

More residents, more jobs?

**The relationship between population, employment
and accessibility in London**

Will Cook

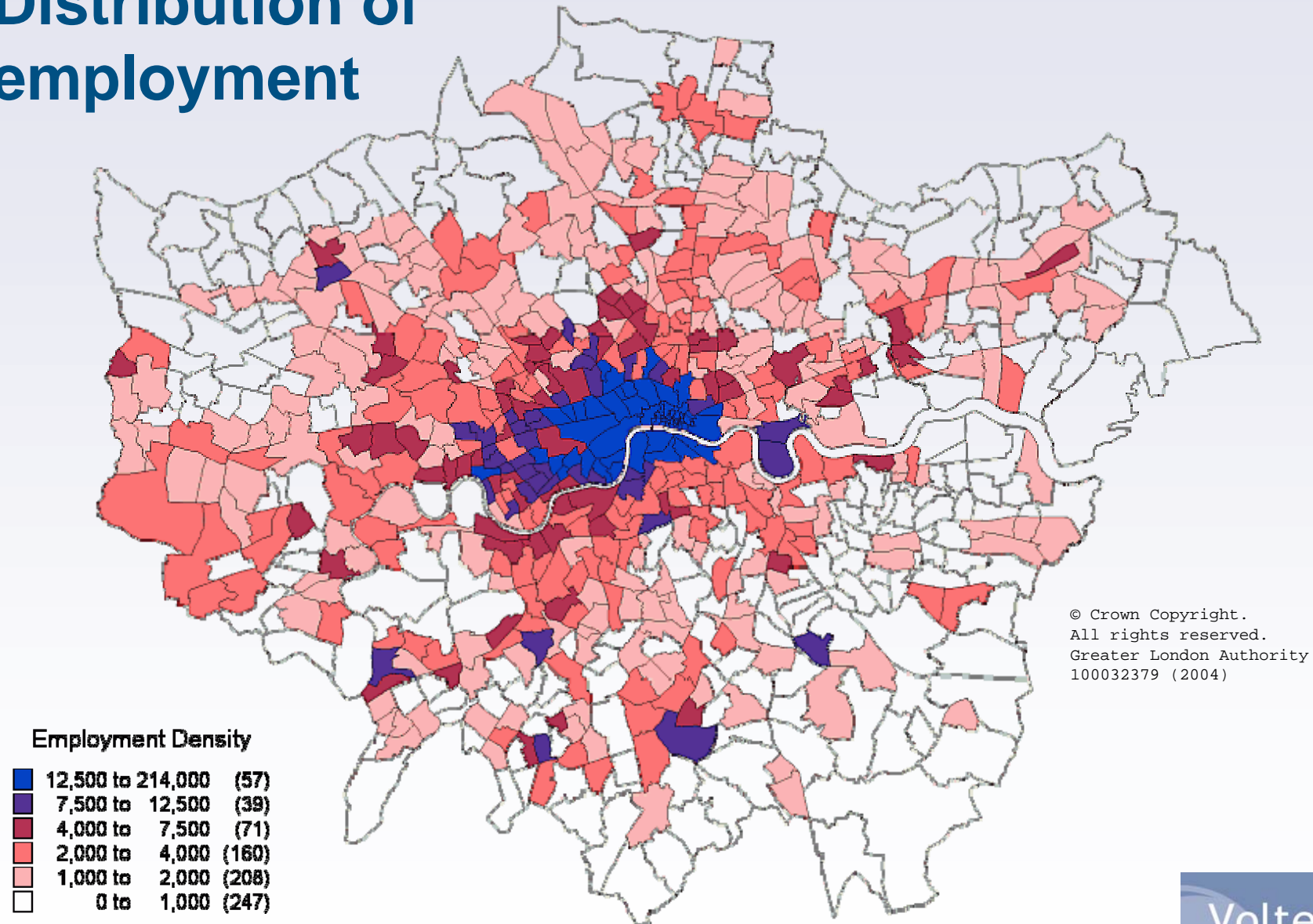
27 June 2005

Volterra Consulting Ltd

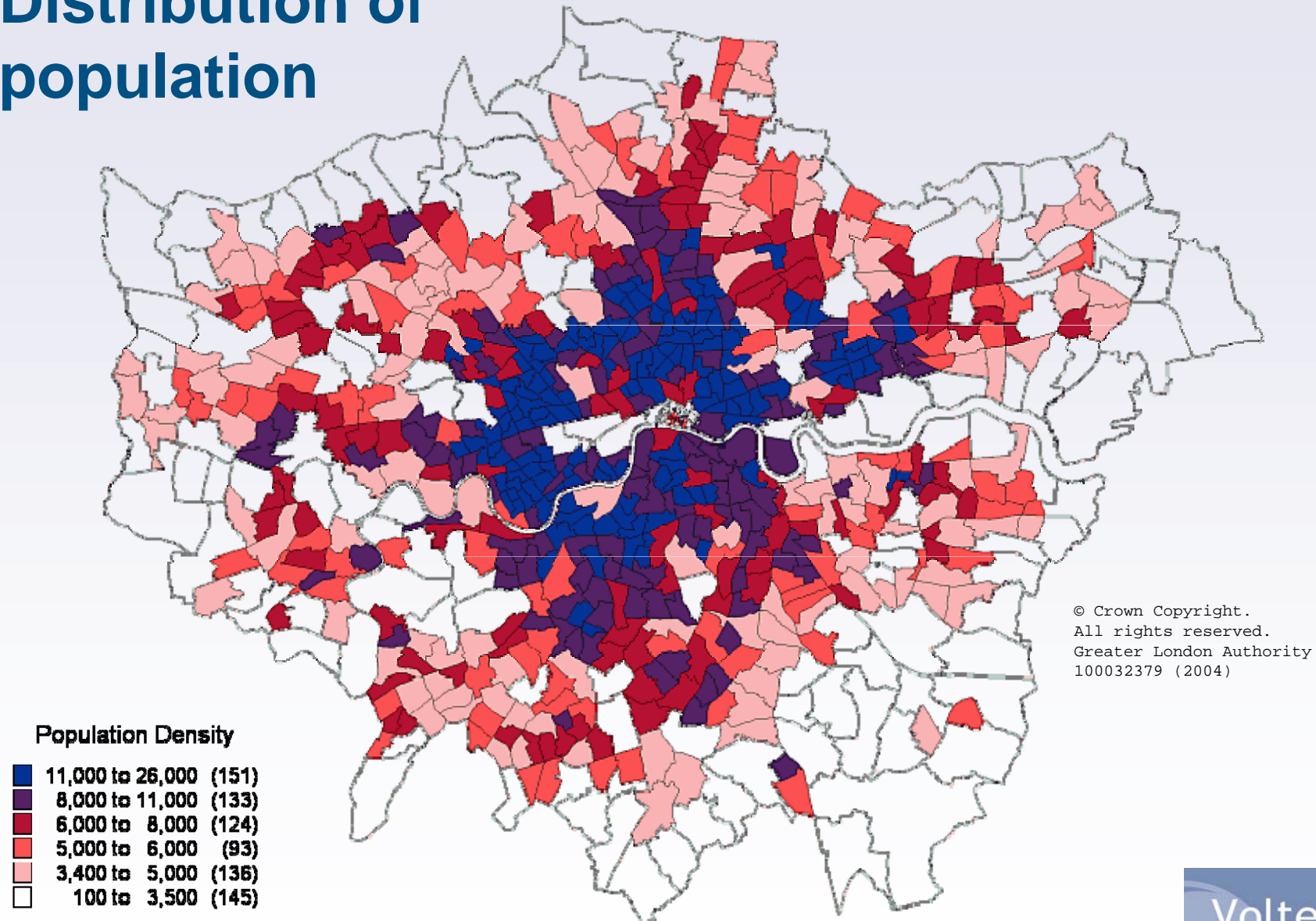
Introduction

- What drives employment growth?
- Study across Greater London of three-way interaction between
 - Employment
 - Population
 - Accessibility
- Used a ward geography – 782 areas in London

