GEODEMOGRAPHICS AND SPATIAL MICROSIMULATION: USING SURVEY DATA TO INFER HEALTH MILIEU GEOGRAPHIES
HEALTH ‘BEHAVIOURS’ IN LONDON

Smoking:

Physical inactivity:

Across London 1.8 million adults are classified as inactive

## THE GEOGRAPHY OF HEALTH ‘BEHAVIOURS’

### Behaviour vs. practice

<table>
<thead>
<tr>
<th>pos</th>
<th>dimension</th>
<th>examples</th>
<th>pathway</th>
<th>studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>health ‘behaviour’</td>
<td>smoking habits, diet, physical activity</td>
<td>behavioural</td>
<td>Blaxter 1990; Stringhini et al. 2010</td>
</tr>
<tr>
<td>2</td>
<td>perceived social security</td>
<td>financial prospects, job prospects, life satisfaction</td>
<td>psycho-social</td>
<td>Wilkinson &amp; Picket 2010</td>
</tr>
<tr>
<td>3</td>
<td>perceived social position</td>
<td>control over life, job task</td>
<td>psycho-social</td>
<td>Marmot et al. 1991; Stansfeld et al. 1997</td>
</tr>
<tr>
<td>4</td>
<td>social support</td>
<td>confiding emotional support, local support</td>
<td>psycho-social</td>
<td>Carpiano 2006, 2007; Marmot et al. 1991</td>
</tr>
<tr>
<td>5</td>
<td>social participation</td>
<td>visits of friends, relatives</td>
<td>behavioural</td>
<td>Marmot et al. 1991</td>
</tr>
<tr>
<td>6</td>
<td>civic orientation</td>
<td>political competence, interest, perceived benefits</td>
<td>psycho-social</td>
<td>Frohlich &amp; Abel 2014</td>
</tr>
<tr>
<td>7</td>
<td>civic participation</td>
<td>community engagement, voting, volunteering</td>
<td>behavioural</td>
<td>Frohlich &amp; Abel 2014</td>
</tr>
<tr>
<td>8</td>
<td>cultural participation</td>
<td>leisure, visit of events, museums</td>
<td>behavioural</td>
<td>Bourdieu 1984</td>
</tr>
<tr>
<td>9</td>
<td>communication</td>
<td>language, ICT, media use</td>
<td>behavioural</td>
<td>Bourdieu 1984</td>
</tr>
</tbody>
</table>
UNDERSTANDING SOCIETY LONGITUDINAL STUDY

- Lifestyle survey
- Panel with $n > 40,000$
- Since 2009
- Whole UK
THE HEALTH MILIEUS
THE HEALTH MILIEUS

1. Enduring Isolation
   inactive • isolated • low incomes

2. Unconcerned Starters
   inactive • self-centred • early career

3. Retiring Generation
   inactive • domestic • elderly

4. Locally Anchored
   local • middle age • lower-medium position

5. Estab. Cultural Consumers
   healthy • active • affluent

6. Rising Extroverts
   active • affluent • young

7. Committed Citizens
   volunteering • middle age • settled

8. Laid-back Detachment
   inactive • modestly detached • younger families

9. Digital Age Autonomy
   nutrition • social media • young parents

10. Individualistic Independence
    healthy • active • younger
THE HEALTH MILIEUS

**Self-rated health**
- Mean score (1: good – 5: poor)
- Income

**Diagnosed conditions (at least 1)**
- Risk ratio (1: average)
- Income
SPATIAL MICROSIMULATION

Matching ('constraint') variables

1. education
2. age
3. job status
4. tenure
5. hh.composition
6. marital status
7. NSSEC status
8. health
9. cars
10. hh.size
11. disability
12. ethnicity
13. children
14. unpaid care
15. sex
GEOGRAPHY OF HEALTH MILIEUS

1 Enduring Isolation
I = .696
under 4.8 over 10.4

4 Locally Anchored
I = .627
under 6.6 over 9.3

5 Established Cultural Consumers
I = .692
under 6.1 over 15.7

6 Rising Extroverts
I = .689
under 6.8 over 15.9

8 Laid-back Detachment
I = .837
under 10.1 over 18.7

10 Individualistic Independence
I = .659
under 9.7 over 13.8

All values are percentages, except I, which is Moran’s I of spatial autocorrelation.
‘INTERNAL’ VALIDATION

**Average classification error (%)**

- C.E. (%) 11.7
- 4.56 to < 4.6
- 4.6 to < 4.63
- 4.63 to < 4.67
- 4.67 to < 4.7
- 4.7 to < 4.74
- over 4.74

**Cluster distances**

- I = .625
- I = .699

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**Table with variables and values:**

<table>
<thead>
<tr>
<th>var</th>
<th>age</th>
<th>car</th>
<th>children</th>
<th>disability</th>
<th>econ.active</th>
<th>education</th>
<th>ethnicity</th>
<th>hh.comp.</th>
<th>marital</th>
<th>NSSEC</th>
<th>tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.E.(%)</td>
<td>11.7</td>
<td>0.0</td>
<td>0.0</td>
<td>1.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>9.6</td>
<td>6.6</td>
<td>0.0</td>
<td>6.8</td>
</tr>
</tbody>
</table>
### ‘EXTERNAL’ VALIDATION: LONDON OAC (Longley & Singleton 2014)

<table>
<thead>
<tr>
<th>LOAC category</th>
<th>Milieus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X1</td>
</tr>
<tr>
<td>A. Intermediate Lifestyles</td>
<td>1.14</td>
</tr>
<tr>
<td>B. High Density &amp; High Rise Flats</td>
<td><strong>1.30</strong></td>
</tr>
<tr>
<td>C. Settled Asians</td>
<td>1.12</td>
</tr>
<tr>
<td>D. Urban Elites</td>
<td>0.76</td>
</tr>
<tr>
<td>E. City Vibe</td>
<td>0.92</td>
</tr>
<tr>
<td>F. London Life Cycle</td>
<td>0.62</td>
</tr>
<tr>
<td>G. Multi-Ethnic Suburbs</td>
<td><strong>1.21</strong></td>
</tr>
<tr>
<td>H. Ageing City Fringe</td>
<td>0.75</td>
</tr>
</tbody>
</table>
CONCLUSIONS
CONCLUSIONS

Milieu approach vs. conventional geodemographics

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Milieu Segmentation</th>
<th>Conventional Geodemographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical Unit</td>
<td>Individual</td>
<td>Area</td>
</tr>
<tr>
<td>Theory</td>
<td>Social Theory</td>
<td>Ecological Reasoning</td>
</tr>
<tr>
<td>Spatial Patterns</td>
<td>Hypothesis Given Zonal ‘Evidence’</td>
<td>Ecological Description</td>
</tr>
<tr>
<td>Ecological Output</td>
<td>Continuous Degrees</td>
<td>Discrete Classes</td>
</tr>
<tr>
<td>Dynamic Extension</td>
<td>Direct</td>
<td>Indirect</td>
</tr>
</tbody>
</table>
THANK YOU.

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