# The broadband speed gap in Glasgow

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# Outline

Broadband

Why Glasgow?

Data

Speed differences across Glasgow

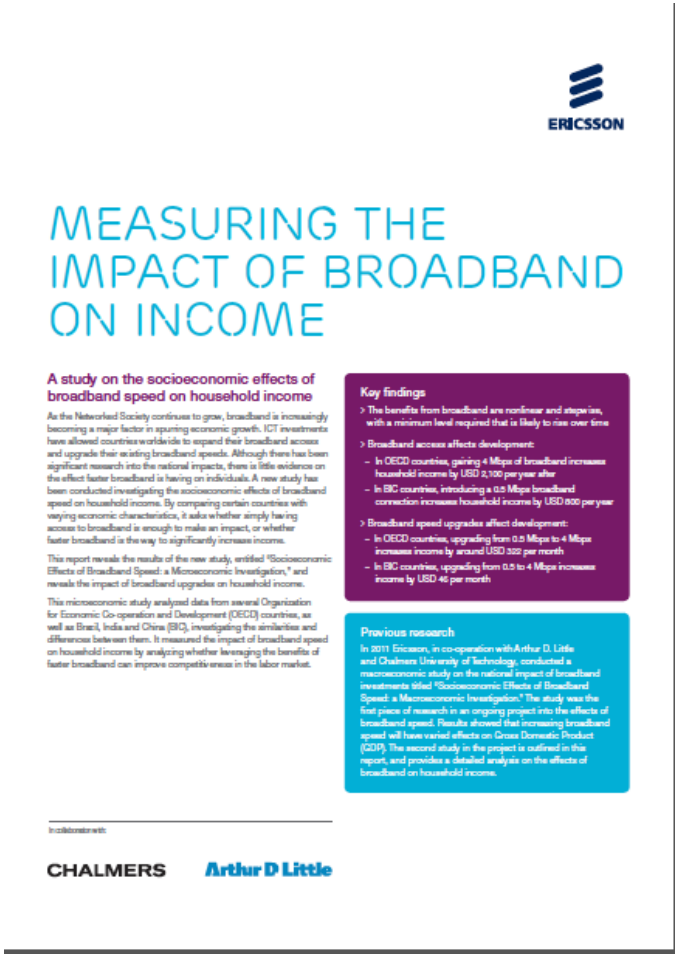
Conclusions

# Broadband is good for you!

Wide range of benefits identified in the literature

- An industry in its own right and facilitator of other activity
- Significant economic benefits associated with broadband. E.g.:
  - Tackling the white spaces in Thames valley would generate GVA of £1.2 bn over 5 to 7 years
  - Reduced unemployment identified in one US study
  - Environmental benefits through less travel estimated at £270m per yr in UK

# Faster broadband is better still!


ERICSSON

MEASURING THE IMPACT OF BROADBAND ON INCOME

A study on the socioeconomic effects of broadband speed on household income

As the Networked Society continues to grow, broadband is increasingly becoming a major factor in spurring economic growth. ICT investments have allowed countries worldwide to expand their broadband access and upgrade their existing broadband speeds. Although there has been significant research into the national impacts, there is little evidence on the effect faster broadband is having on individuals. A new study has been conducted investigating the socioeconomic effects of broadband speed on household income. By comparing certain countries with varying economic characteristics, it asks whether simply having access to broadband is enough to make an impact, or whether faster broadband is the way to significantly increase income.

This report reveals the results of the new study, entitled "Socioeconomic Effects of Broadband Speed: a Microeconomic Investigation," and reveals the impact of broadband upgrades on household income.

This microeconomic study analyzed data from several Organization for Economic Co-operation and Development (OECD) countries, as well as Brazil, India and China (BIC), investigating the similarities and differences between them. It measured the impact of broadband speed on household income by analyzing whether leveraging the benefits of faster broadband can improve competitiveness in the labor market.

Key findings

> The benefits from broadband are nonlinear and stepwise, with a minimum level required that is likely to rise over time

> Broadband access affects development:

– In OECD countries, gaining 4 Mbps of broadband increases household income by USD 2,100 per year after

– In BIC countries, introducing a 0.5 Mbps broadband connection increases household income by USD 600 per year

> Broadband speed upgrades affect development:

– In OECD countries, upgrading from 0.5 Mbps to 4 Mbps increases income by around USD 320 per month

– In BIC countries, upgrading from 0.5 to 4 Mbps increases income by USD 46 per month

Previous research

In 2011 Ericsson, in co-operation with Arthur D. Little and Chalmers University of Technology, conducted a macroeconomic study on the national impact of broadband investments titled "Socioeconomic Effects of Broadband Speed: a Macroeconomic Investigation." The study was the first piece of research in an ongoing project into the effects of broadband speed. Results showed that increasing broadband speed will have varied effects on Gross Domestic Product (GDP). The second study in the project is outlined in this report, and provides a detailed analysis on the effects of broadband on household income.

