

Longitudinal Data Analysis for Social Science Researchers

Quantitative Longitudinal Research: References / Resources

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This file is also available from <http://www.longitudinal.stir.ac.uk/>.

Part 1: Texts / monographs

i) Introductions to Longitudinal Research Strategies

Abbott, A. 1995. "Sequence analysis: New methods for old ideas", *Annual Review of Sociology*. 21, 93-113 (*Specific discussion of the motivation for one type of longitudinal technique*).

Abbott, A. 2006. "Mobility. What? When? How?", in Morgan, S. et al *Mobility and Inequality*. Stanford: Stanford University Press. (*Accessible description of how longitudinal research methods have impacted upon the sociological study of social mobility*).

Arosio, L. 2004. "Occupational careers and longitudinal data: Tools and perspectives of research". *Quality and Quantity*. 38(4), 435-456. (*Focussed review of longitudinal methods for studying occupational careers*).

Dale, A. and R.B. Davies. (eds). 1994. *Analysing Social and Political Change : A casebook of methods*. London: Sage. ISBN: 0803982984. (*Clear descriptions of a series of methods of longitudinal analysis, in terms of social science examples*).

Davies, R.B. 1987. "The limitations of cross-sectional analysis", in *Longitudinal Data Analysis*. Edited by R. Crouchley. Aldershot: Avebury. ISBN: 0566055929. (*Although dated, this makes a concise review within a more widely useful edited collection*).

Davies, R.B. 1994. "From Cross-Sectional to Longitudinal Analysis", in *Analysing Social and Political Change*. Edited by A. Dale and R.B. Davies. London: Sage. ISBN: 0803982984. (*Excellent chapter in excellent book*).

Davies, R.B. 1994. "Statistical modelling for survey analysis". *Journal of the Market Research Society*. 35(3)235-47. (*Succinct introduction to the thinking behind statistical models, plus development of arguments favouring longitudinal quantitative survey data*).

Davies, R.B. and Pickles, A.R. 1985. "Longitudinal versus cross-sectional methods for behavioural research: a first-round knockout". *Environment and Planning A*, 17:1315-29. (*Accessible and succinct*).

Glenn, N. D. 2005. *Cohort Analysis, 2nd Edition*. London: Sage. (*Excellent, accessible discussion of cohort data with a focus on the distinction of age, period and cohort effects*).

Halaby, C. N. 2004 "Panel models in sociological research: Theory into practice". *Annual Review of Sociology*. 30, 507-544. (*Describes several relatively advanced analytical models*).

Hardy, M. and Bryman, A. (eds) 2004. *Handbook of Data Analysis*. London: Sage. ISBN: 0761966528. (See Part 3: *Longitudinal models*. Whilst the component chapters include more technical detail, their introductory sessions serve as accessible reviews).

Hedeker, D. 2004. "An Introduction to Growth Modelling", pp215-234 of *The SAGE Handbook of Quantitative Methodology in the Social Sciences*. Edited by Kaplan, D. London: Sage. ISBN: 0761923594. (Intermediate level description of Growth Curves – a particular class of panel models which are often operationalised through the 'multilevel modelling' framework).

Jenkins, S.P. and Siedler, T. 2007. *Using Household Panel Data to Understand the Intergenerational Transmission of Poverty*. Berlin: Discussion Paper 694 of DIW Berlin. (<http://www.diw.de/deutsch/produkte/publikationen/diskussionspapiere/docs/papers/dp694.pdf>)

Kemp, G.C.R. 1991. "The use of panel data in econometric analysis: a survey". *Working papers of the ESRC Research Centre on Micro-Social Change*, Paper 4. Colchester: University of Essex.

Maxim, P. S. 1999. *Quantitative Research Methods in the Social Sciences*. Oxford: Oxford University Press. ISBN: 0195114655. (This general text covers advanced techniques of data analysis and design, but has a useful short section pp155-162 discussing problems with longitudinal survey designs).

Mayer, K-U. 2000. "Promises fulfilled? A review of 20 years of life-course research". *Archives Europeennes de sociologie*. 41(2)259.

Mayer, K-U. 2005. "Life courses and life chances in a comparative perspective", in Svallfors, S. (ed) *Analyzing Inequality*. Stanford: Stanford University Press. ISBN: 0804750963. (Substantively driven text, discussing the role of longitudinal methods for summarising the life course in social stratification research).

Menard, S. 2002. *Longitudinal Research, 2nd Edition*. London: Sage. ISBN: 0761922091. (Popular and reasonably accessible review of longitudinal research methods).

Rose, D. and Sullivan, O. 1996. *Introducing Data Analysis for Social Scientists*. London: Open University Press. ISBN: 0335196179. (Beginner's textbook on data analysis, chapter 12 introduces longitudinal research strategies and references the BHPS).

Ruspini, E. 2002. *An Introduction to Longitudinal Research*. London: Taylor and Francis. ISBN: 0415260086. (This text has a few weaknesses, but overall it does a decent job of introducing longitudinal survey research at a non-specialist level).

Skinner, C.J. 2003. "Introduction to Part D: Longitudinal Research", pp197-204 of *Analysis of Survey Data*. Edited by R.L. Chambers and C.J. Skinner. New York: Wiley. ISBN: 0471899879. (Only a short summary introducing more detailed sections, but covers many significant issues in longitudinal analyses).

Solga, H. 2001. "Longitudinal surveys and the study of occupational mobility: Panel and retrospective design in comparison," *Quality & Quantity* 35 (3): 291-309. (Helpful discussion of relative merits of panel and retrospective data collections, though heavily contextual to studies of the labour market).

