Office for National Statistics
Swyddfa Ystadegau Gwladol

Small area deprivation dispersion: does its scale inform healthy life expectancy gaps?

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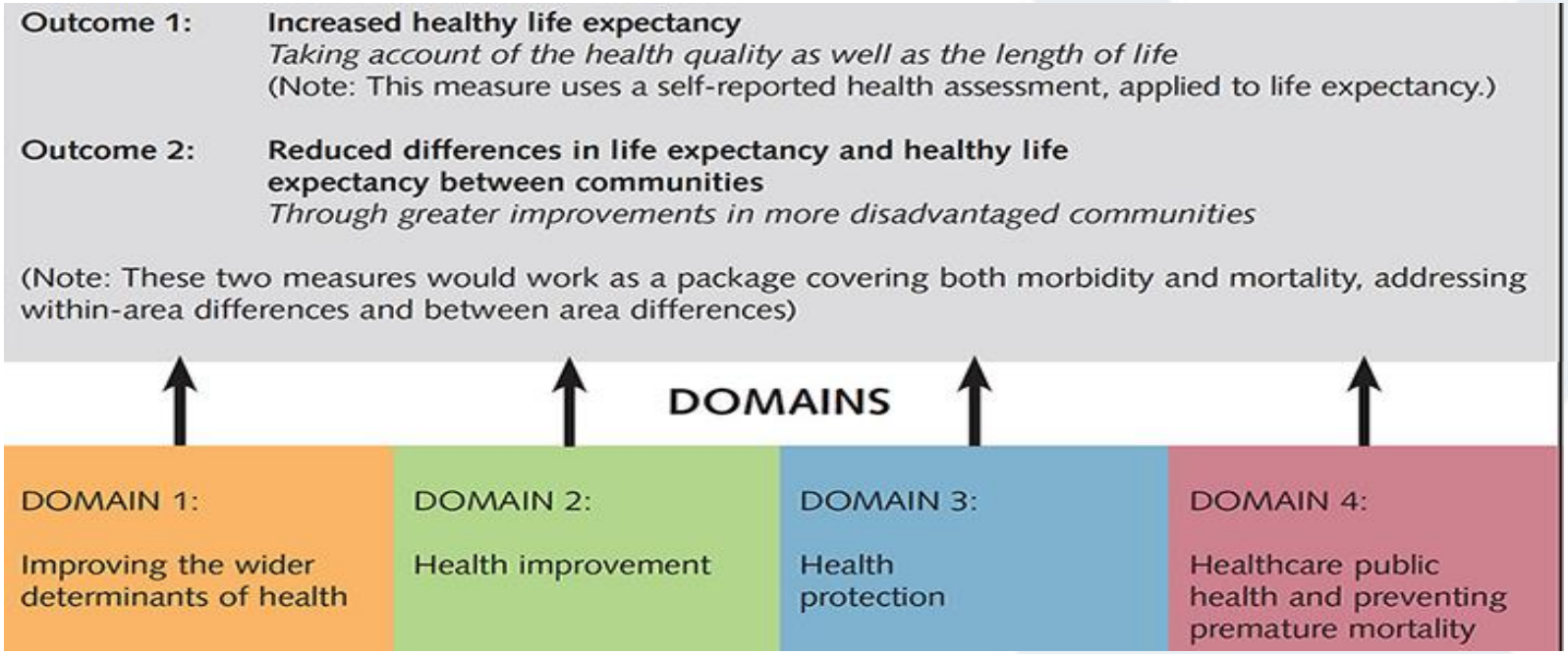
Rational

- **Public health commissioning role devolved to local authorities**
  - –Improve health for all
  - –Reduce health inequalities
  - –Protect health
- **Public health outcome framework (PHOF) outcomes:**



Objectives

1) Produce estimates of healthy life expectancy (HLE) at birth by all small areas in England

2) Inform the gap in HLE at birth among those living in most and least deprived small areas within the range of local authorities

Data & Methods (1)