In collaboration with

CHALMERS Arthur D Little

## Policy Exchange (2012)

- Faster connections enable enhanced simultaneous consumption, and/or facilitate innovative activity

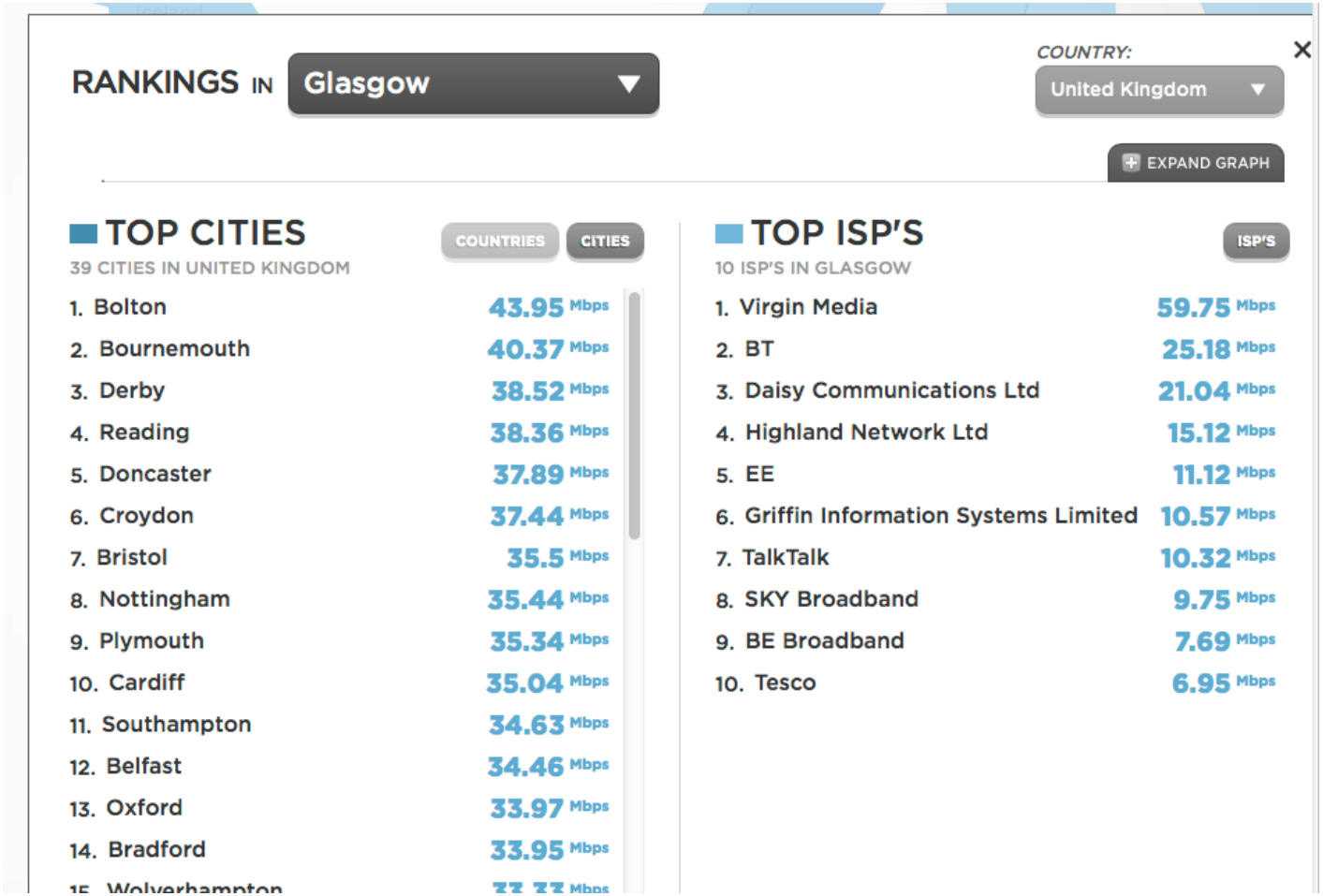
## Superfast Cornwall (2013)

- Superfast broadband saved 80% of users time and/or money

## Ahlfedt et al (2014)

- Found a relationship between house prices and broadband speeds

# Broadband speeds within the UK




*Source:* Net Index (http://explorer.netindex.com/maps), accessed 20 June 2014

# Why Glasgow?

- Stagnating levels of broadband adoption.
- The availability of data, for deprivation and broadband.
- Pragmatic – we know the city.

