



Addressing Identification Challenges in Neighbourhood Effects Research: A critical review of the empirical literature

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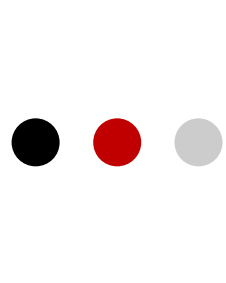
The research was conducted as part of the project “**Investigating People-Place Effects in the UK using Linked Longitudinal Survey and Administrative Data**”, funded by the Nuffield Foundation and led by Gundi Knies (ISER University of Essex) and Patricia Melo (ISEG University of Lisbon). <https://www.iser.essex.ac.uk/research/projects/investigating-people-place-effects-in-the-uk-using-linked-longitudinal-survey-and-administrative-data>





‘Neighbourhood effects’

- Spatial variation in individual-level outcomes that cannot be explained by individual and family background characteristics (nor by selective migration)
- Individual outcomes affected:
 - Voting; Schooling (incl. truancy and dropping-out); Welfare receipt and (un)employment, teenage pregnancy; Morbidity and mortality; Crime and illicit behaviour
 - Life satisfaction; Self-rated health; General health



Neighbourhood effects – mechanisms and outcomes

- Potential causal pathways (Galster 2012):
 - **Social interactive:** social contagion, collective socialisation, social networks, social cohesion and control, competition, relative deprivation, and parental mediation;
 - **Environmental:** exposure to violence, physical surroundings, and toxic exposure;
 - **Geographical:** spatial mismatch of jobs and workers and a lack of quality public services;
 - **Institutional:** stigmatisation, local institutional resources, and local market actors

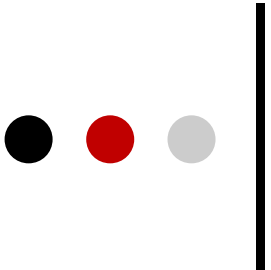


Neighbourhood effects – critiques and challenges

- Major reviews of the literature in the early 2000s, re-iterated and complemented by van Ham & Manley (2012)

Neighbourhood effects research needs to:

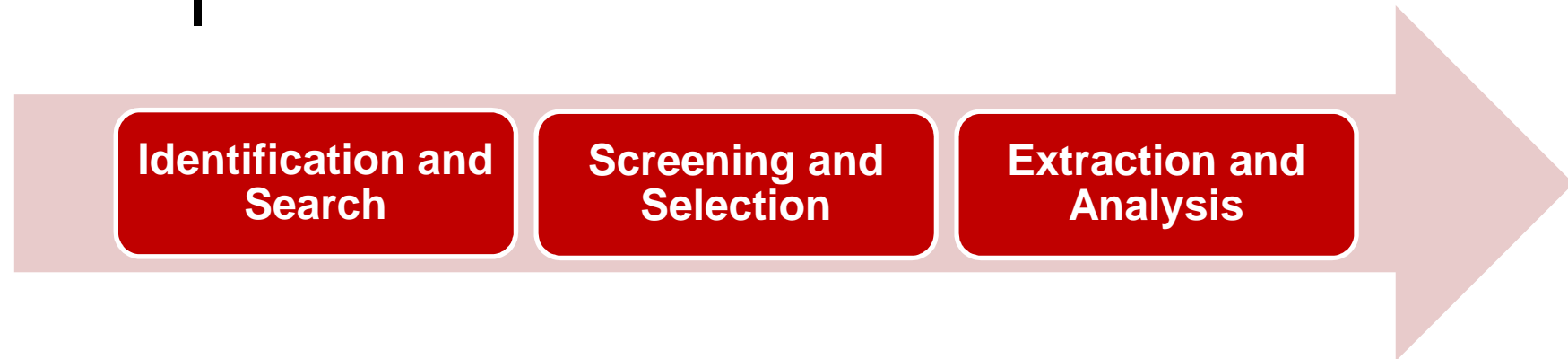
(1) test specific causal mechanisms; (2) be explicit about relationship between neighbourhood context and individual outcomes; look at (3) subjective well-being, (4) neighbourhood dynamics and (5) intergenerational transmission; (6) neighbourhood selection; (7) define neighbourhoods meaningfully; (8) consider geographical contexts other than residential neighbourhoods; (9) construct bespoke data; (10) combine quantitative and qualitative methods.



What is the state-of-the-art
in addressing the issues?

