Data on educational qualification in national and cross-national research

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Cross-Nationally Comparative Social Survey Research
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Structure of this Talk

1. Introduction

2. Social Survey Datasets

3. Analysing Social Survey Data

4. Issues Associated with Measures of Educational Qualifications
   - Example from England & Wales
   - Example of Harmonisation

5. Conclusion
Measuring Educational Qualifications

“the question of how to measure education and qualifications – or indeed what ‘measure’ means – raises interesting issues…Since there is no agreed standard way of categorising educational qualifications”

(Prandy, Unt & Lambert 2004)
Educational Qualifications:

- Educational qualifications are a key social science measure included in an extremely wide variety of substantive analyses.

- Qualifications as an explanatory (X) variable:

  Qualification level is frequently used in statistical analyses as a key explanatory variable (usually with a number of other explanatory variables)

  This is usual in areas such as sociology, social policy and economics.
Educational Qualifications:

• Educational qualifications as an outcome (Y) variable:

In more specialist studies an educational measure is itself of interest as an outcome (for example gaining a specific qualification or level of attainment)

This is common in educational studies and within the sociology of education
Concepts and Measures

MEASURE
  e.g. qualifications

CONCEPT
  e.g. “ability”
Survey Datasets: Educational

• Specialist comparative educational datasets
  – (most notably PISA – Programme for International Student Assessment)

• National datasets
  – Specifically education oriented
    • Norwegian Youth Survey; Scottish Young People’s Survey - Hammer & Furlong 1996)
  – More general datasets on children and young people
    • Birth cohort datasets - Stockholm birth cohort of 1953 and British National Child Development Study 1958

• Administrative
  – Common in the Nordic countries
    • Recent example - English National Pupils Database (NPD)
Survey Datasets: General Surveys

• Census Data
  - Related products e.g. Scottish Longitudinal Study

• Labour Market Surveys
  - EU requirement to collect quarterly data
    (e.g. UK Labour Force Survey)
Survey Datasets: General Surveys

• General Household Surveys
  • Usually cross-sectional
  • UK General Household Survey (since 1971)
  • Increasing co-ordination (EU Statistics on Income and Living Conditions - EU-SILC)

• Household Panel Studies (repeated contacts)
  – A requirement within the EU
    • British Household Panel
    • German Socio-Economic Panel
  – but also other nations have datasets
    • USA Panel Study of Income Dynamics
    • Canada Survey of Labour and Income Dynamics
    • Australia Household Income and Labour Dynamics

• Other survey sources
  – e.g. Welsh Health Survey, 2007
### Some Examples of the 41 Categories

**Highest Qualification (General Household Survey 2003)**

<table>
<thead>
<tr>
<th>highest qualification</th>
<th>Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. higher degree</td>
<td>669</td>
</tr>
<tr>
<td>2. nvq level 5</td>
<td>20</td>
</tr>
<tr>
<td>3. first degree</td>
<td>1,416</td>
</tr>
<tr>
<td>4. other degree</td>
<td>278</td>
</tr>
<tr>
<td>5. nvq level 4</td>
<td>71</td>
</tr>
<tr>
<td>6. diploma in higher education</td>
<td>282</td>
</tr>
<tr>
<td>7. hnc/hnd btec higher etc</td>
<td>551</td>
</tr>
<tr>
<td>9. teaching - secondary education</td>
<td>55</td>
</tr>
<tr>
<td>10. teaching - primary education</td>
<td>69</td>
</tr>
<tr>
<td>12. nursing etc</td>
<td>267</td>
</tr>
<tr>
<td>14. other higher education below degree</td>
<td>151</td>
</tr>
<tr>
<td>21. scotish 6th year certificate/csys</td>
<td>24</td>
</tr>
<tr>
<td>28. city &amp; guilds craft/part 2</td>
<td>306</td>
</tr>
<tr>
<td>29. btec/scotvec first or gen diploma e</td>
<td>42</td>
</tr>
<tr>
<td>30. o level, gcse grase a*-c or equivalent</td>
<td>2,460</td>
</tr>
<tr>
<td>31. nvq level 1 or equivalent</td>
<td>102</td>
</tr>
<tr>
<td>33. gse below grade 1, gcse below grade</td>
<td>693</td>
</tr>
<tr>
<td>41. dont know</td>
<td>79</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24,489</strong></td>
</tr>
</tbody>
</table>
Analysing Social Surveys

- Grémy (1989) identifies three distinct categories of problems associated with undertaking cross-national work
  - Epistemological
  - Institutional
  - Technical

- These conceptual categories sensitised me to some of the problems of undertaking national and cross-national survey research
Analysing Social Surveys

• Epistemological
  – *Contextual understanding of the data collected* –
    (e.g. understanding the school system)