# Data

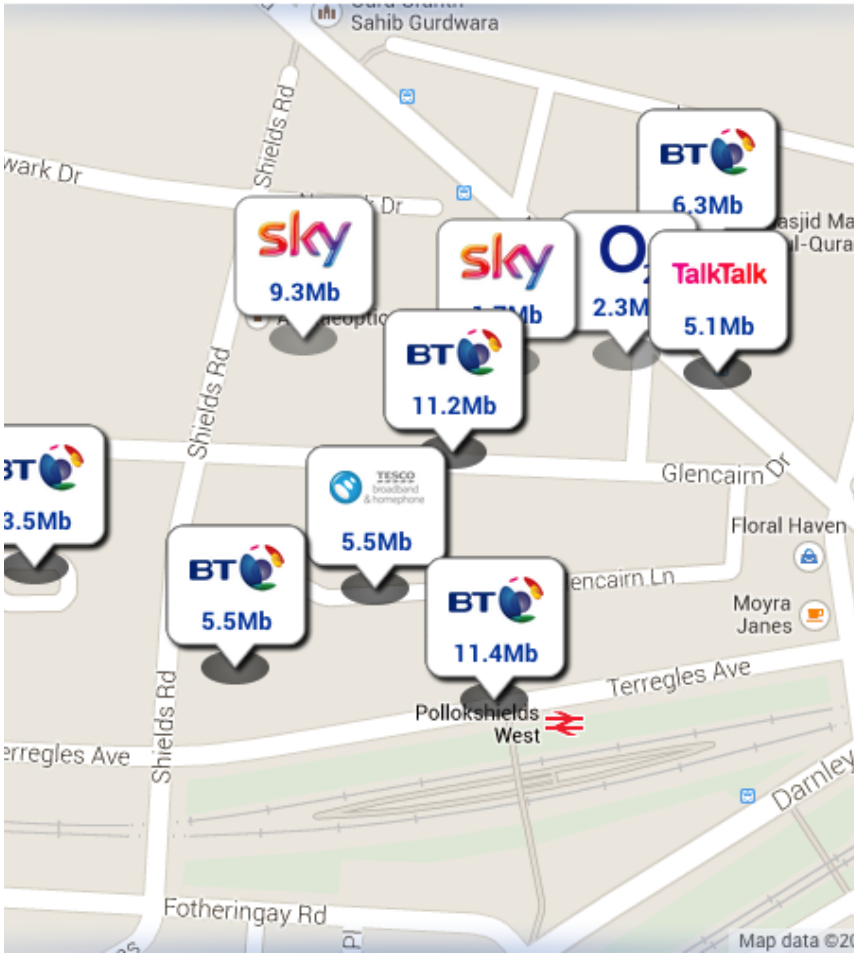
## uSwitch

- A comparison website

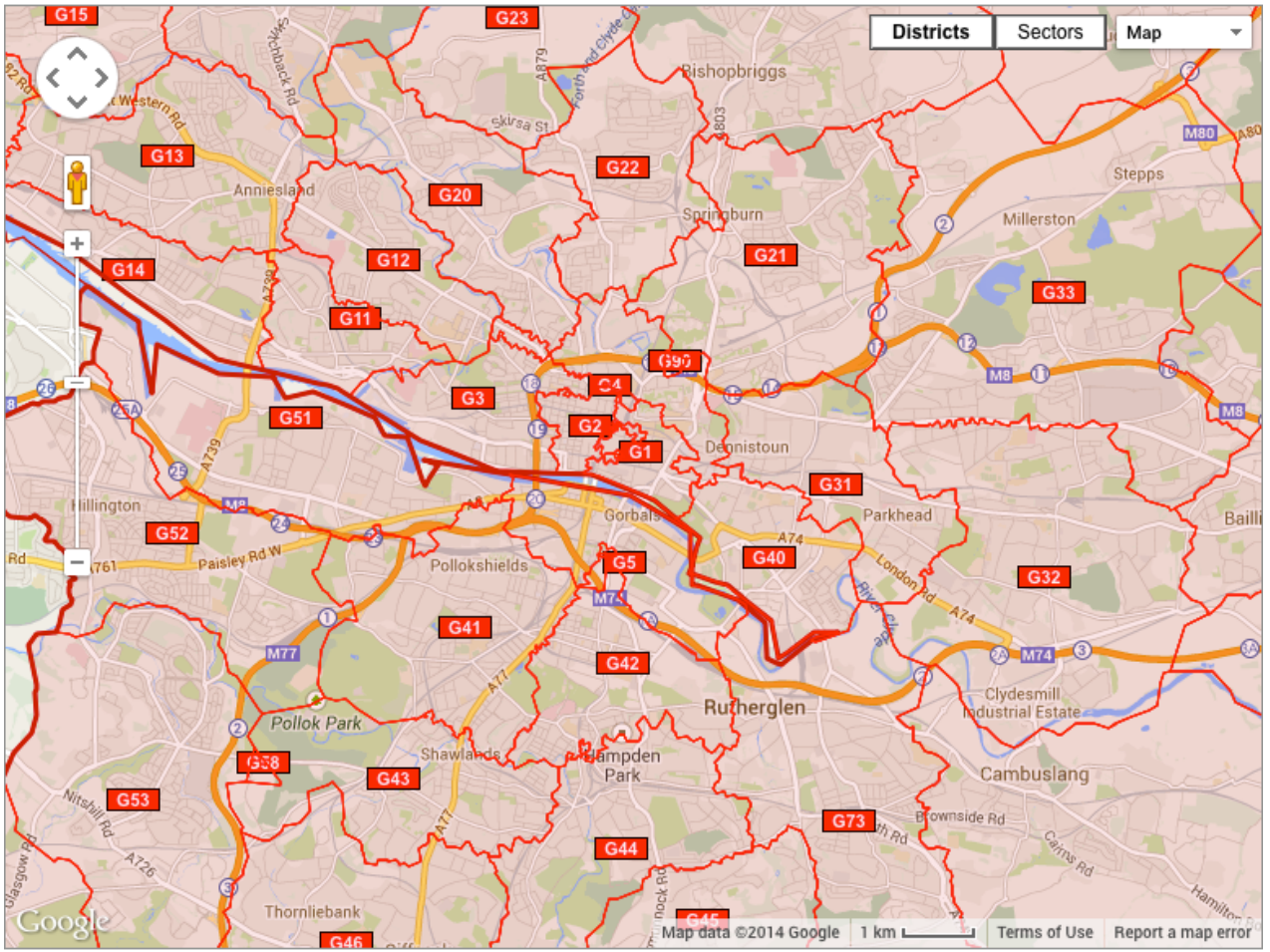
## Variables collected for each test

- Speed – upload and download in Mbps
- Exchange
- Location - part of the post code (G41 4** *not* G41 4QN)
- Service provide
- Distance to the exchange in metres
- Date undertaken