➢**Small areas**

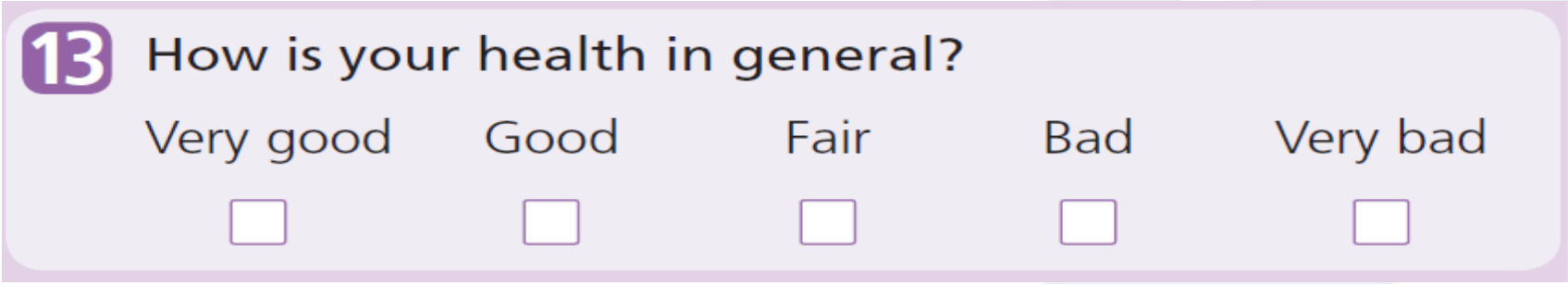
- 6,791 small areas (MSOAs) in England, with populations between 5000-15,000

➢ **Chiang II method**

- For period life expectancies at birth (0-4,5-9,…, 85+)
- Mortality and mid-year population estimates aggregated over 5 year period (2009 to 2013) , in order to mitigate a risk of implausible life expectancies at small areas.

➢**Sullivan method**

- Age specific self-reported general health data gathered from Census 2011.



Data & Methods (2)

➢ **Small Area Deprivation Measure – English IMD 2015 (7 Domains)**

DOMAINS	WEIGHT
Income	(22.5%)
Employment	(22.5%)
Education, skills and training	(13.5%)
Health and disability	(13.5%)
Barriers to housing and services	(9.3%)
Crime	(9.3%)
Living environment	(9.3%)

➢ **Measuring gap in healthy life expectancy - Slope index of inequality (SII)**

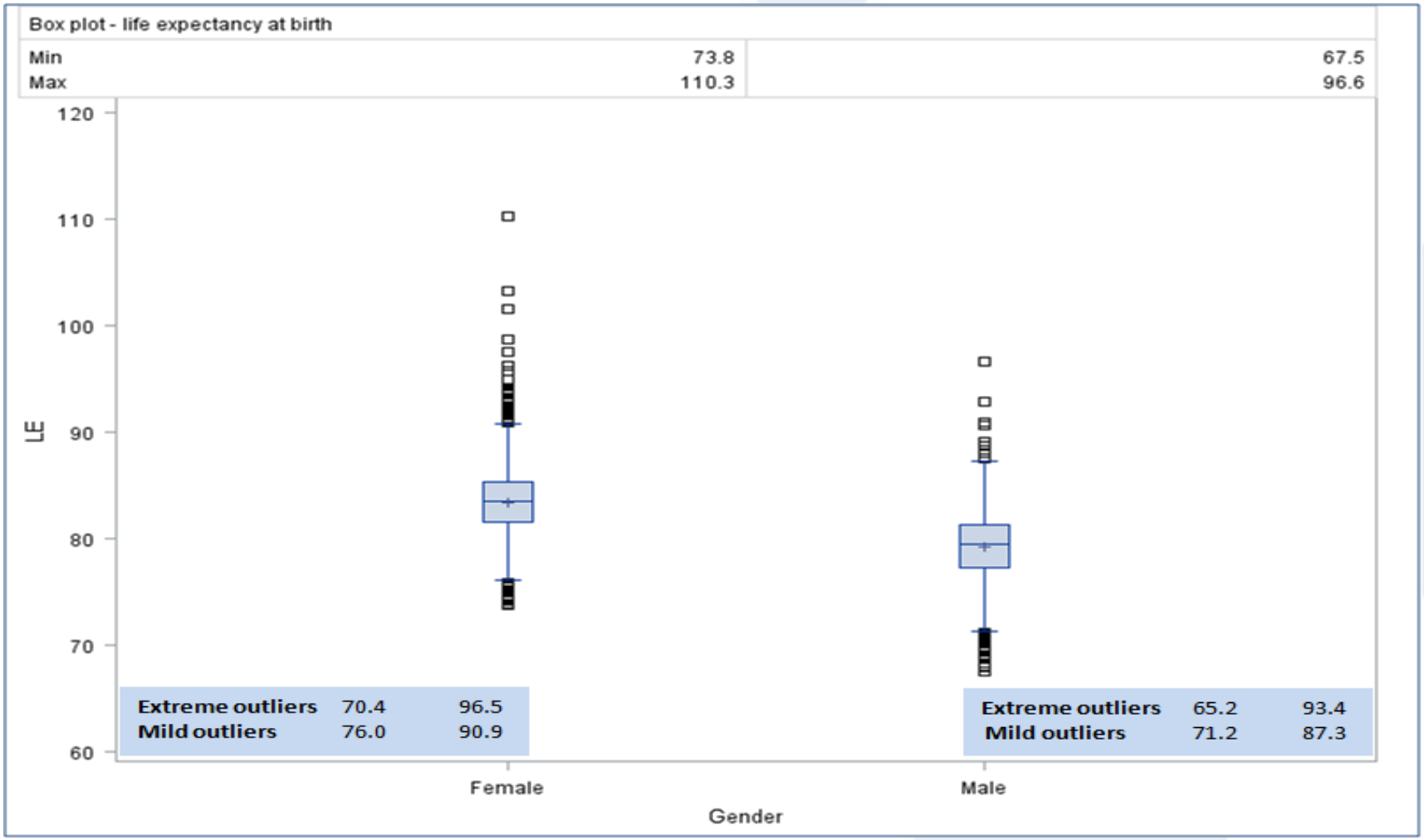
- Weighted for the population size
- Consider the order of areas by their relative deprivation
- Estimate gradient across whole sub-group of population – weighted linear regression