- Very extensive literature;
- Multiple disciplines: economics, human geography, sociology, urban studies, etc.;
- Differences in main focus;
- Differences in language, concepts, theories and methods across disciplines;

● ● ● | Literature Review Protocol



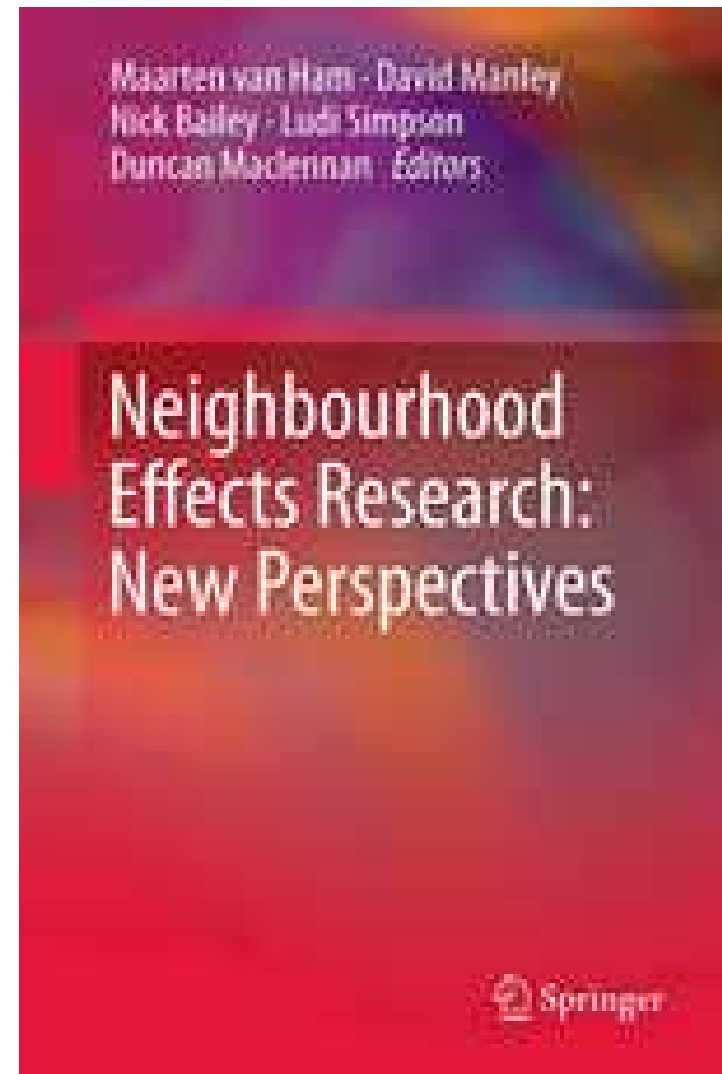
0. Read existing surveys and review studies
1. Define search criteria and identify candidate literature
2. Screen studies and select those considered relevant
3. Extract data for main study dimensions and build harmonised database



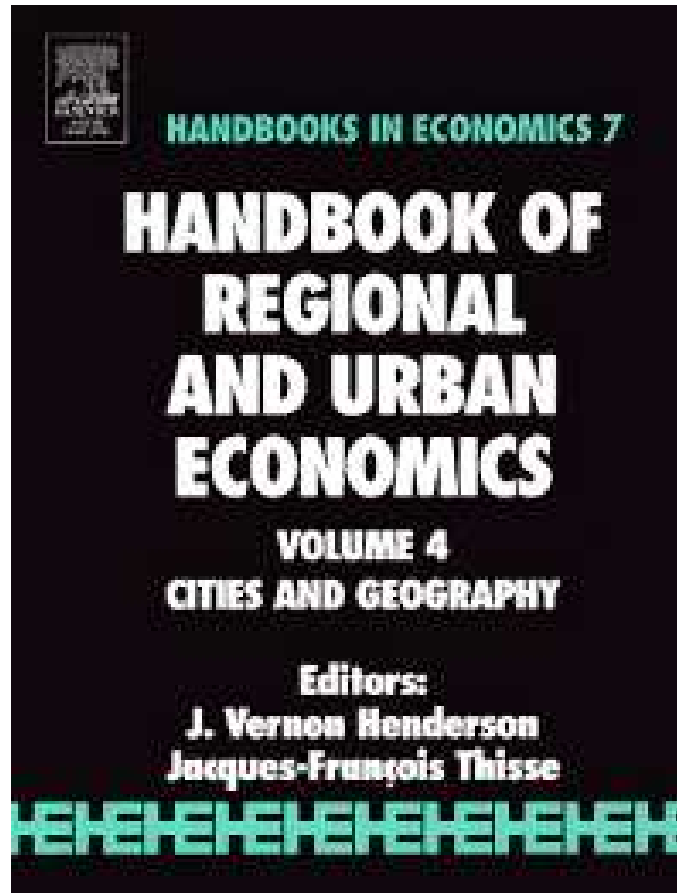
1. Search criteria

- Existing surveys and review studies informed search criteria (Round 0)
- Identification of new studies through Google Scholar to capture *grey literature*
- Search period covered: 2002-2018
- Searching keywords in title carried out in two consecutive rounds (Round 1, Round 2)