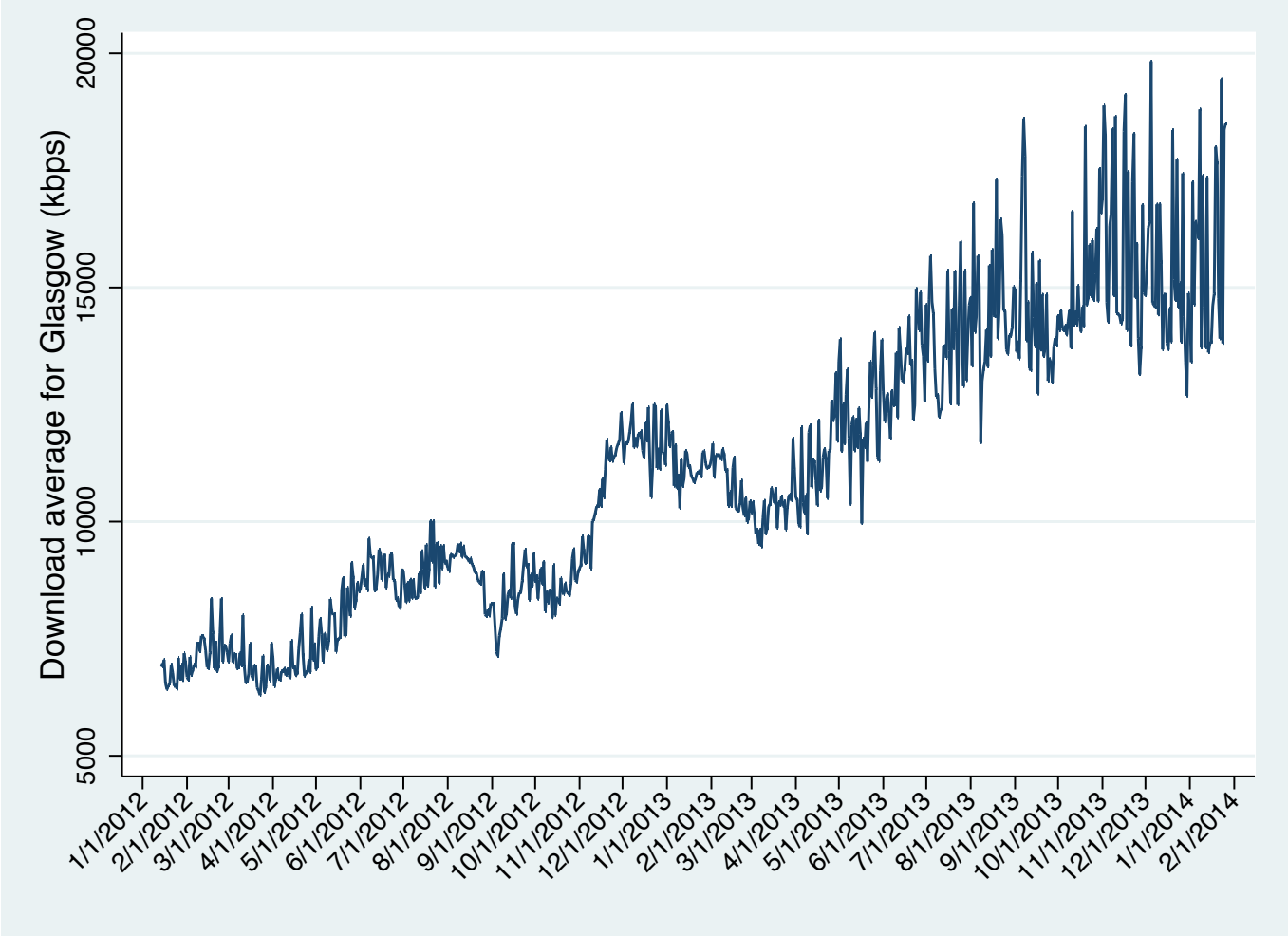
## Scottish Index of Multiple Deprivation



