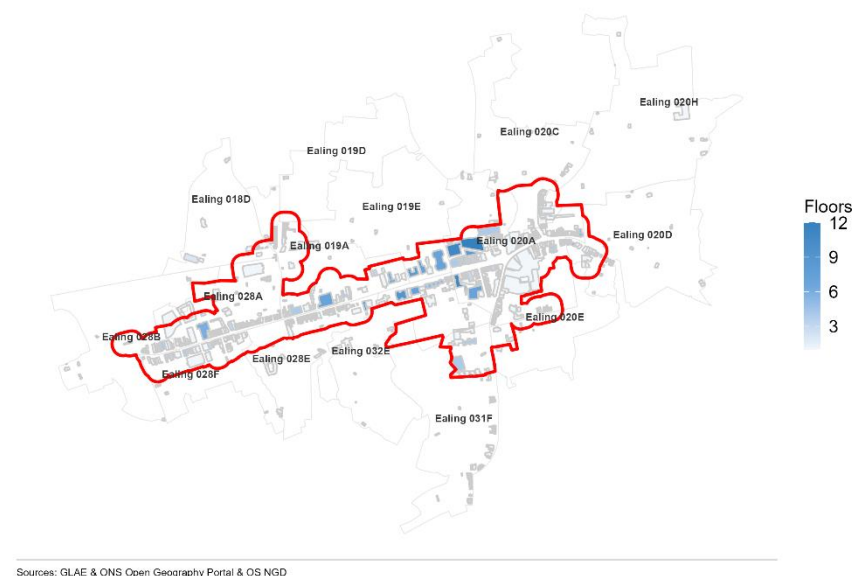
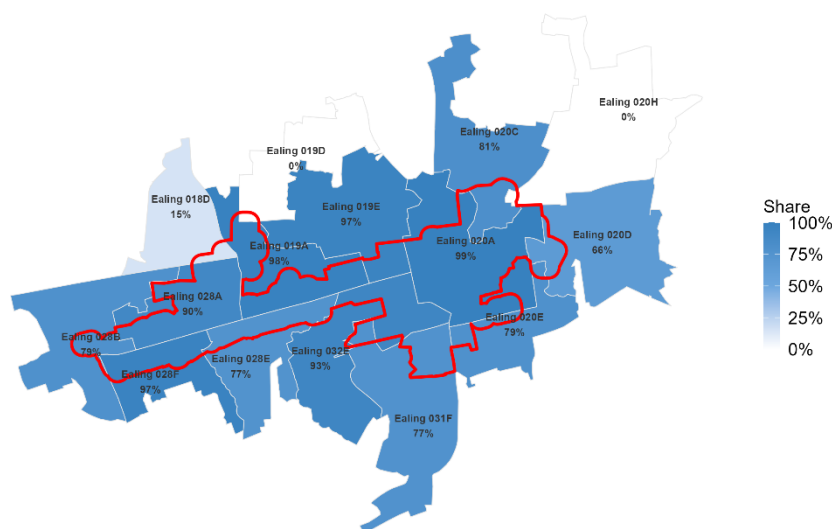


Figure 8: Commercial floor-space share in LSOAs intersecting with Ealing Broadway High Street

Sources: GLAE & ONS Open Geography Portal

6 Advantages and limitations of the new methodology and next steps

The validation results and example applications confirm that the refined methods reduce misallocation of employment and business counts across smaller or bespoke areas. These gains improve the accuracy of estimates and provide better evidence for place-based policymaking.

Compared with commercial land share, commercial floorspace shares improve employment estimation but does not substantially improve business estimation. This can be explained by the fact that employees accumulate with floor area, whereas a business is counted as a single unit regardless of the space it occupies.

The refined methods still rely on distributional assumptions. While the existing method assumes that activity is distributed uniformly across all land, the new methods assume that businesses are distributed uniformly across commercial land and employment uniformly across commercial floorspace. In practice, business and employment densities vary across sectors, building types and locations, which could be explored in future refinements.

Both refined methods allocate activity only to land or space classified as commercial. Non-commercial land (i.e., buildings without commercial addresses in OS NGD) is not accounted for, although it could still contain a small number of jobs. This creates a caveat for home-based employment or businesses, and for those operating in non-commercial spaces, such as people working in a park or an open market.

The commercial map used in this analysis is a snapshot of buildings and land use conditions in May 2026, so any changes in developments, demolitions, or changes in building use over time are not accounted for. Future improvements could include developing historical and future commercial maps using additional building information available in the OS NGD database, allowing the analysis to better capture changes in the built environment over time.

Vacancies are also not accounted for or measured in the methods. Floorspace measures capacity, not usage. Next steps could look further into this.

A summary of methods is in Table 1.

Table 1: Methods summary

Method	Land share (old)	Commercial land share	Commercial floorspace share
Spatial data	Total land area	Commercial land area	Commercial land area + Building floor counts
Spatial accuracy	Low-medium	Medium-high	High
Sensitivity to density	Low	Medium	High
Key assumptions	Equal distribution across all land	Equal distribution across all commercial land	Equal utilisation of all commercial floorspace
Caveats	Allocation includes residential, open space, and other non-commercial land.	Commercial land data is a single-year snapshot – temporal changes in building stock are not reflected. Activity outside commercial maps not captured.	Vacant floorspace not accounted for. Commercial land data is a single-year snapshot. Activity outside commercial maps not captured.
Recommended for	-	Business estimates	Employment estimates

7. Conclusion

The two new methods improve the existing land share method in distinct ways. The existing method is simple and long established but assumed activities spread evenly across all types of lands and so provides limited accuracy. The two refined approaches remove that assumption, and both validation tests show a substantial reduction in misallocation.

As businesses vary in size and are not equally distributed across floors — a high-rise office building may house one large company or several smaller ones — we compared the commercial-land-share and commercial-floorspace-share methods for business estimation at borough level and found that the commercial-land-share method produces more accurate results. For employment, floorspace provides a better basis for allocation, as workers are more likely to be distributed in proportion to the amount of commercial floorspace.

We recommend adopting the new commercial-based methods as the new baseline approaches: commercial land share for businesses and commercial floorspace share for employment.