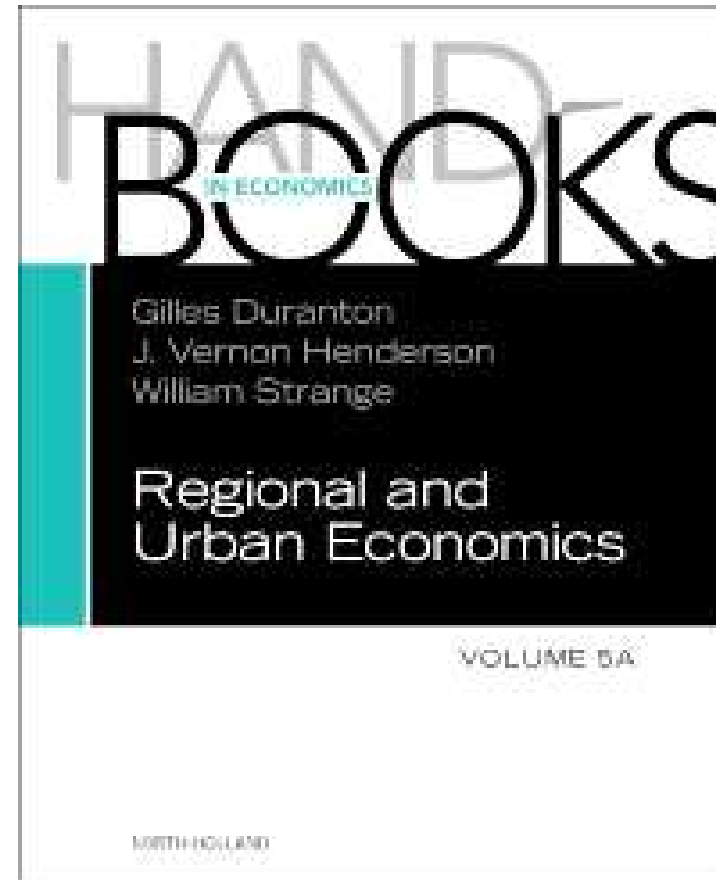
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	Maarten van Ham, David Manley, Nick Bailey, Ludi Simpson, and Duncan Maclennan	
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2012



Chapter 50: Neighbourhood effects, Steven Durlauf (2004)



Chapter 9: Neighbourhood and network effects
G. Topia & Y. Zenou (2015)



Housing Policy Debate • Volume 8, Issue 4 833
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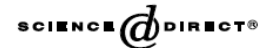
Does Neighborhood Matter? Assessing Recent Evidence

Ingrid Gould Ellen
New York University

Margery Austin Turner
The Urban Institute



Available online at www.sciencedirect.com



Social Science Research 31 (2002) 539–575



The estimation of neighborhood effects
in the social sciences: An
interdisciplinary approach ☆

Robert D. Dietz ¹



1. Search criteria

Round 1

Neighbo(u)rhood effect(s) OR community effect(s)

AND

- *Employment* (n=50)
- *Unemployment* (n=20)
- *Income* (n=203)
- *Earnings* (n=14)
- *Social mobility* (n=10)
- *Well(-)being* (n=33)
- *Life satisfaction* (n=7)
- *Happiness* (n=0)
- *Self-rated/self-reported health* (n=18)
- *SF12* (n=0)
- *GHQ* (n=0)