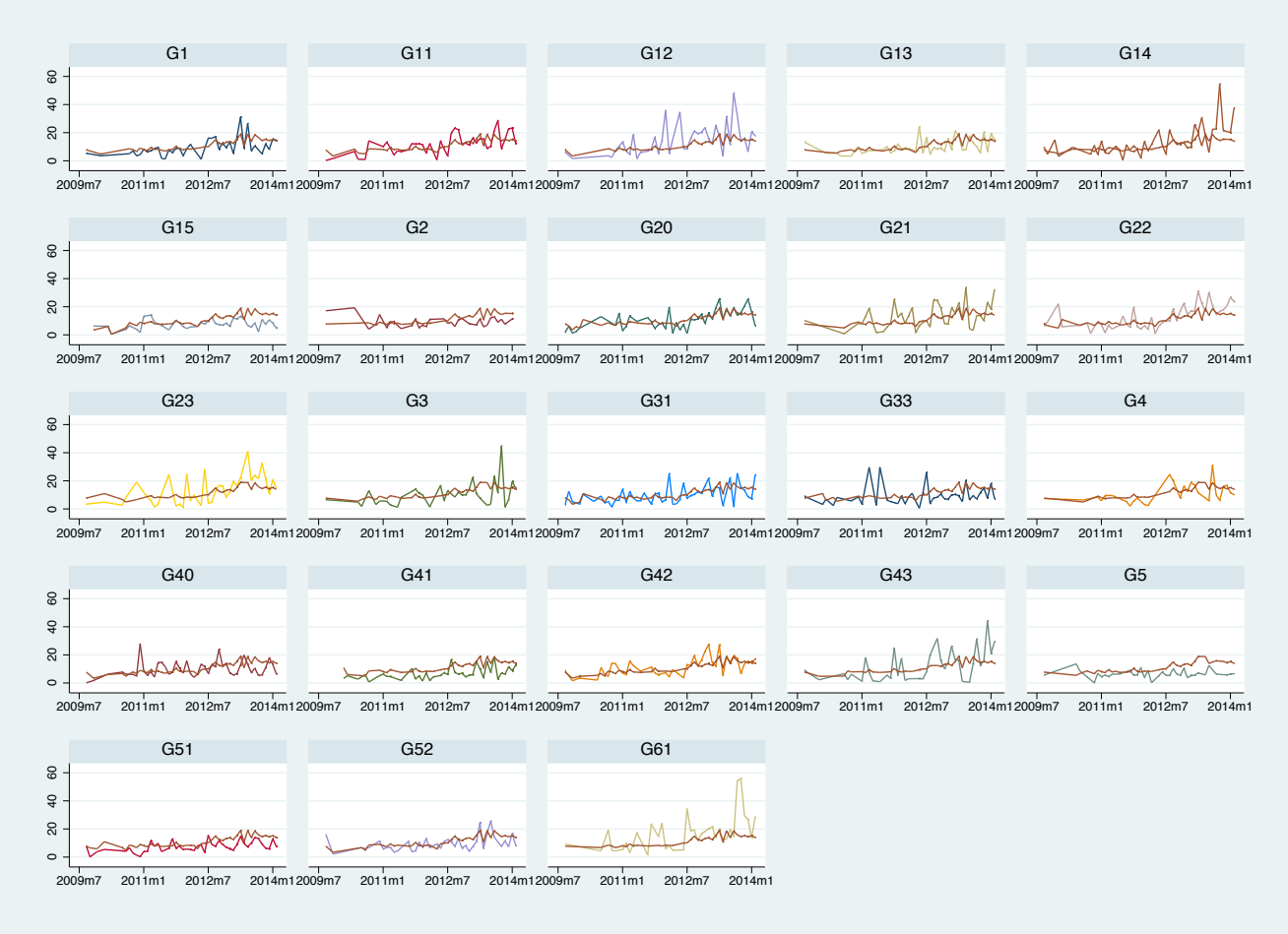
# Postcodes in Glasgow



# Daily average broadband download speeds, Jan 2012 to Jan 2014



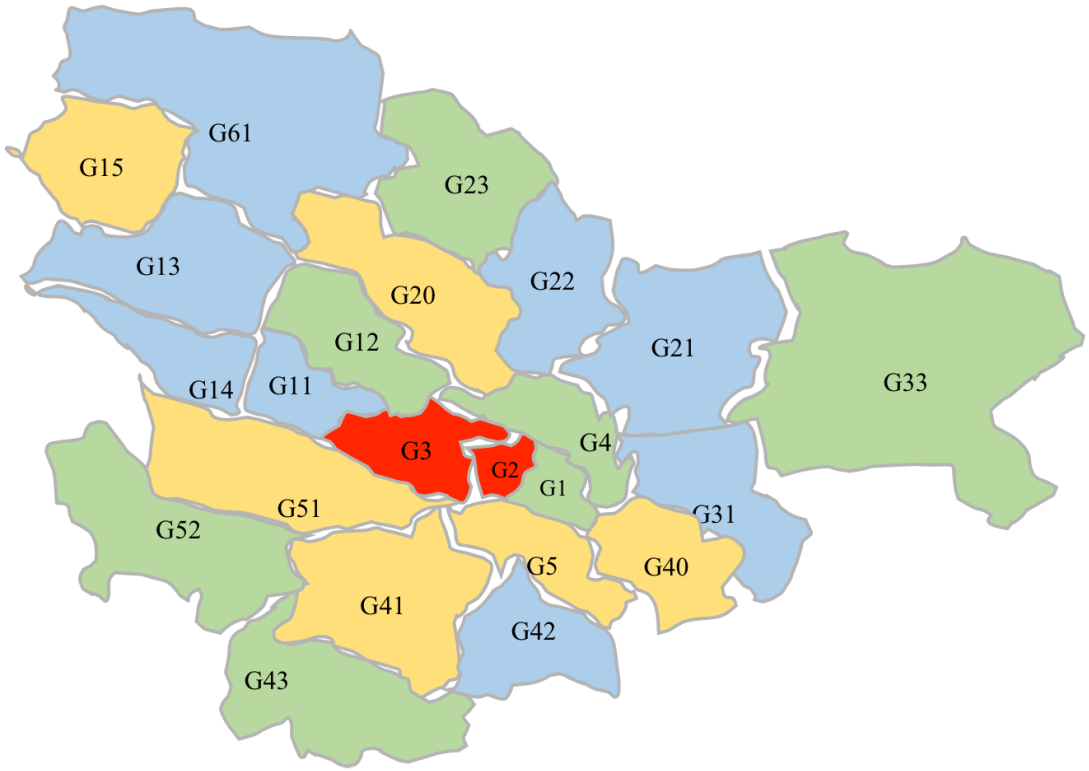
# Average download speeds by postcode cf. Glasgow average, 2009 - 2014



