Social Exclusion and Digital Disengagement
Issues of Policy, Theory and Measurement

OxIS Discussion Seminar 2007 (OII)

Ellen J. Helsper
Bill Dutton
Agenda

• Introduction
  Bill Dutton – Director OII & Principal investigator OxIS

• Policy debates and issues
  Ewen McKinnon – Programme Manager Digital Inclusion Team, Communities and Local Government

• Definitions, measurement and analyses
  Ellen Helsper – Survey Research Fellow OII & Coordinator OxIS

• Panel comments
  Ben Anderson - Deputy Director Chimera, Essex University
  Mike Cushman - Research Fellow & Information Manager, Department of Information Systems at the London School of Economics and Political Science

• Round table discussion
Definitions, Measurement and Analyses

Definitions of Social Inclusion

Definitions of Digital Engagement

Researching Links between Social and Digital Inclusion

Evidence for Relationships between Social exclusion and Digital Disengagement
Definitions Social Inclusion

Inclusion resources

- Economic
- Social
- Cultural
- Political/Civic
- Personal

A combination of the above can be called multiple deprivation. Existing multiple deprivation indexes measure mainly Economic resources.
Definitions Digital Inclusion

Digital resources

➔ Access
➔ Skills
➔ Attitudes
➔ Use

Combination of the above can be called an index of multiple digital deprivation.

No index currently exist although could be based on e-classification model (UCL) and Media Literacy indexes (Ofcom).
Digital Resources

- Dichotomy
  - Location
  - Access
    - Quality
- Social
  - Creative
  - Skills
  - Critical Insight
- Technical

- Centrality
  - Attitudes
    - Regulation
    - ICTs
- Use
  - Quantity
  - Nature
  - Quality

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Linkages

Inclusion resources $\rightarrow$ Digital resources

Enablers and Barriers
- Access
- Skills
- Attitudes

Digital resources as inclusion resources:
Communication, entertainment, information and learning, (commercial) services, civic engagement
Linkages

Digital resources \(\rightarrow\) Social Inclusion

Enablers and Barriers
- Relevance
- Empowerment
- Nature

Inclusion resources:
- Economic, Cultural, Political, Social, Psychological
Research Framework

Inclusion Resources

- Social
- Personal
- Economic
- Cultural
- Political

Enablers and Barriers

- Access
- Skills
- Attitudes

Relevance
- Nature
- Empowerment

Digital Resources

- Communication and networking
- Entertainment and leisure
- Information and Learning
- Commercial Services
- Civic engagement

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Broader framework can be applied to different databases with different variables.

Multiple analyses possible at different levels of measurement
- **BroDEST** level: One Index of Multiple Social Deprivation and one Index of Multiple Digital Deprivation
- **Resource** level: Indexes of Economic, Cultural, Political/Civic, and Socio-Psychological Resources and Indexes of Access, Skills, Attitudes, and Use
- **Indicator** level: Subcategories of indicators derived from the different social and digital resources
- **Itemised** level: Indicators can be further subdivided into smaller items that measure the indicators.

Latter especially important for ‘Use quality’.
Example of Itemised level measurement
Access

Dichotomy

Access

No Access

Mobile

Broadband

Narrowband

Quality

Location

Private
  - Home
  - Work

Public
  - Library
  - School
  - Cafe
Analytical Framework

Suggestions for analytical approaches with survey data

- Descriptives
- Predictive
- Patterning
- ‘Case studies’
Analytical Strategy

Multivariate analyses and ‘case studies’ with survey data are options to create a more detailed and nuanced understanding of the links between social and digital inclusion.

OxIS examples: linear regression (predictive), correspondence analysis (patterns) and ‘exceptions-to-the-rule’ approaches (case studies)
**Linear regression: What predicts Digital Resources?**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.D.</th>
<th>p.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>-0.24</td>
<td>0.10</td>
<td>0.02</td>
<td>0.79</td>
</tr>
<tr>
<td>Student</td>
<td>2.40</td>
<td>0.76</td>
<td>0.00</td>
<td>10.98</td>
</tr>
<tr>
<td>Employed</td>
<td>1.13</td>
<td>0.25</td>
<td>0.00</td>
<td>3.08</td>
</tr>
<tr>
<td>Not religious</td>
<td>0.52</td>
<td>0.25</td>
<td>0.04</td>
<td>1.68</td>
</tr>
<tr>
<td>Age</td>
<td>-0.25</td>
<td>0.07</td>
<td>0.00</td>
<td>0.78</td>
</tr>
<tr>
<td>Interest in Politics</td>
<td>0.34</td>
<td>0.13</td>
<td>0.01</td>
<td>1.41</td>
</tr>
<tr>
<td>Home access</td>
<td>4.94</td>
<td>0.26</td>
<td>0.00</td>
<td>139.05</td>
</tr>
<tr>
<td>Self attitude (the internet is good for me)</td>
<td>0.49</td>
<td>0.13</td>
<td>0.00</td>
<td>1.63</td>
</tr>
<tr>
<td>Society attitude (the internet is good for society)</td>
<td>1.45</td>
<td>0.22</td>
<td>0.00</td>
<td>4.26</td>
</tr>
<tr>
<td>Constant</td>
<td>-7.77</td>
<td>0.89</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Logistic regression of use or no use  
Base: All Users and Non-Users (N=2350)
LogLinear regression: to use or not to use