Total identified: **N=355**

Date accessed: 08 Feb 2018

Round 2

Search terms used: *Neighbo(u)rhood*

AND

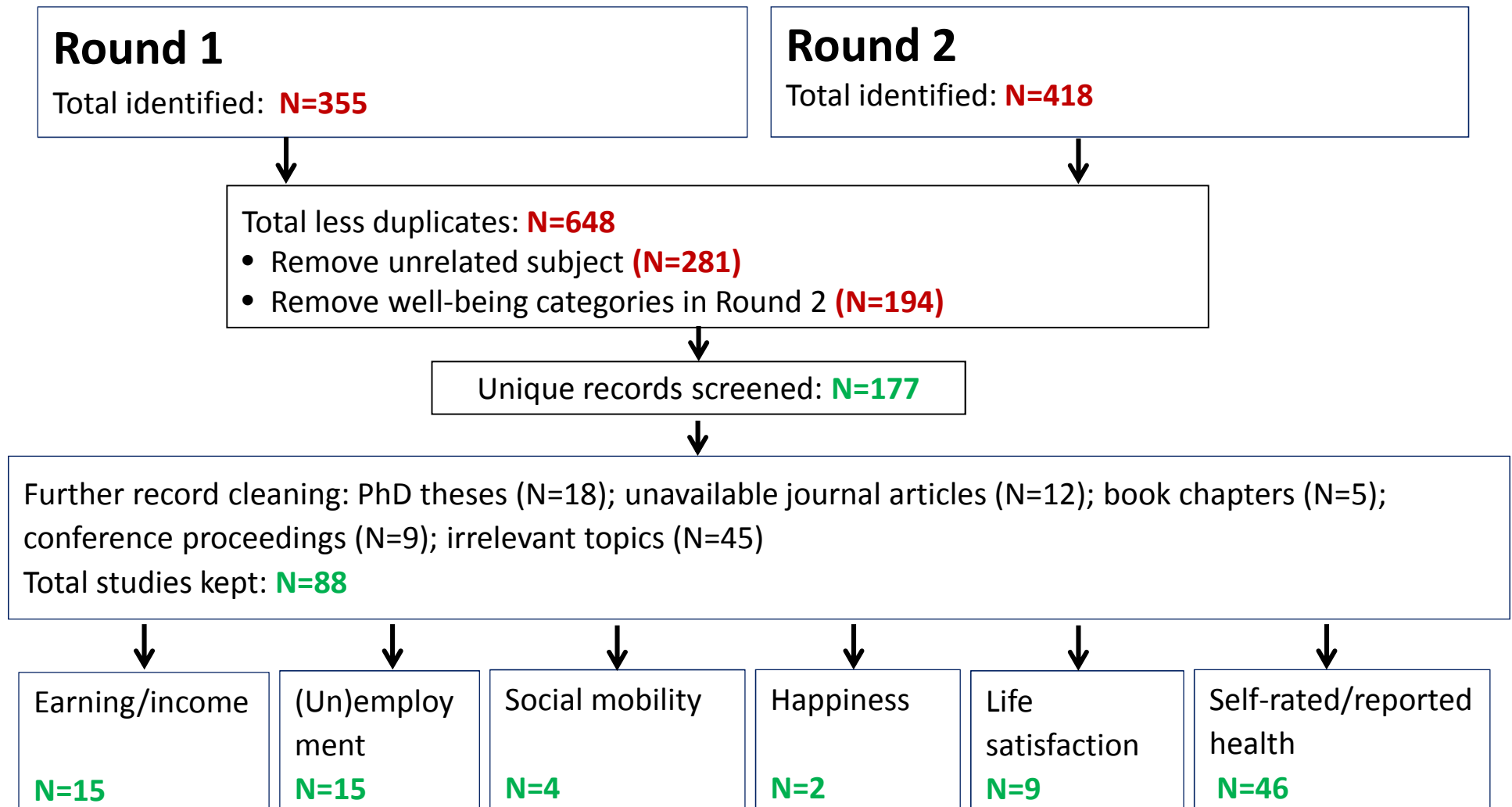
- *Well(-)being* (n=227)
- *Life satisfaction* (n=42)
- *Happiness* (n=17)
- *Self-rated/reported health* (n=132)
- *SF12* (n=0)
- *GHQ* (n=0)

Total identified: **N=418**

Date accessed: 09 Feb 2018



2. Screening & study selection





3. Data extraction: database

Data extraction for database

1. Outcome indicator(s) used
2. Neighbourhood boundaries / spatial scale
3. Causal mechanism(s) studied
4. Causal mechanism(s) indicator(s)
5. Longitudinal nature of data (yes/no)
6. Source of individual data
7. Temporal dynamics of neighbourhood indicators (dynamic vs. fixed in time)
8. Type of neighbourhood data: Census/administrative, survey, geomarketing
9. Estimation method: OLS, FE, RE, CRE, FD, IV, PSM, etc.
10. Model estimation and specification challenges addressed (yes/no)
 - Neighbourhood condition factors (if yes, list which)
 - Residential selection (if yes, how?)
 - Family background context/factors (if yes, which)
11. Results: statistically significant (yes/no); positive/negative impact; strong/weak
12. Study identification (year; authors; publication; discipline; citations)



Summary of main findings

By type of well-being outcomes:

- Causal mechanisms of NB effects
- Most popular indicators for NB effects causal mechanisms
- Neighbourhood spatial scales and boundaries
- Dealing with selection bias and other identification issues