Results

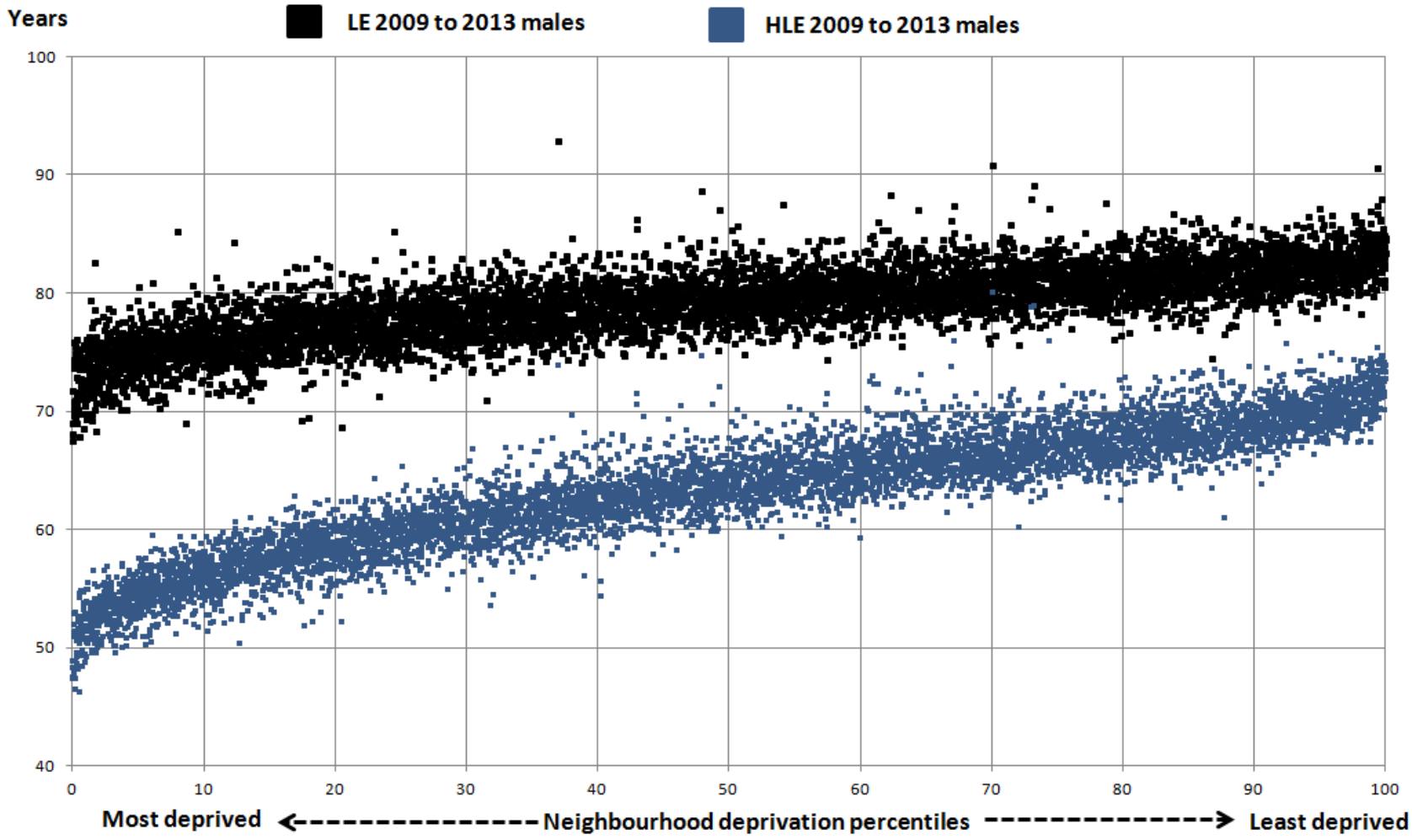
Objective 1

Healthy life expectancy at birth for small areas in England

Implausible life expectancies



Male LE and HLE at birth by their MSOAs deprivation ranking, most deprived to least deprived, 2009 to 2013, England