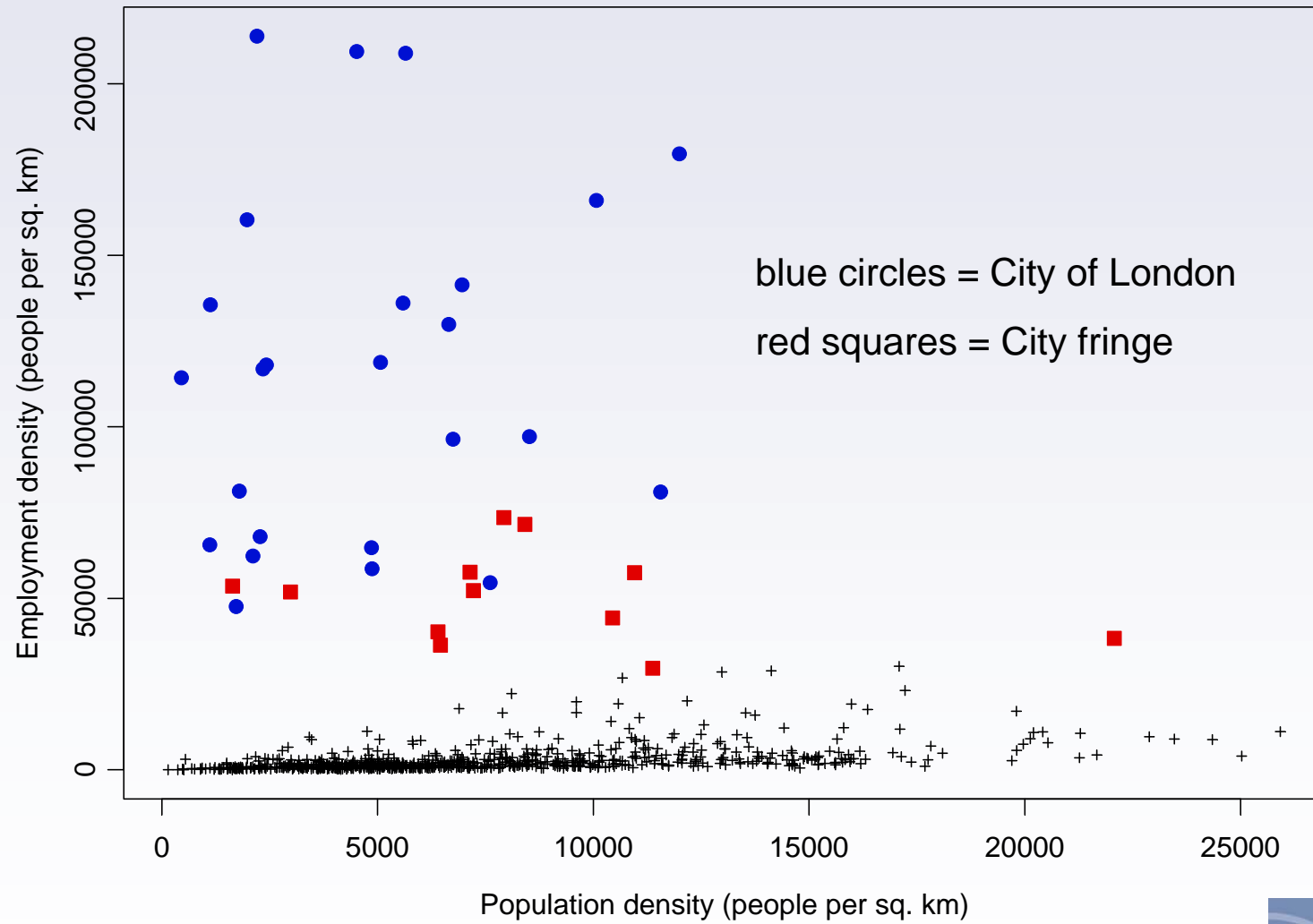
Distribution of employment



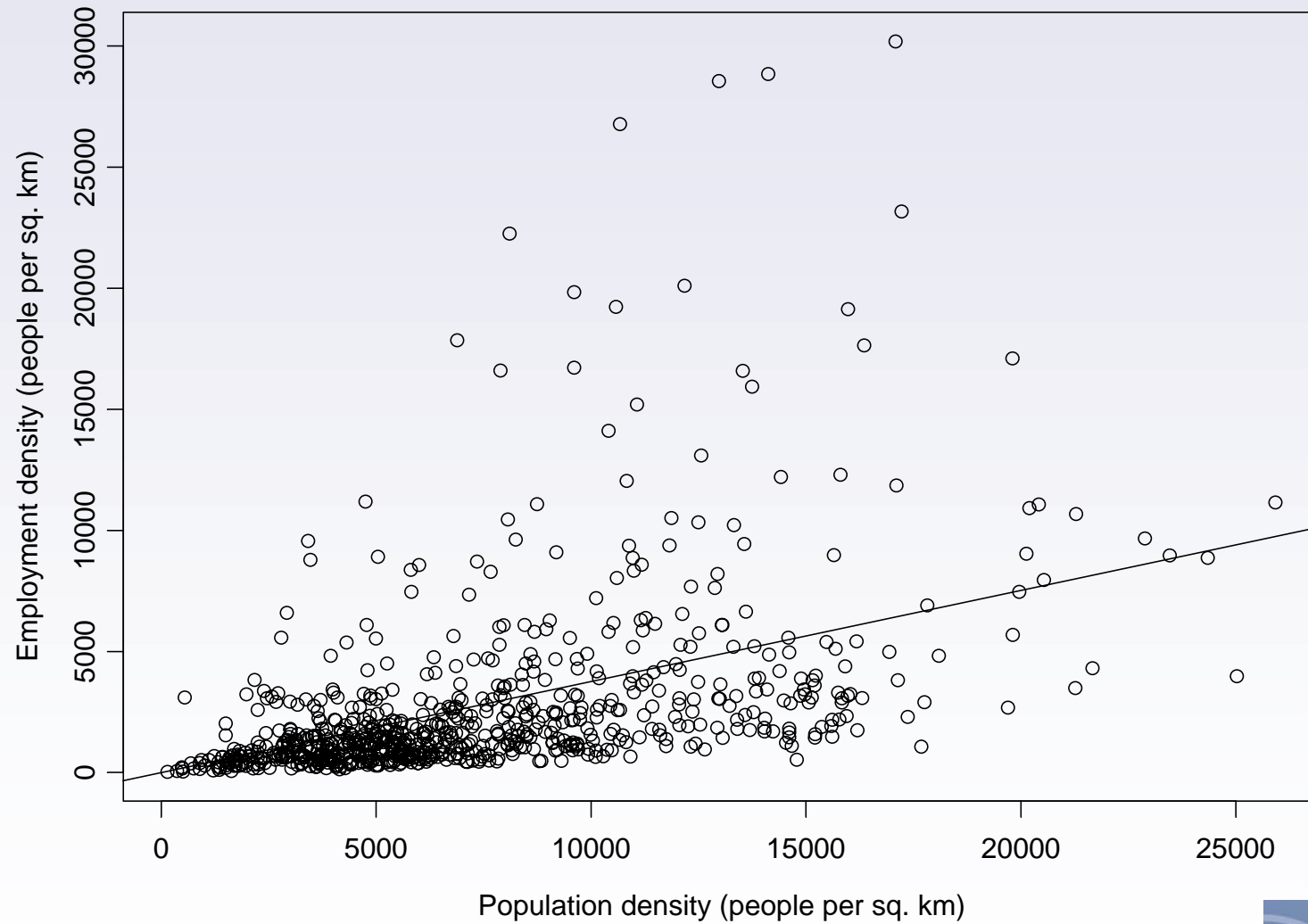
Distribution of population



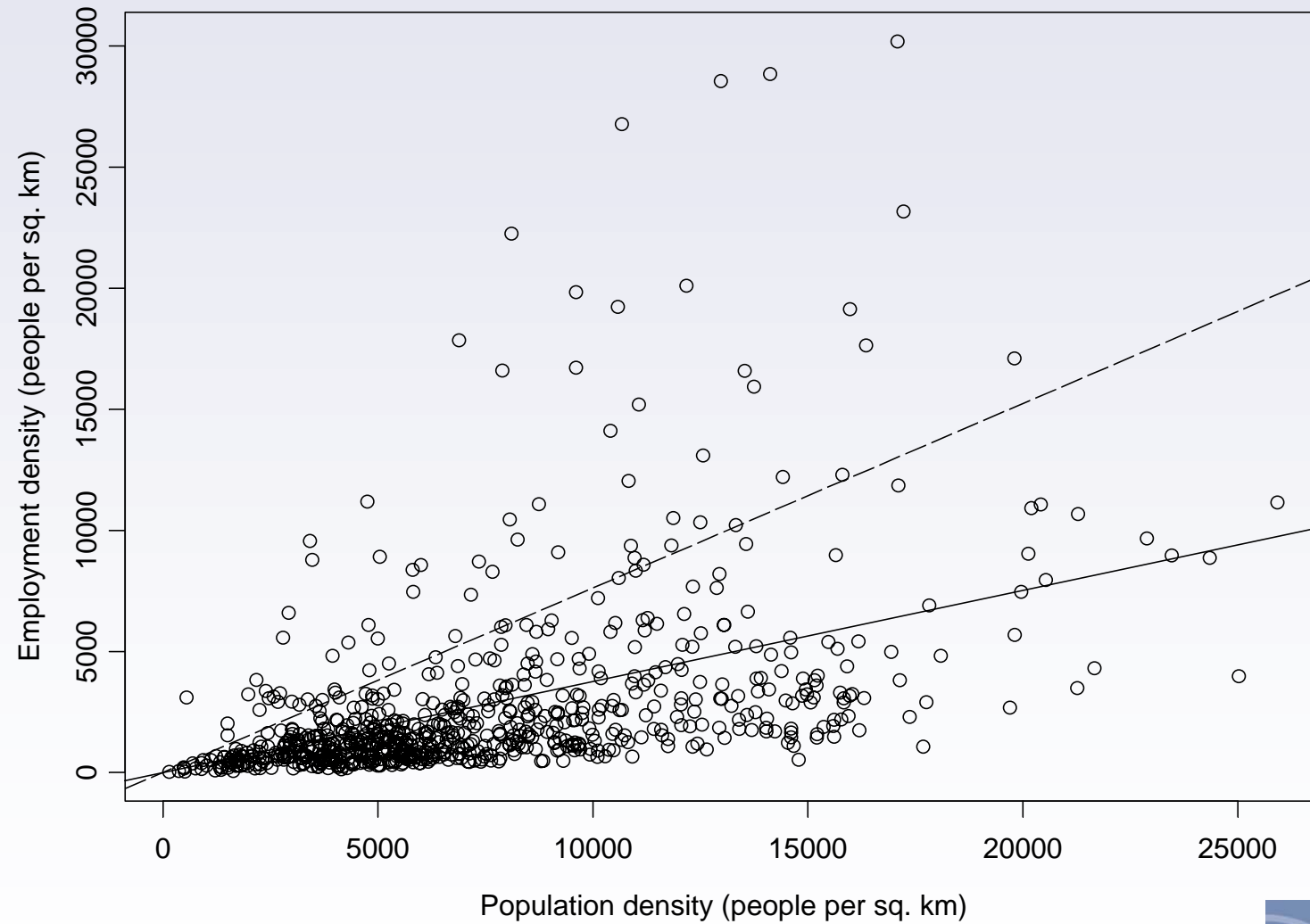