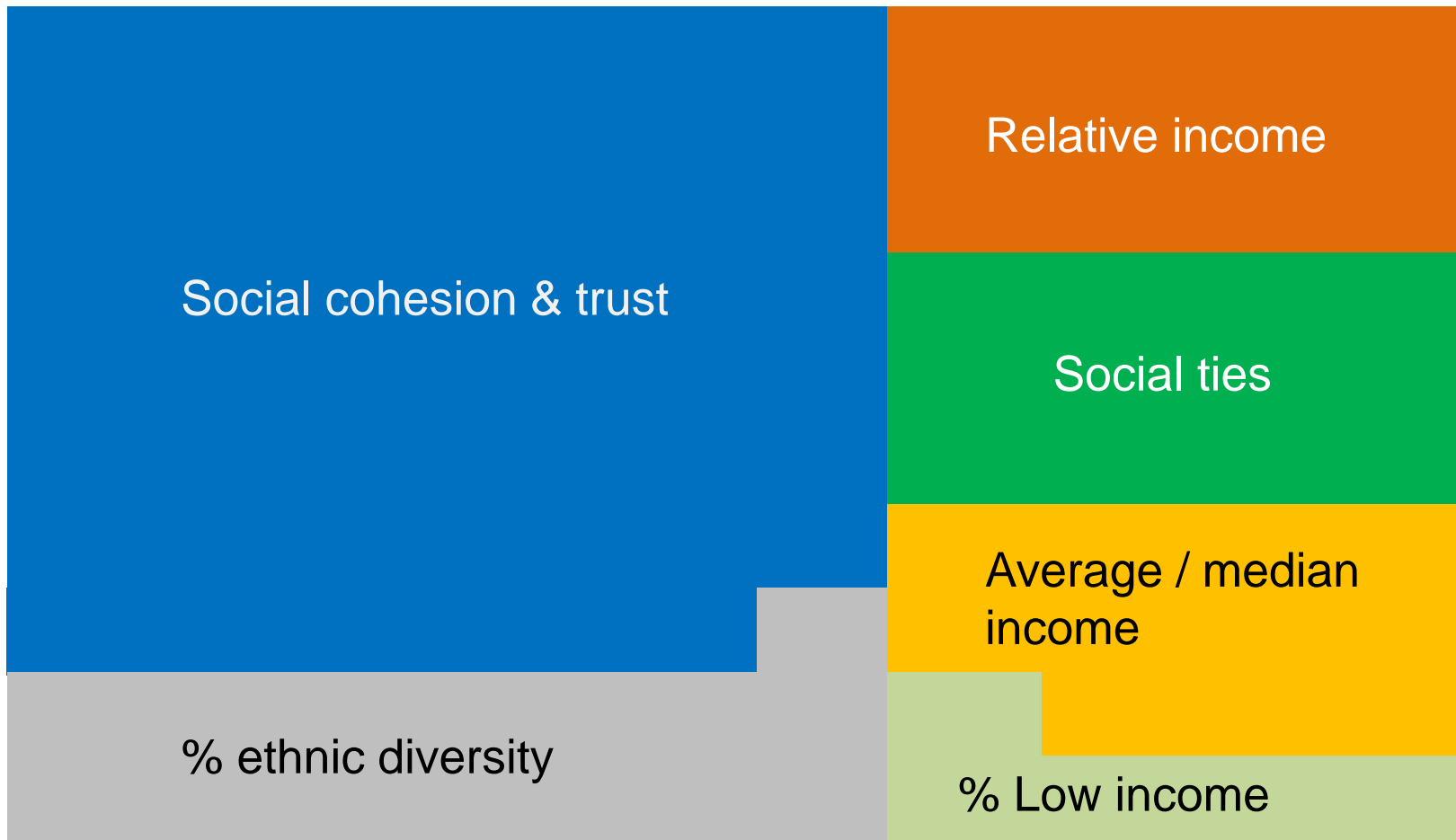


Mechanisms studied

Causal mechanism	Objective outcomes		Subjective outcomes	
	Employment	Earnings	Life satisfaction	Self-rated health
Social interactive	●	●	●	●
Environmental	●	●	●	●
Geographical	●	●	●	●
Institutional	●	●	●	●
Catch-all	●	●	●	●

