

Data on educational qualification in national and cross-national research

Professor Vernon Gayle
University of Stirling & ISER University of Essex

Cross-Nationally Comparative Social Survey Research
24th June 2009, Cologne



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

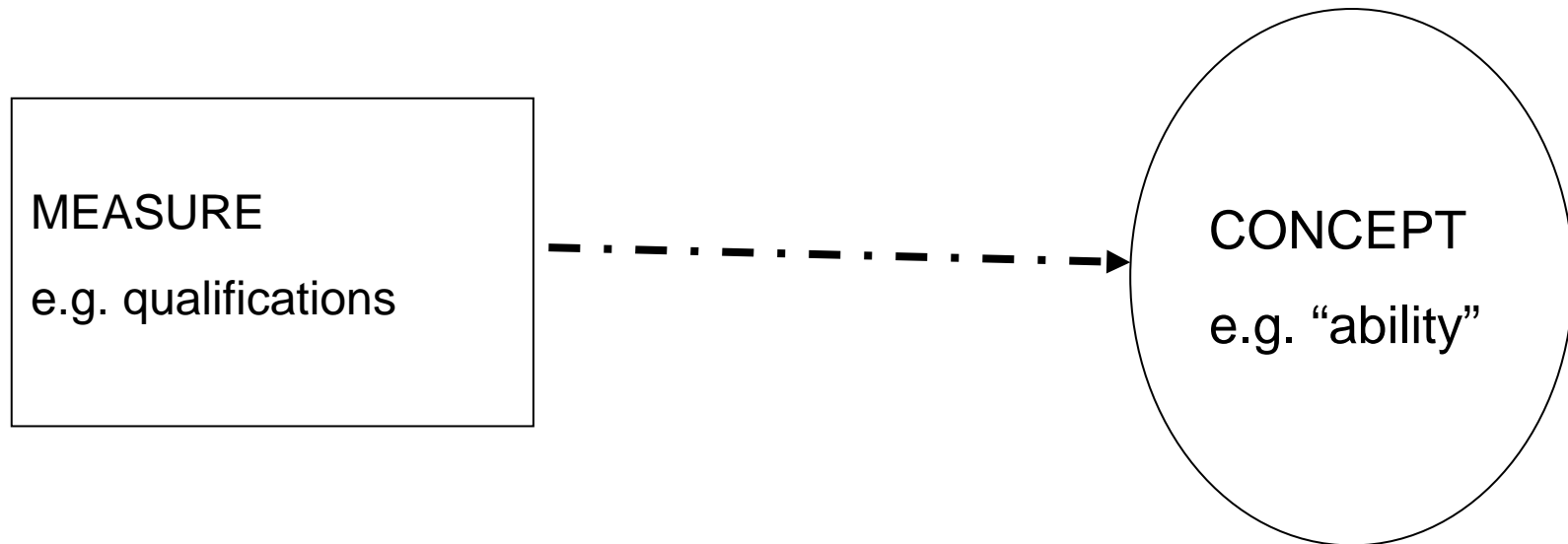
Educational Qualifications:

- 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



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

An example

Some Examples of the 41 Categories
Highest Qualification (General Household Survey 2003)

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

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)

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

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

Brynin, M. (2003) Using CASMIN: the effect of education on wages in Britain and Germany, in Hoffmeyer-Zlotnik, J. and Wolf, C., *Advances in Cross-National Comparison: A European Working Book for Demographic and Socio-Economic Variables*, Kluwer: Amsterdam, 327-44.

Gremy, J-P. (1989) 'Problemes de l'analyse secondaire', in Girard, A. and Malinvaud, E. (eds) *Les enquetes d'opinion et la recherche en sciences sociales*, Paris: L'Harmattan.

Hammer, T. and Furlong, A. (1996) "Staying on": the effects of recent changes in educational participation for 17-19 year olds in Norway and Scotland', *The Sociological Review*, 44:675- 691.

Prandy, K., Unt, M., & Lambert, P. S. (2004) 'Not by degrees: Education and social reproduction in twentieth-century Britain' *Paper presented at the ISA RC28 Research Committee on Social Stratification and Mobility*.