Removing the City



Employment and population relationship



Reversing causality



Which coefficient?

- Using population to predict employment:

$$\text{Emp. density} = 0.38 \times \text{pop. density}$$

- Using employment to predict population:

$$\text{Emp. density} = 0.76 \times \text{pop. density}$$

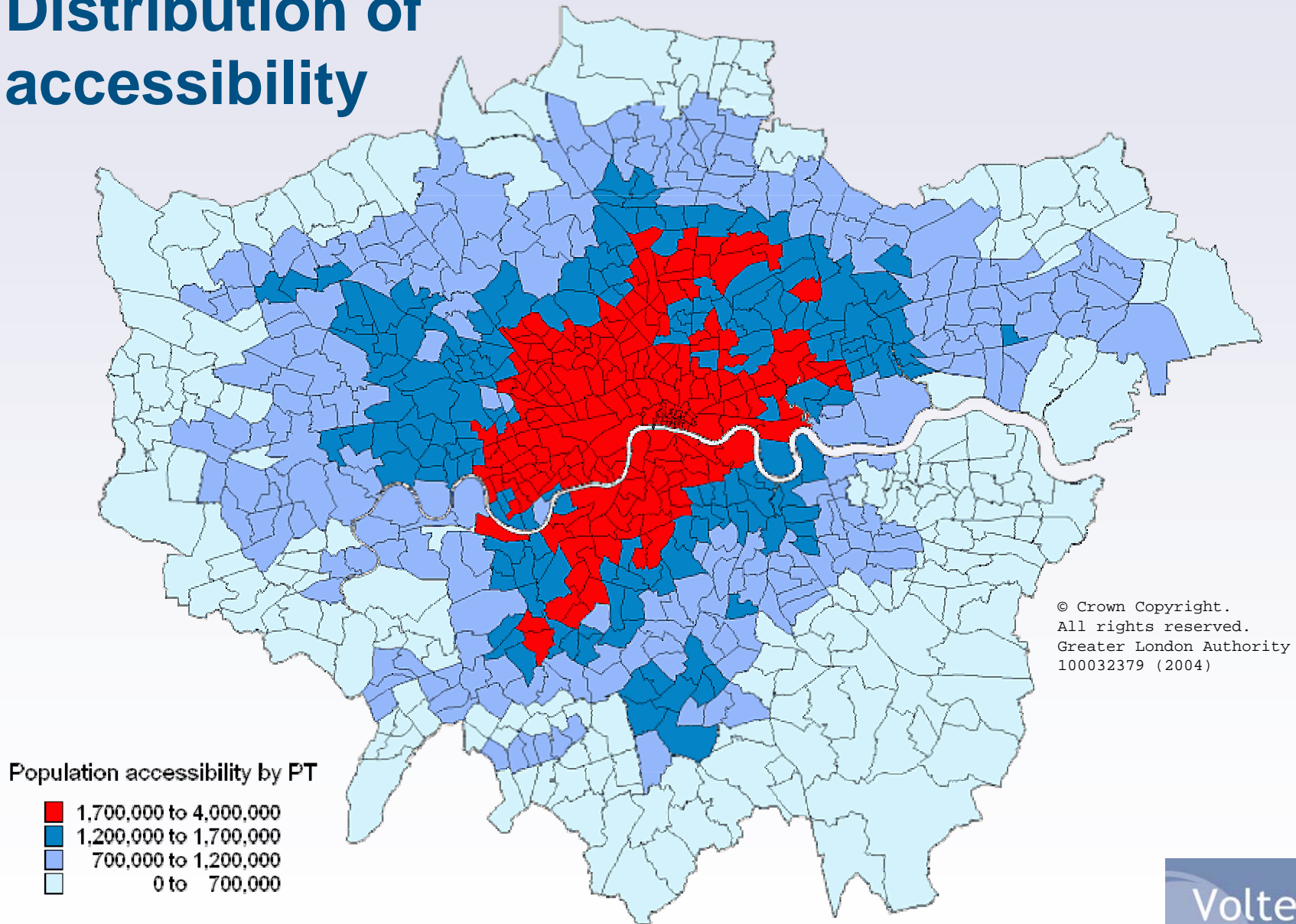
- Using 'robust' estimation technique:

$$\text{Emp. density} = 0.27 \times \text{pop. density}$$

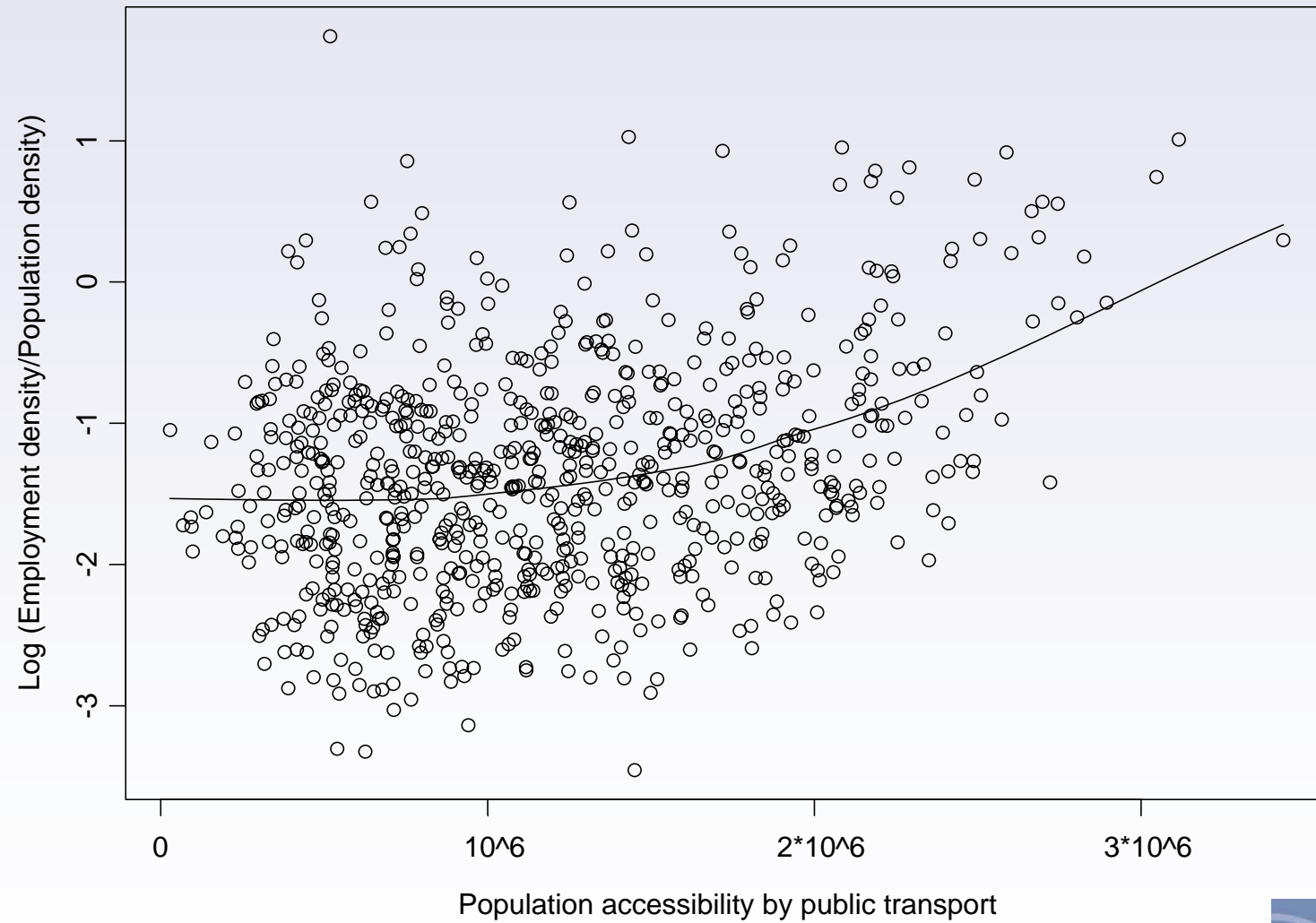
The missing variable – accessibility

- 80 – 90% of Central London employment reached by public transport
- Introduce accessibility variable:
 - 45 minute population catchment, by PT
- Look to compare:
 - (employment/population) v PT accessibility