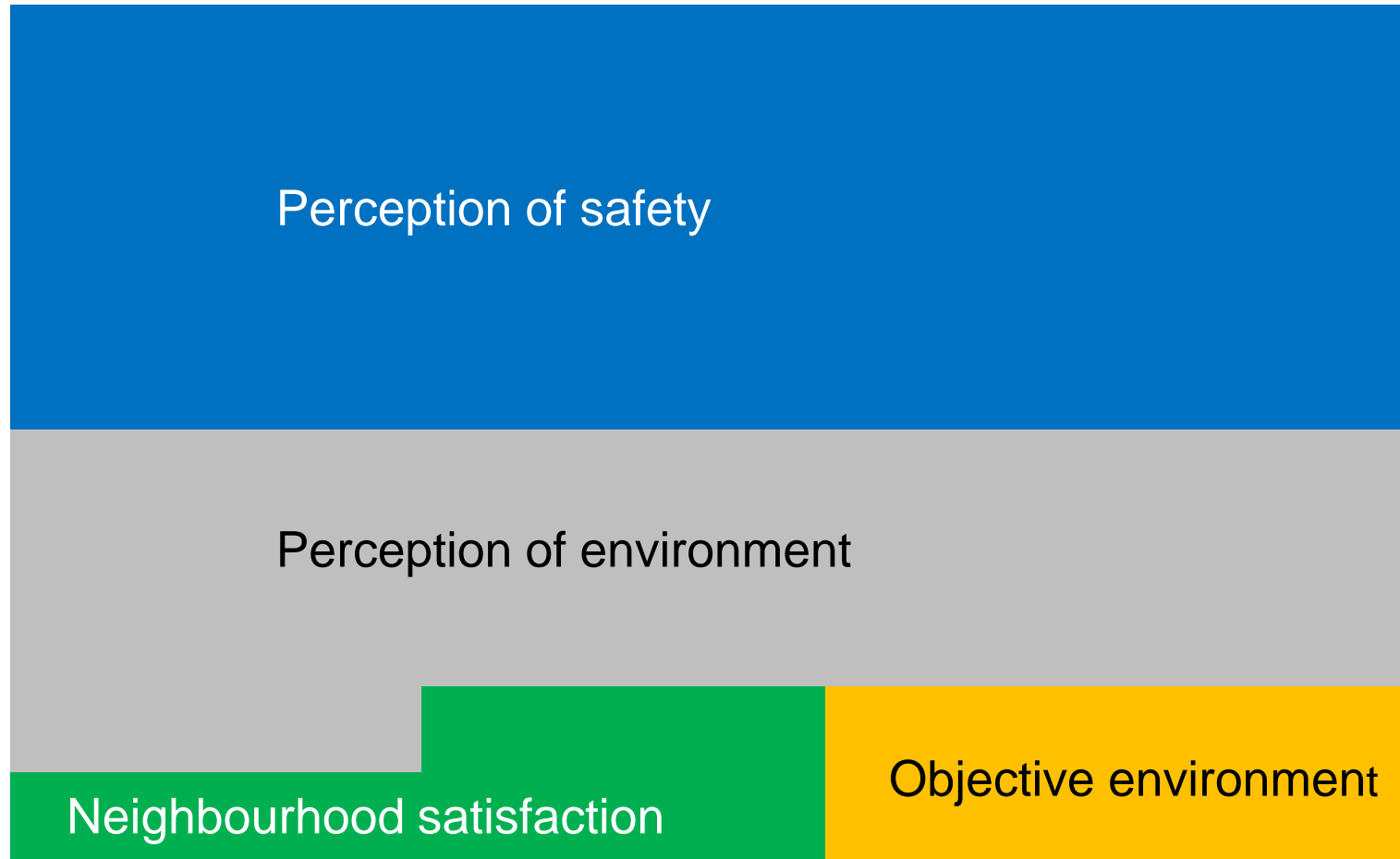


Frequently chosen Indicators: Social-interactive mechanisms





Frequently chosen indicators: Environmental & geographical mechanisms



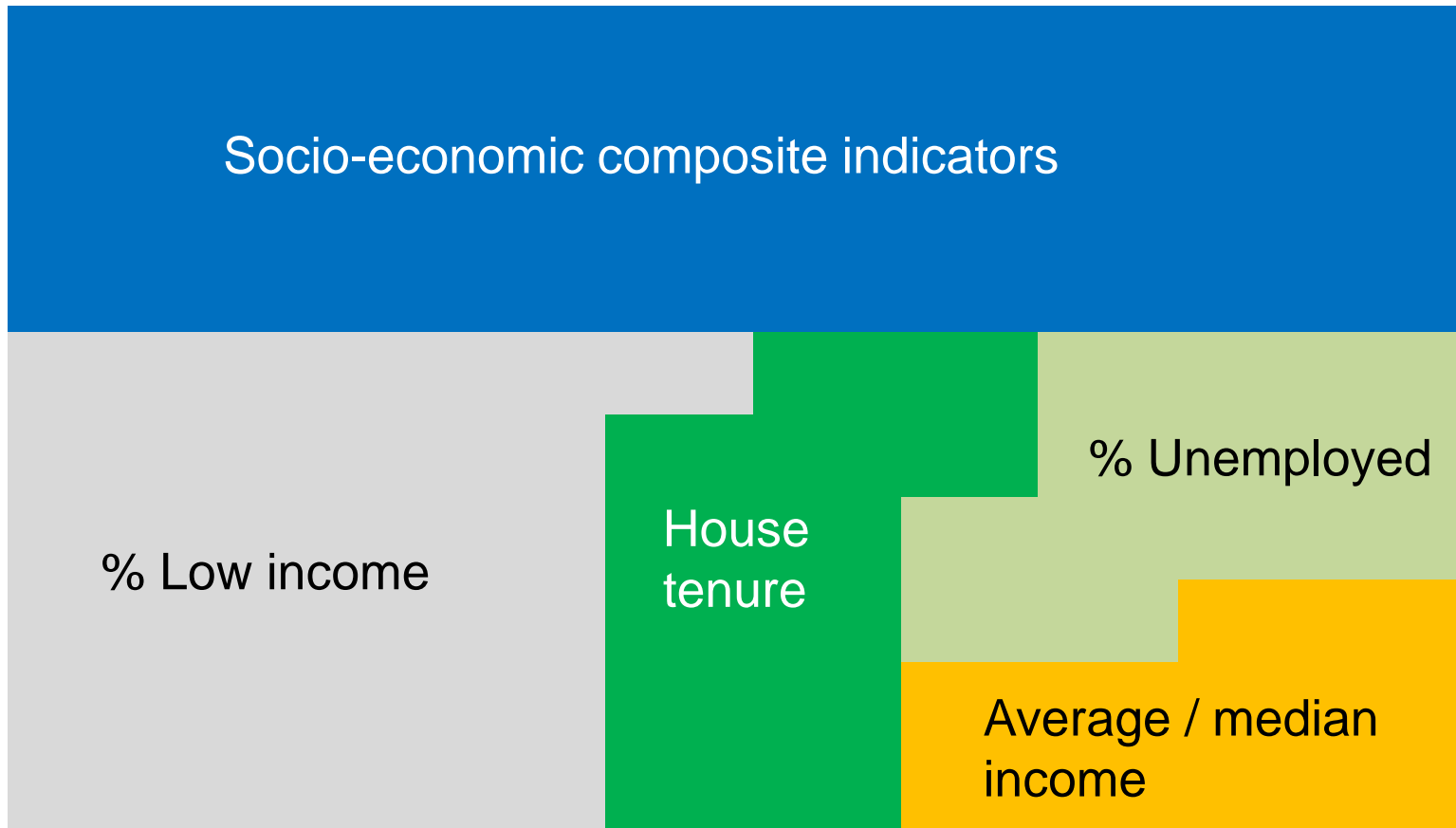


Frequently chosen indicators: Institutional mechanisms

Hirschman-Herfindahl index	1	6.25
average / median income	1	6.25
employment density	1	6.25
housing price	1	6.25
n/a	1	6.25
others: political climate, composite	1	6.25
others: transport wealth, composite	1	6.25
others: transport, composite	1	6.25
proportion of co-ethnic	1	6.25
proportion of low-income	1	6.25
public service, objective	3	18.75
public service, subjective	2	12.5
social cohesion / control / trust	1	6.25