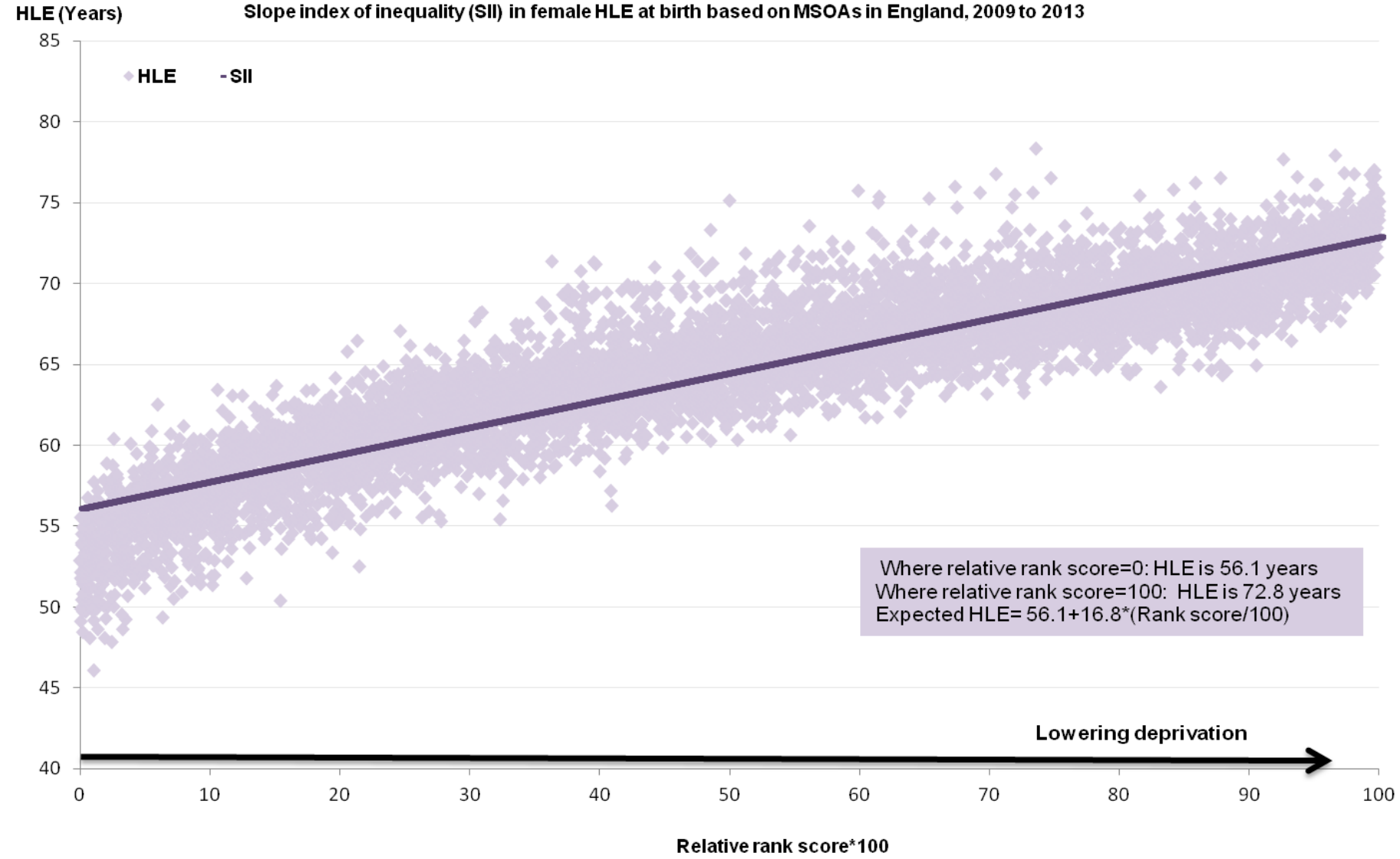


Results

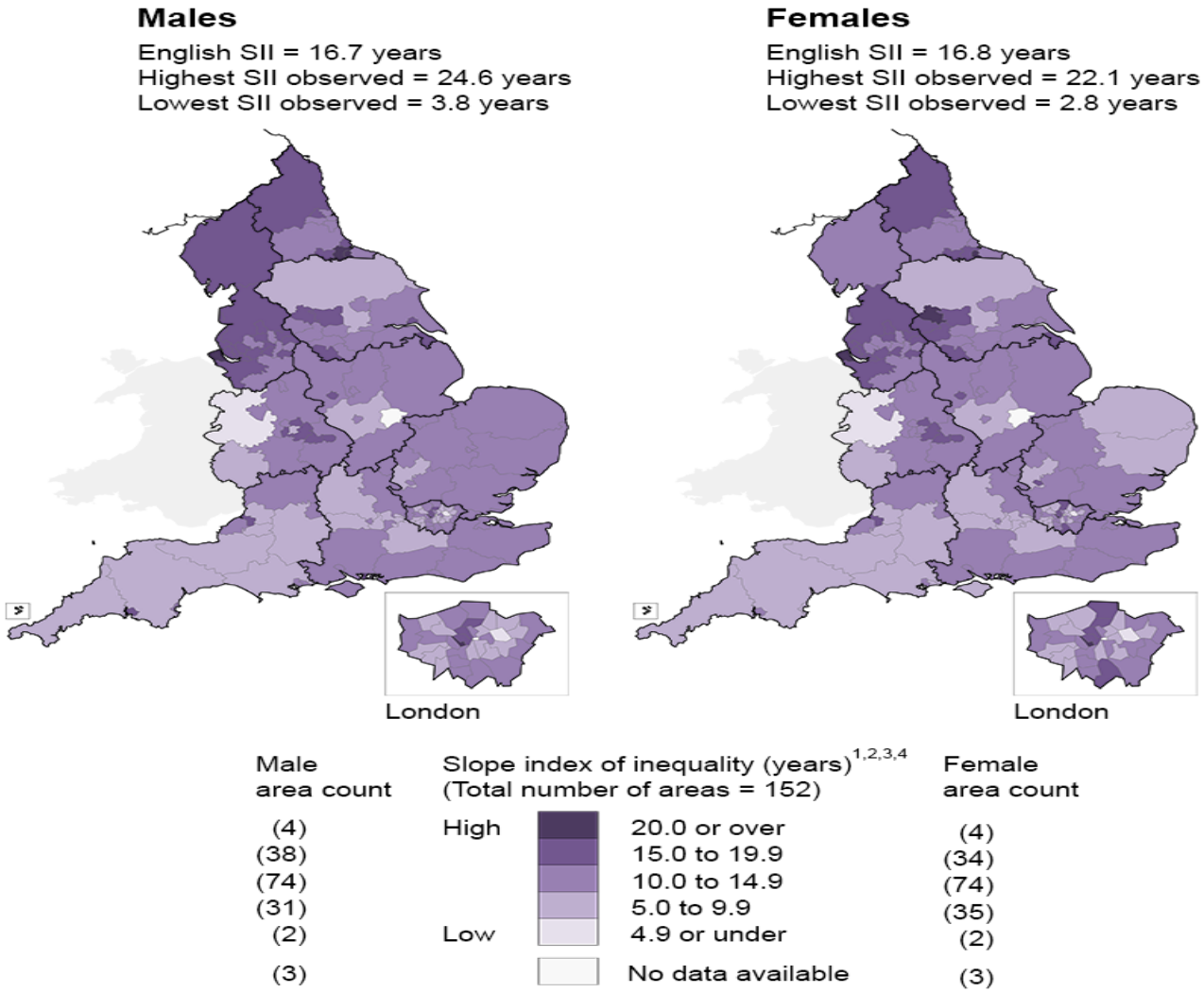