Distribution of accessibility



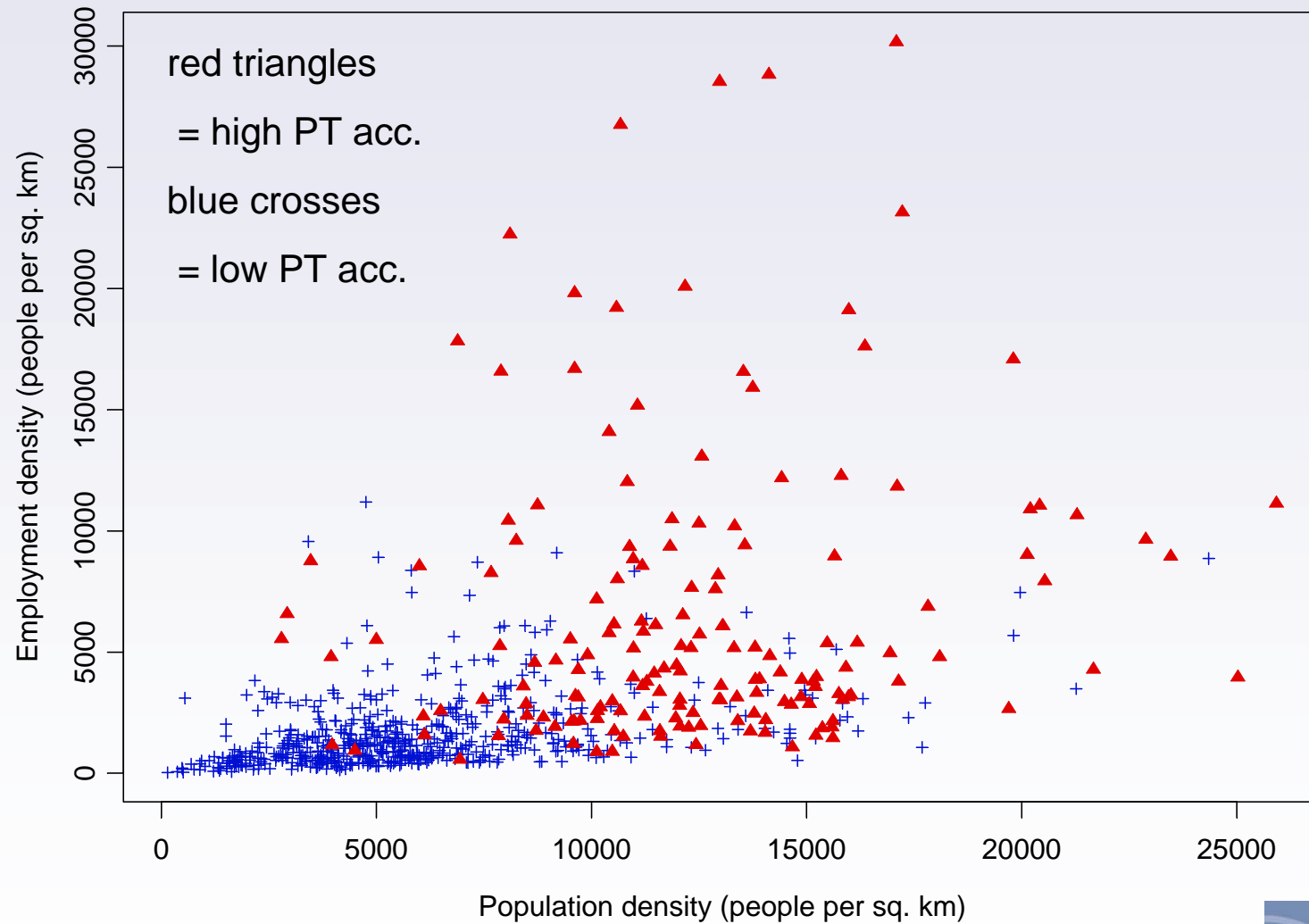
The interaction of accessibility



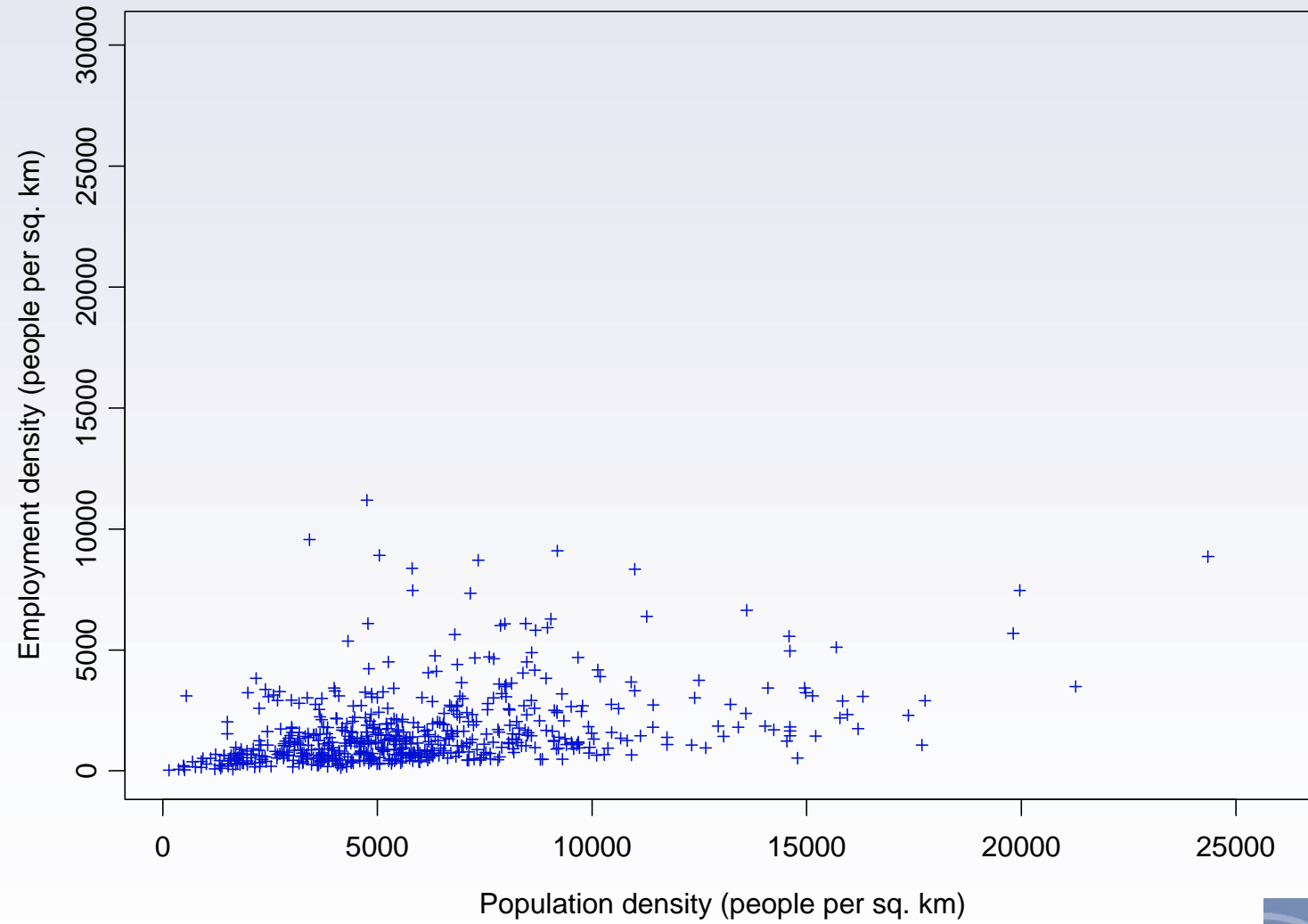
Dividing London

- We divide London into 2 areas
 - High accessibility ($> 1.7\text{m}$ people accessible by PT)
 - Low accessibility ($< 1.7\text{m}$ people accessible by PT)
- Look to explain employment density separately in high and low accessibility areas