• Institutional
  – *Access to the data & access to auxiliary data*
    (e.g. school level data)
Analysing Social Surveys

• Technical
  - Design
  - Sampling (& coverage)
  - Documentation (code books)
  - Response Rates
  - Attrition (and non-response)
  - Interviewer Instructions
  - Questions (wording / social meaning)
  - Question Routing
Obvious Issues with Qualification Measures

Comparisons across time

• Changes in titles and levels
  – organisation and content of the curriculum
  – structure of educational systems

• Respondents from different age cohorts (e.g. younger and older people)

• Changes in distributions over time (e.g. the explosion in university level education)
Obvious Issues with Qualification Measures

Comparisons across geography

- National education systems
  - England and Eire similar but with different qualifications
  - UK and Germany quite different

- Within countries qualifications can be different
  - England and Wales, and Scotland
  - Swiss Cantons
School Level Qualifications in England and Wales

• General Certificate of Education GCE
• England and Wales (Not Scotland)

• Introduced in the 1950s
  – Ordinary Level (O'Level) (age 16)
  – Advanced Level (A'Level) (age 18)

• Some other related qualifications
  – AO Level - between O’Level and A’Level
  – S’Level, Scholarship level, or Special paper (more advanced)
School Level Qualifications in England and Wales

Changes...

- Mid 1960s lower but overlapping Certificate of Secondary Education (CSE) introduced alongside O’Levels
- 1988 O’Level and CSE replaced by General Certificate of Secondary Education (GCSE)
- 1987 Advanced Supplementary Levels (AS Level), worth ½ and A’Level (age 17)
- 2000 A’Level split into two parts,
  - AS Advanced Subsidiary (age 17)
  - A2 examinations (age 18)
  - Satisfactory achievement in AS and A2 modules results in the award of an A’ Level qualification
School Level Qualifications in England and Wales

Therefore

- Analysing English and Welsh social survey data with measures of school qualifications obtained over the last 50 years can be fraught

- Problem is amplified in cross-national

- In-depth knowledge of the education system is required

- Beware this is a simple example of school-level qualifications
  - Even more complicated with post-school
  - Training & vocational qualifications
Harmonisation is Possible

### CASMIN Brynin Example of BHPS & GSOEP

**Table 2:** The CASMIN Scheme Applied to the BHPS and GSOEP with Mean Years of Education (YoE)

<table>
<thead>
<tr>
<th>CASMIN Codes</th>
<th>BHPS scheme</th>
<th>BHPS (YoE)</th>
<th>GSOEP scheme</th>
<th>GSOEP (YoE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a: incomplete</td>
<td>Up to 6 years schooling</td>
<td>10.05</td>
<td>No qualification</td>
<td>≤ 9</td>
</tr>
<tr>
<td>1b: elementary</td>
<td>No qualifications + 7-11 YoE</td>
<td>11.15</td>
<td>Hauptschule certificate</td>
<td>9</td>
</tr>
<tr>
<td>1c: basic vocational</td>
<td>NVQ 1, no GCSEs</td>
<td>11.47</td>
<td>Above + basic apprentice training</td>
<td>12</td>
</tr>
<tr>
<td>2a: intermediate vocational (+ intermediate general)</td>
<td>NVQ 2 with or without GCSEs</td>
<td>11.96</td>
<td>Realschule certificate + basic apprentice training</td>
<td>13</td>
</tr>
<tr>
<td>2b: intermediate general</td>
<td>At least GCSE grade A-C</td>
<td>11.69</td>
<td>Realschule certificate</td>
<td>19</td>
</tr>
<tr>
<td>2c: general: general maturity certificate</td>
<td>NVQ 3 with or without A-level</td>
<td>13.16</td>
<td>Abitur</td>
<td>13</td>
</tr>
<tr>
<td>2c: vocational: voc. maturity (+ general maturity)</td>
<td>At least 1 A-level</td>
<td>13.05</td>
<td>Abitur + full apprenticeship</td>
<td>16</td>
</tr>
<tr>
<td>3a: lower tertiary</td>
<td>NVQ 4/teaching</td>
<td>14.71</td>
<td>Technical college degree</td>
<td>17</td>
</tr>
<tr>
<td>3b: higher tertiary</td>
<td>Degree</td>
<td>17.65</td>
<td>University degree</td>
<td>19</td>
</tr>
</tbody>
</table>

**Abbreviations:**
- GCSE = General Certificate of Secondary Education;
- NVQ = National Vocational Qualifications
* Not actual years of education but imputed from qualification level
Can e-Social science help us?

• Data discipline

• Data matching / merging

• Data access (confidential records)
  (future changes in access agreements)
Conclusions

• e-Social Science resources can help improve survey research
  – assist with access to disparate resources
  – help with data management (especially key variables)
  – help with data standard and best practice
  – help with replicability (and improve incremental science)
References