Frequently chosen indicators: Catch-all mechanisms





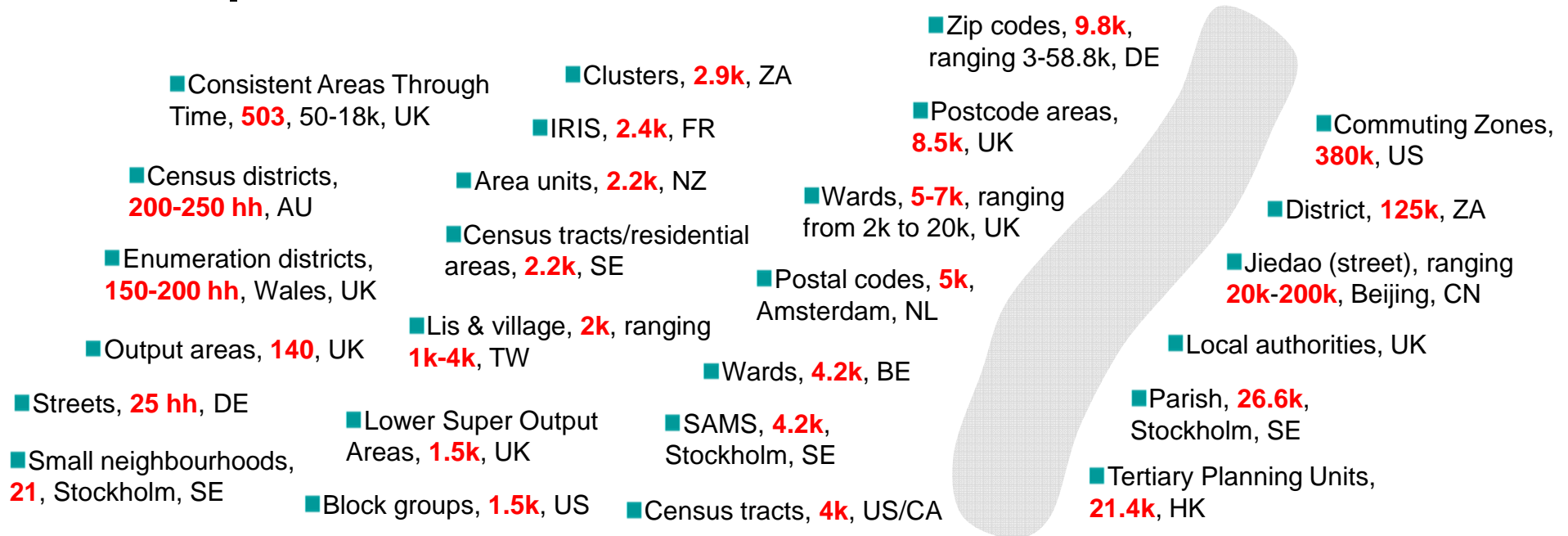
Types of neighbourhood data

Data types	Objective outcomes		Subjective outcomes	
	Employment	Earnings	Life satisfaction	Self-rated health
Administrative				
<i>census</i>	9	6	5	13
<i>registers</i>	4	8	0	4
<i>survey</i>	0	0	3	5
<i>geo-marketing</i>	0	0	1	1
Respondent-centred	0	0	7	9
Bespoke				
<i>population-based</i>	3	3	0	0
<i>size-based</i>	4	1	1	0



Neighbourhood scales

in administrative data



(people)

1k

2k

4k

6k

8k

10k



20k

50k

100k

Very small

Small

Intermediate

Large

Very large



Neighbourhood scales in administrative data

Scales	Objective outcomes		Subjective outcomes	
	Employment	Earnings	Life satisfaction	Self-rated health
Very small	1	2	3	2
Small	3	2	2	9
Intermediate	7	7	3	10
Large	0	3	2	1
Total number	10	14	10	22



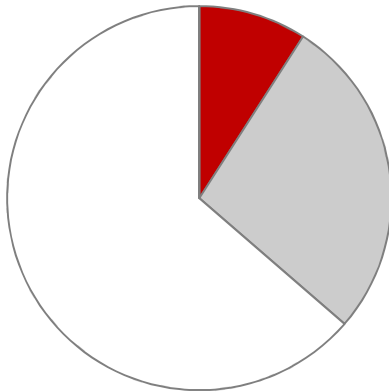
■ Very small ■ Small
□ Intermediate ■ Large



Neighbourhood scales

(administrative data only)

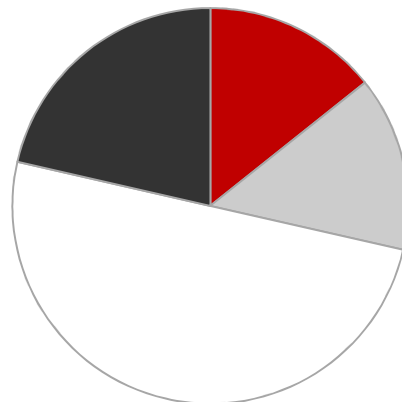
Employment



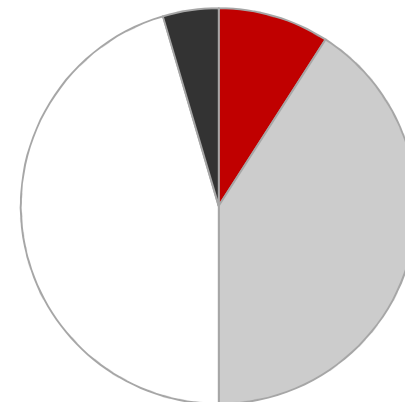
Life satisfaction



Earnings



Self-rated health



- Very small
- Small
- Intermediate
- Large

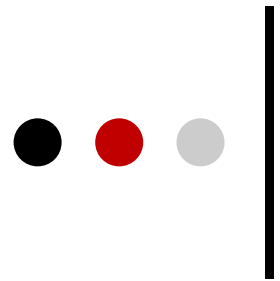


Addressing selection bias

0
1-3
4+

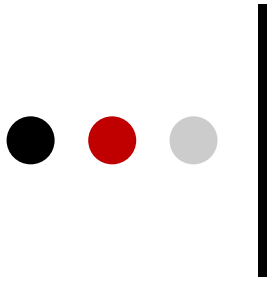
+ Robustness ↓

Method	Objective Outcomes		Subjective outcomes	
	Employment	Earnings	Life satisfaction	Self-rated health
Not addressed	4	5	4	10
Control for individual characteristics	0	0	1	2
Individual fixed effects / correlated random effects	1	5	1	0
Neighbourhood fixed effects	1	3	7	12
Sample restriction	4	3	2	1
Instrumental variables / Propensity score matching	3	2	1	1
Explicit modelling of residential choice	0	1	0	0
Total	13	19	16	26



Conclusion

- There has been some progress addressing selection bias, but it remains limited to (only some) register data countries;
- Understanding of causal mechanisms, and their relative importance, remains a challenge;
- Choice of spatial scale dependent on outcome and focus of study, generally flexible scales more appropriate and meaningful.



Thank you!



University of Essex



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