Objective 2

Measuring the inequalities in HLE at birth

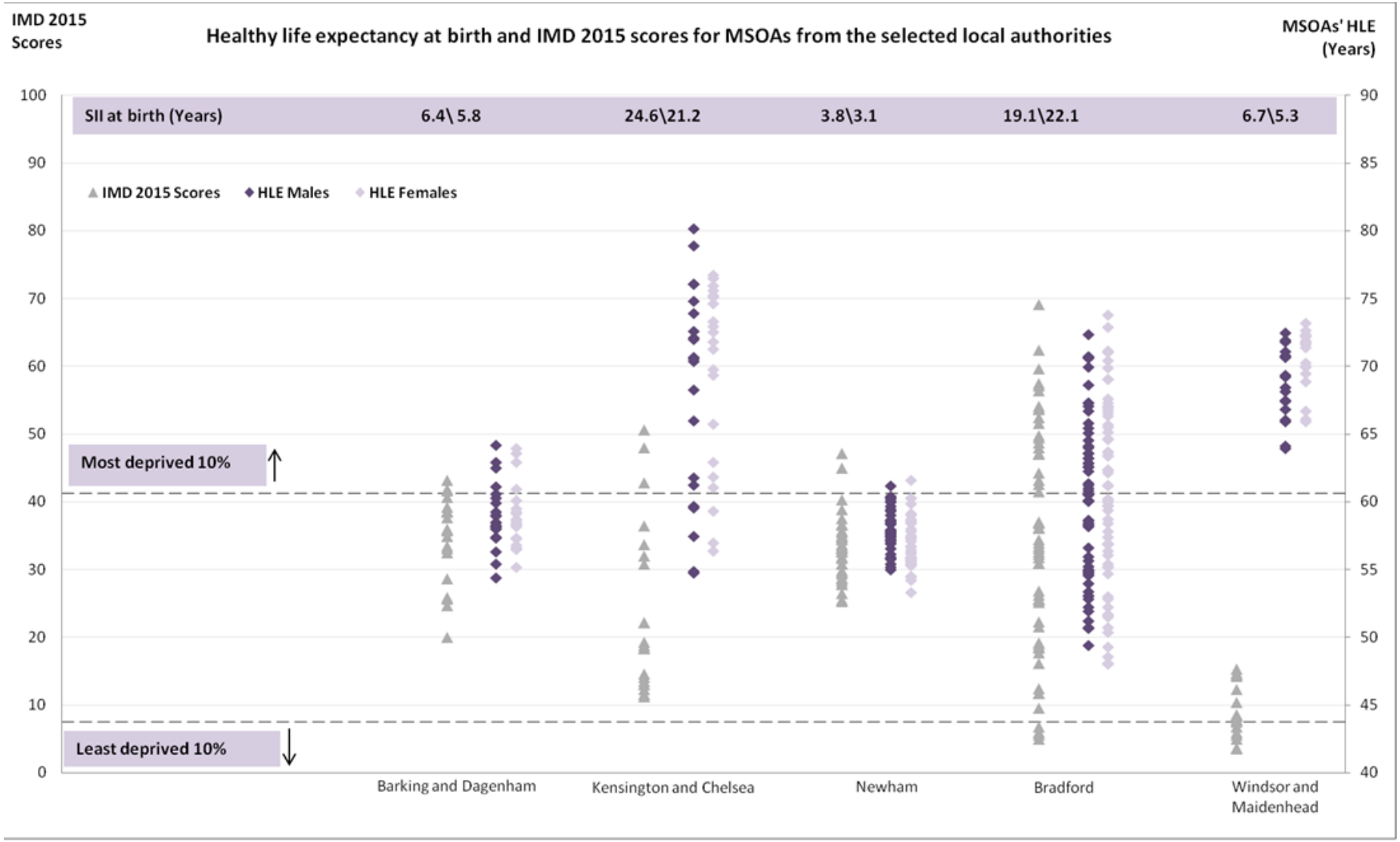
National Picture



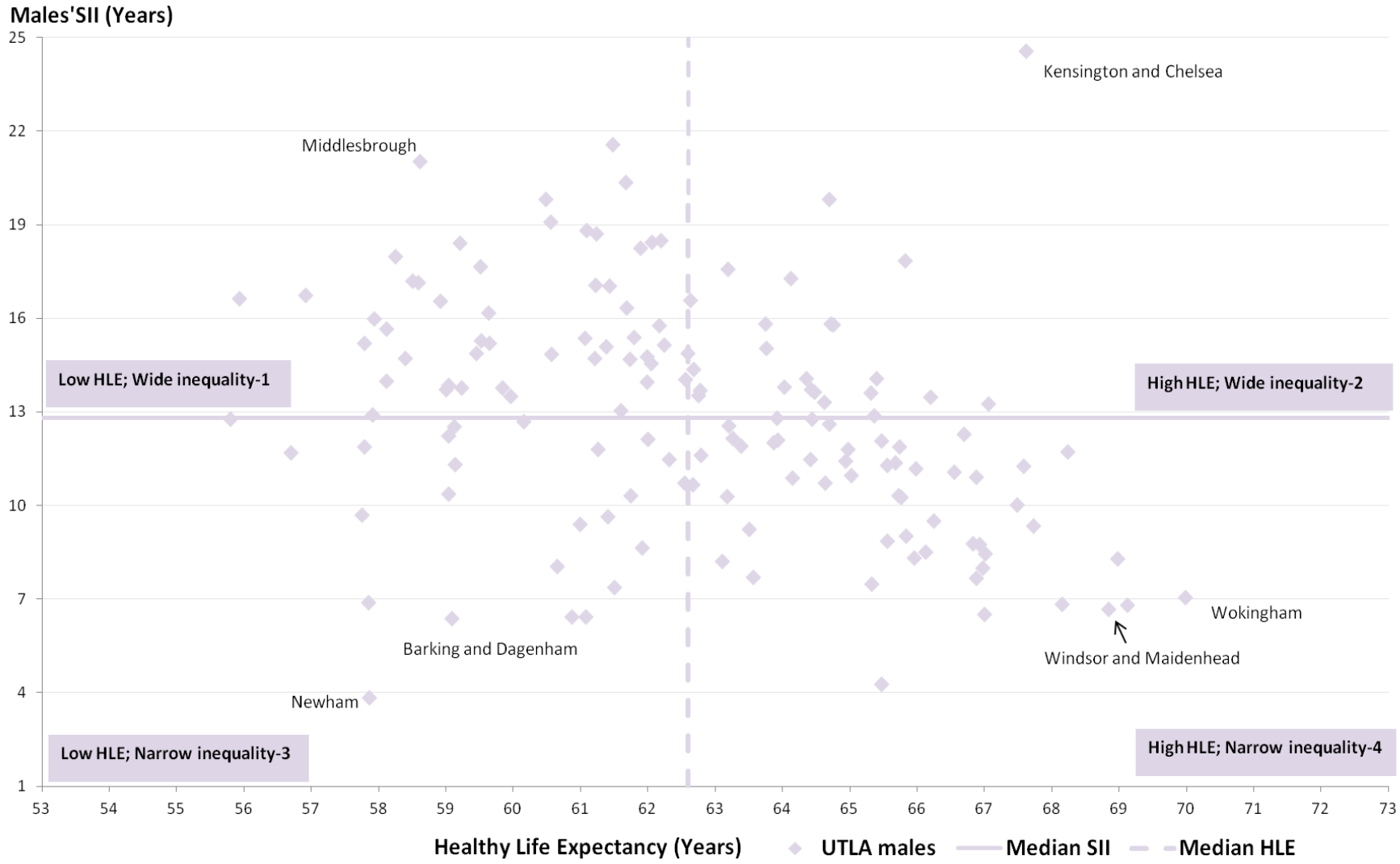
SII in HLE at birth across local authorities in England,2009 to 2013