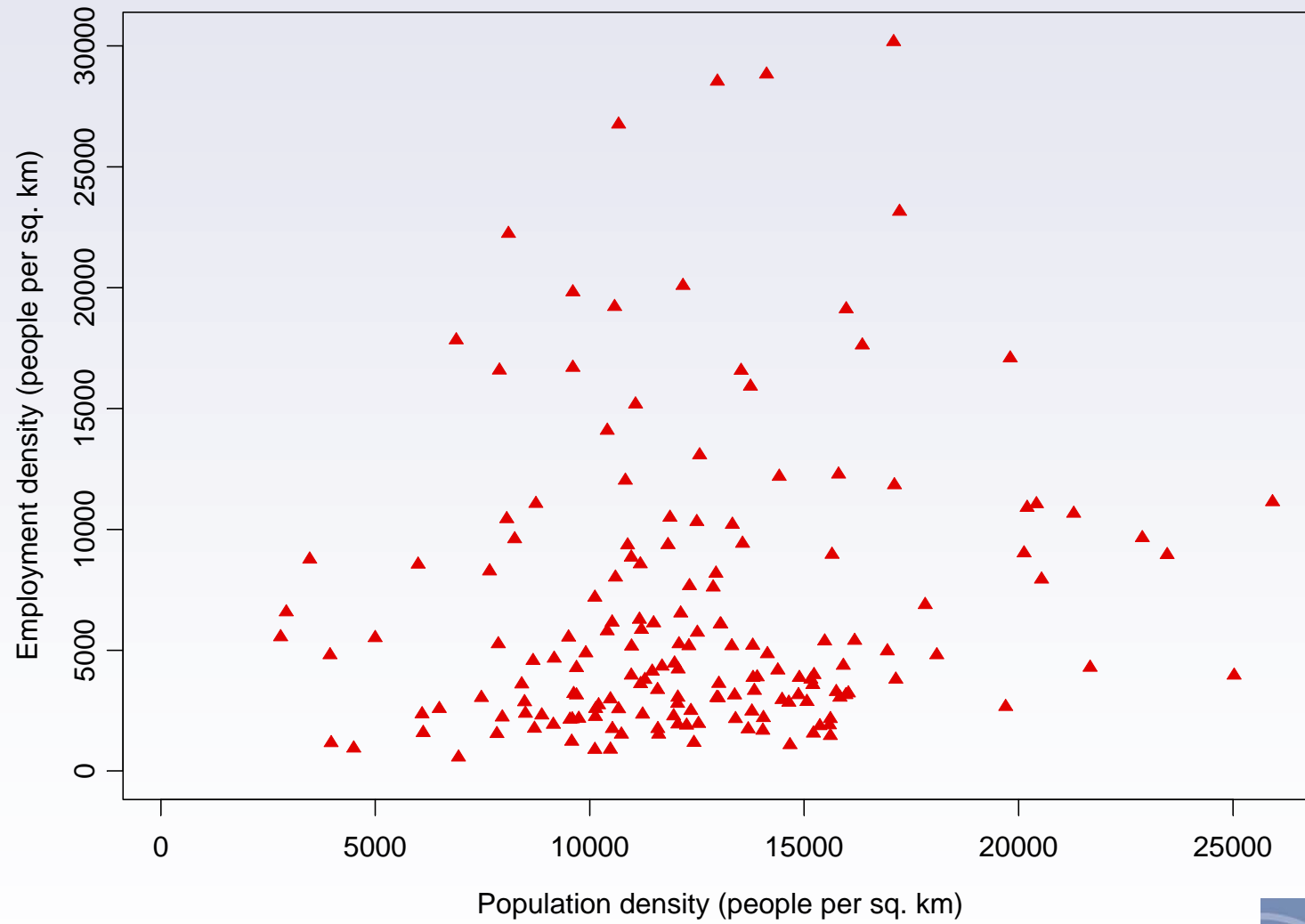
Employment and population revisited



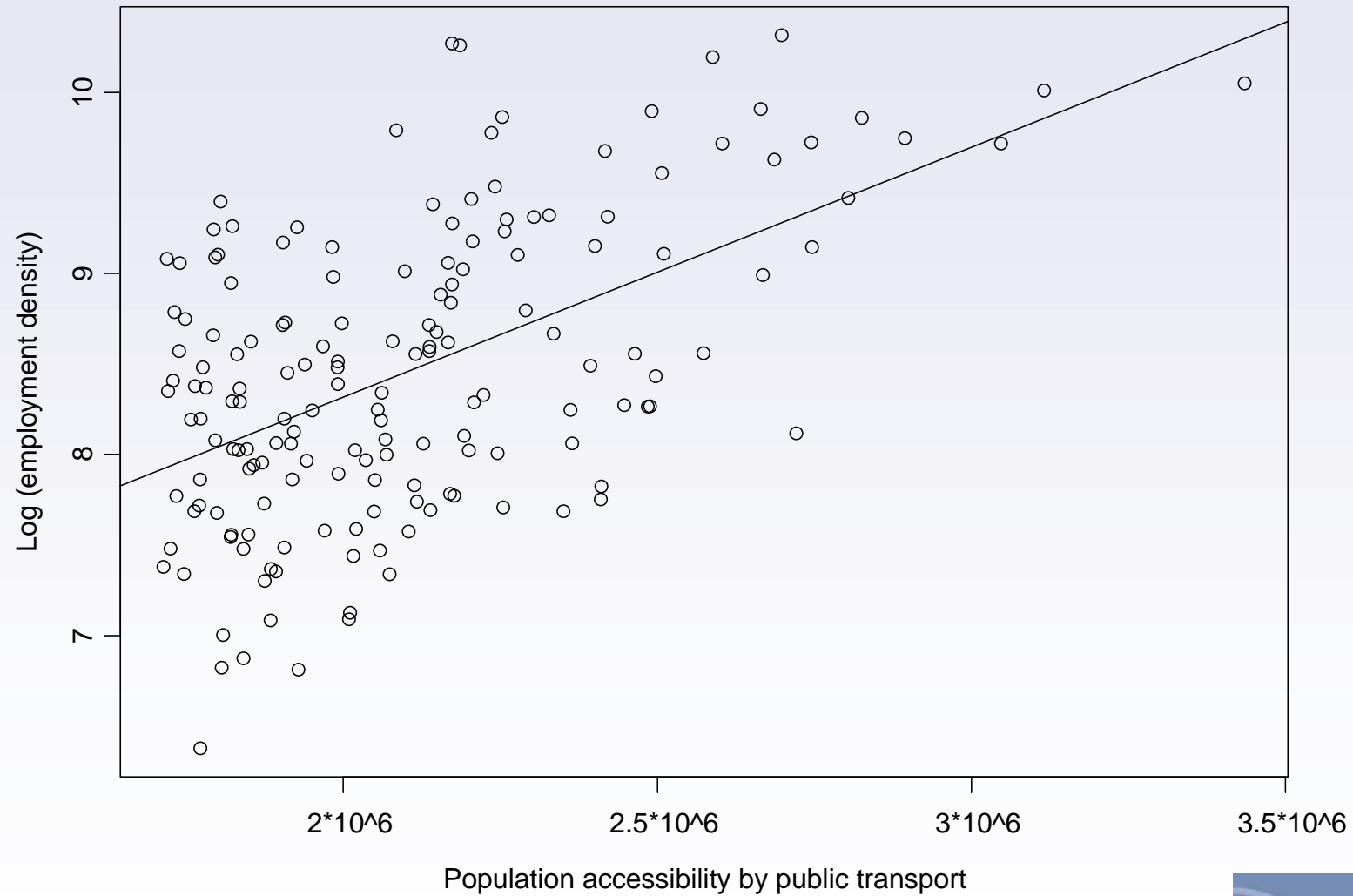
Low PT accessibility areas



High PT accessibility areas



Accessibility and employment, for high accessibility areas



Emp. v pop. for Outer London

- Use population to explain employment for low PT accessibility areas:

$$\text{Emp. density} = 0.23 \times \text{pop. density}$$

- In low PT accessibility areas of Outer London:

For each 1000 population in small area, on average 230 associated jobs in the locality

- However, exercise caution! *Average* estimate. Only 1/3 of these wards actually between 160 and 310