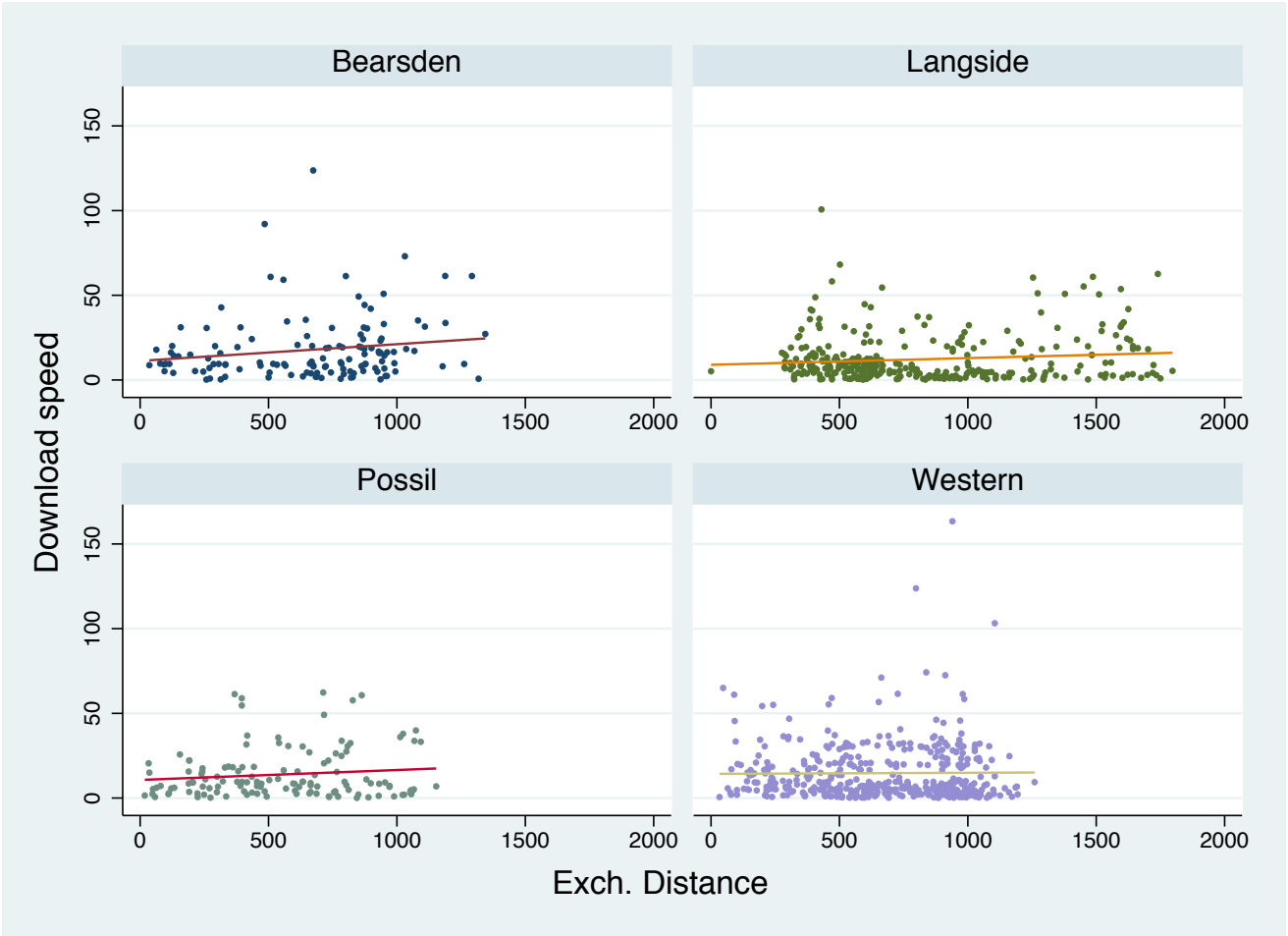
# Which postcodes have improved relative to the average for Glasgow, 2009 – 2014?