<table>
<thead>
<tr>
<th></th>
<th>Access quality (Public to Private)</th>
<th>No access indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired</td>
<td>-1.49</td>
<td>Student</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-0.86</td>
<td>2.43</td>
</tr>
<tr>
<td>Catholic</td>
<td>0.58</td>
<td>Employed</td>
</tr>
<tr>
<td>Other Christian</td>
<td>0.62</td>
<td>1.26</td>
</tr>
<tr>
<td>Interest in politics</td>
<td>0.31</td>
<td>Anglican</td>
</tr>
<tr>
<td>Social participation</td>
<td>0.54</td>
<td>-0.56</td>
</tr>
<tr>
<td>Internal locus of control</td>
<td>0.47</td>
<td>Gender (women)</td>
</tr>
<tr>
<td>Quality of access</td>
<td>1.32</td>
<td>0.31</td>
</tr>
<tr>
<td>Skills: ICT richness</td>
<td>0.19</td>
<td>Participation in politics</td>
</tr>
<tr>
<td>Self Attitude</td>
<td>0.51</td>
<td>0.15</td>
</tr>
<tr>
<td>Society Attitude</td>
<td>1.20</td>
<td>Social participation</td>
</tr>
<tr>
<td>Constant</td>
<td>-8.21</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Logistic regressions of use or no use
Base: All Users and Non-Users (N=2350)
## Linear regression: How much is enough?

<table>
<thead>
<tr>
<th>Social resource</th>
<th>Digital resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Entertain</td>
</tr>
<tr>
<td>Cultural</td>
<td>Women – Age – Not reli +</td>
</tr>
<tr>
<td>Political</td>
<td>Parental restriction +</td>
</tr>
<tr>
<td>Socio-Psy</td>
<td>Social Network + Internal locus of control +</td>
</tr>
<tr>
<td>Access</td>
<td>Number + Home +</td>
</tr>
<tr>
<td>Skills</td>
<td>ICT +</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Society + Self +</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.67</td>
</tr>
</tbody>
</table>

Linear regression Breadth of use (i.e. Quality)
Base: All Users and Non-Users (N=2350)
### Linear regression: What is enough

<table>
<thead>
<tr>
<th>Social Resource</th>
<th>Entertain</th>
<th>Educate</th>
<th>Transact</th>
<th>Interact</th>
<th>Civic</th>
<th>Breadth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>SES + Income –</td>
<td>Educ +</td>
<td>Educ + Income +</td>
<td>Educ +</td>
<td>Educ + Urban +</td>
<td></td>
</tr>
<tr>
<td>Cultural</td>
<td>Age – Women – Asian + Not reli +</td>
<td>Student + African Carribean +</td>
<td>Age + Student – Not reli +</td>
<td>Anglican -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political</td>
<td>Interest - Actions +</td>
<td>Interest + Actions +</td>
<td>Interest + Actions +</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-Psy</td>
<td>Social network + Internal locus of control +</td>
<td>Social network + Organised + Internal locus of control -</td>
<td>Social network +</td>
<td>Social network +</td>
<td>Organised +</td>
<td></td>
</tr>
<tr>
<td>Access</td>
<td>Number + Quality +</td>
<td>Number + Dial up +</td>
<td>Quality +</td>
<td>Number +</td>
<td>Number + Quality + Privacy +</td>
<td></td>
</tr>
<tr>
<td>Skills</td>
<td>Self Effic + Website +</td>
<td>Self Effic + Problem solving + Program + Risk awareness +</td>
<td>SE + Website +</td>
<td>SE + Website + Filter + Problem solving +</td>
<td>Website + Program +</td>
<td>SE + Website + Technical Program + Risk awareness +</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Society +</td>
<td>Depend +</td>
<td>Depend +</td>
<td>Depend +</td>
<td>Depend +</td>
<td>Depend + Self +</td>
</tr>
</tbody>
</table>

| R²              | .33 | .39 | .31 | .45 | .29 | .46 |
Patterns Social and Digital Inclusion 2007

Principal components analysis
Base: All users and non-users (N=2350)
Patterns Social and Digital Inclusion 2005

Thanks to Martin Dimov

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### Case studies: Social and Digital inclusion

**Scottish Household Survey**

<table>
<thead>
<tr>
<th>Socially Included</th>
<th>Socially Excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Internet User</td>
<td>15%</td>
</tr>
<tr>
<td>Internet User</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OxIS 2007**

<table>
<thead>
<tr>
<th>ABC1C2</th>
<th>DE</th>
</tr>
</thead>
<tbody>
<tr>
<td>23%</td>
<td>10%</td>
</tr>
<tr>
<td>49%</td>
<td>18%</td>
</tr>
</tbody>
</table>

How are these people different?
Analytical Strategy also…

Can we study the ‘effect’ of digital inclusion on social inclusion with survey data?

- Investigating levels in ‘changeable’ social (social psychological, economic and political) resources based on independent effects of access, skill, attitudes and uses in groups with similar backgrounds as regards non-changeable social (cultural and economic) resources

BUT….

Really necessary are panel studies and well constructed intervention research
Summary

• What do we want to predict?
  ➔ (Which) Inclusion resources?
  ➔ (Which) Digital resources?
  ➔ Barriers and enablers

• What needs to be done?
  ➔ Scale/Measurement construction
  ➔ Study at different levels to judge diverse impacts
Thank you.

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