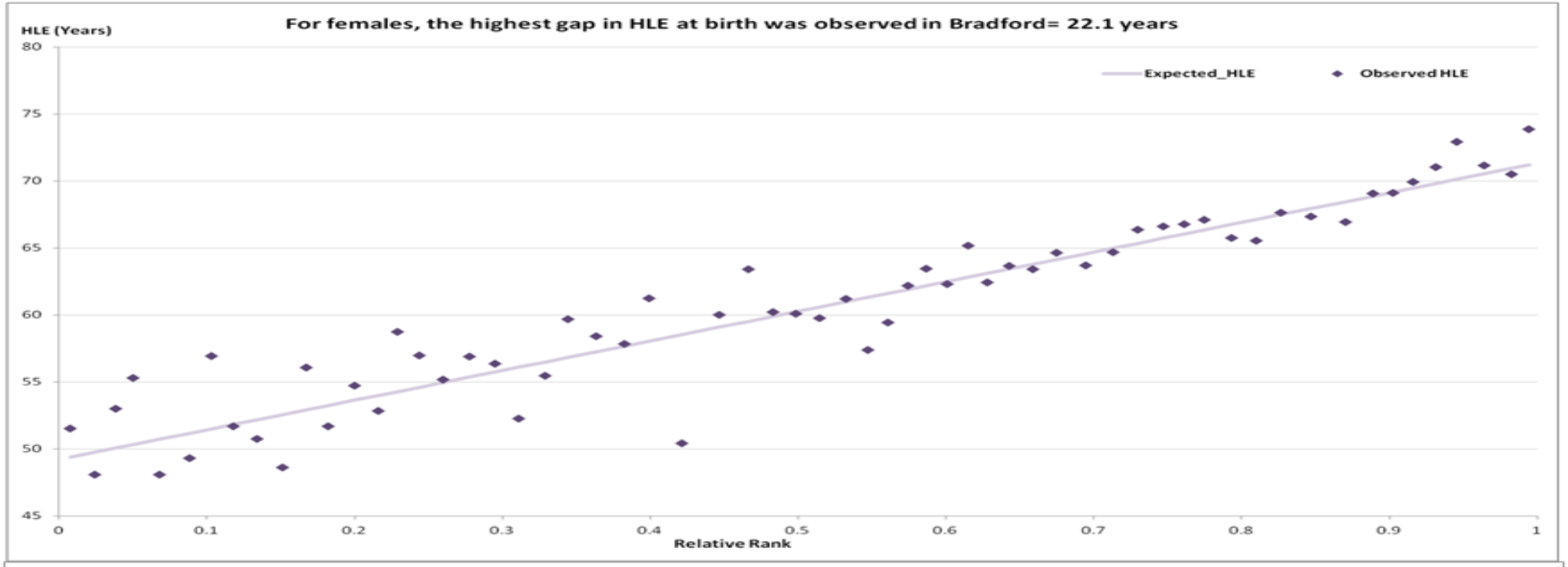
Deprivation dispersion matrix

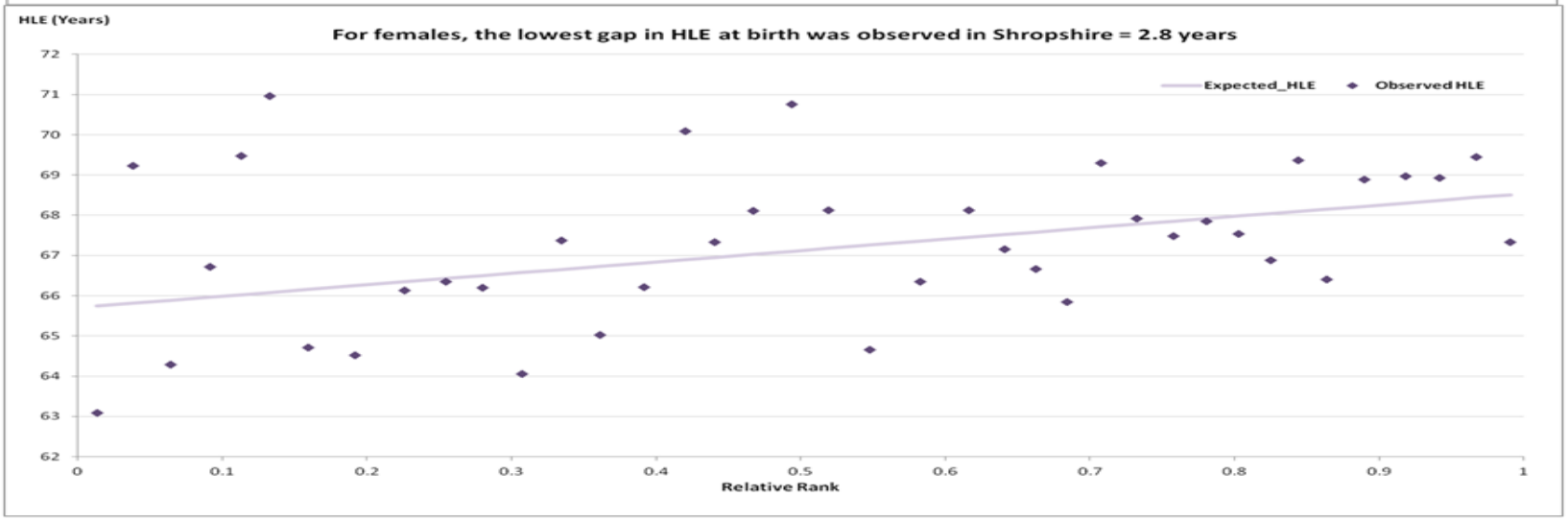


Policy of proportionate universalism



Limitations





Conclusions

- Ecological deprivation exposure is an important explanatory factor in discriminating healthy life expectancy at the granular level of small areas
- It has policy relevance in distinguishing areas across the dimensions of inequality and health outcome
  - *Proportionate universalism is a policy accepted by Department of Health*
  - *Different actions and their intensity are needed where HLE is low and inequality is either low or high and where HLE is high and inequality is either low or high*
- Further work is being carried out to understand the relative importance of each domain of deprivation and the interactions between them
- This work has also been used in determining the fairness of changes to the state pension age in the UK