Start / end of period

- Above / above
- Above / below
- Below / above
- Below / below



# Broadband speed in Mbps by distance from telephone exchange: Bearsden, Langside, Possil, Western



# Broadband and socio-economic issues

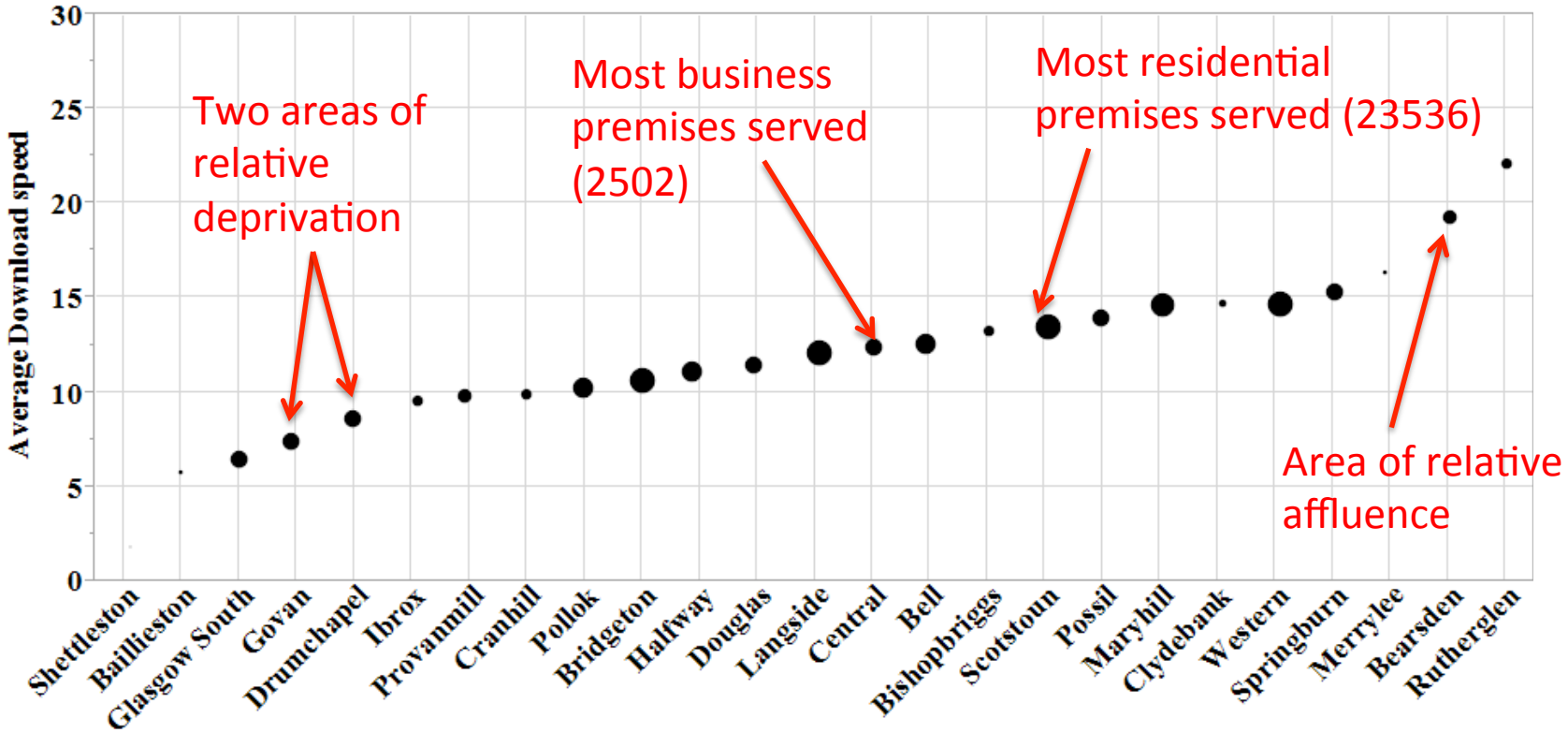
Mapping SMID data onto broadband is not straight forward

- Data zones ≠ postcodes
- Mean SMID used. Results need to be treated with a degree of caution

We found that:

- Greater distance from the telephone exchange is associated with slower broadband speeds
- Higher deprivation corresponds with slower broadband speeds – such as in G12 and G61
- Highest SIMD variation within G13, G14 and G15 associated with slower download speeds

# Average download speeds by telephone exchange in Mbps




Note - The larger the dot, the more observations there are

# Conclusion

A range of benefits are associated with broadband

Within Glasgow

- Average speeds have increased
- Considerable variation exists across the city
- Speeds decline as the distance from the exchange increases
- There is some evidence to suggest that deprived areas endure slower broadband speeds