Wheaton, B. 2003. "When methods make a difference". *Current Sociology*. 51(5)543-72. (Many of the examples used in this general discussion of social science methodology are concerned with longitudinal data resources).

Willet, J.B. and Singer, J.D. 2004. "Discrete-Time Survival Analysis", pp199-211 of *The SAGE Handbook of Quantitative Methodology in the Social Sciences*. Edited by Kaplan, D. London: Sage. ISBN: 0761923594. (A quick review of the methods and merits to survival analysis techniques).

ii) Detailed Longitudinal Methods guidance

Aitkin, M. et al. 1989. *Statistical Modelling in GLIM*. Oxford: Clarendon Press. (*Guide to GLIM software, less widely used package but one that still offers many longitudinal analysis methods*)

Allison, P.D. 1984. *Event History Analysis: Regression for Longitudinal Event Data*. Beverley Hills: Sage. (*Highly influential textbook on event history methods*).

Baltagi, B. H. 2001. *Econometric Analysis of Panel Data*. New York, Wiley. (*Popular economics textbook, but quite advanced / difficult*)

Barry, J., B. Francis, and R. Davies. 1990. *Software for the Analysis of Binary Recurrent Events : A guide for users*. Lancaster: Centre for Applied Statistics, Lancaster University. (*Guide to a free package, SABRE, suited to certain forms of longitudinal modelling – see also <http://www.cas.lancs.ac.uk/software/sabre/sabre.html>*).

Blossfeld, H-P, A. Hamerle, and K. U. Mayer. 1989. *Event History Analysis*. Hillsdale, New Jersey: Lawrence Erlbaum Associates. (*Comprehensive textbook*).

Blossfeld, H-P and G. Rohwer. 2002. *Techniques of Event History Modelling: New Approaches to Causal Analysis, 2nd Edition*. Mawah, NJ: Lawrence Erlbaum Associates. (*Outstanding introduction to event history methods and to associated, free, TDA software*).

Blossfeld, H.P., Grolsch, K. and Rohwer, G. 2007. *Event History Analysis with Stata*. New York: Lawrence Erlbaum.

Box-Steffensmeier, J. M. and Jones, B. S. 2004. *Event History Modelling: A Guide for Social Scientists*. Cambridge, Cambridge University Press. (*Features Stata and S-plus software information*).

Chambers, M. L. and Skinner, C. J. (eds). 2003. *Analysis of Survey Data*. New York, Wiley. (*Part 4 of this book concerns a selection of issues in the analysis of longitudinal surveys, including random effects panel models, event history models, and analyses of transitions*).

Cleves, M., W. W. Gould, and R. Gutierrez. 2004. *An Introduction to Survival Analysis Using Stata, Revised edition*. College Station, Texas: Stata Press. (*Introductory textbook on event history focussed upon Stata software*).

Dale, A. and Davies, R.B. 1994. *Analyzing Social and Political Change: A casebook of methods*. ISBN: 0803982984. (*Clear descriptions of a series of specific methods of longitudinal analysis*).

Engel, U. and J. Reinecke. 1996. *Analysis of Change : Advanced Techniques in Panel Data Analysis*. New York: Walter de Gruyter. (*Difficult text to read, but a good range of topics covered*).

Finkel, S. E. 1995. *Causal Analysis with Panel Data*. Newbury Park, Ca., Sage. (*Useful and concise statement of a variety of panel model options, concentrating on structural equation modelling formats*).

Firebaugh, G. 1997. *Analyzing Repeated Surveys*. Newbury Park, Ca., Sage. (*Excellent exploration of techniques for analysing repeated cross-sectional surveys*).

Gilbert, G.N. 1993. *Analyzing Tabular Data : Loglinear and logistic models for social researchers*. London: UCL Press. (*It is often forgotten that simple forms of longitudinal have long been amenable to loglinear modelling approaches. Gilbert's book remains one of the best available introductions, whilst Hagenaars – below - covers these topics in much more depth*).

Goldstein, H. et al. 1998. *A user's guide to MLwiN*. London: Multilevel Models Project, Institute of Education, University of London. (*See sections on variance components panel models, growth curves, and hierarchical clustering in longitudinal designs*).

- Greenacre, M. and Jorg Blasius. 1994. *Correspondence Analysis in the Social Sciences : Recent developments and applications*. London: Academic Press. (*Correspondence Analysis is a widely used technique for describing data relationships that is particularly popular in France. In part 3 of this edited book, examples are given of how longitudinal event history and panel data formats can be analysed with correspondence analysis techniques*).
- Hagenaars, J. A. P. 1990. *Categorical Longitudinal Data : Log-Linear Panel, Trend and Cohort Analysis*. Newbury Park: Sage. ISBN: 0803958986.
- Halpin, B. 1998. "Unified BHPS work-life histories : Combining multiple sources into a user-friendly format," *Bulletin de Methodologie Sociologique* 60: 34-79. (*Describes data manipulation necessary for this complex dataset*).
- Hardy, M. and Bryman, A. (eds) 2004. *Handbook of Data Analysis*. London: Sage. ISBN: 0761966528. (*Part 3, 'Longitudinal models', has a sequence of chapters describing a variety of longitudinal models for both panel and event history data*).
- Kasprzyk, D. et al. 1989. *Panel Surveys*. New York: Wiley. (*Influential edited collection, contained the most detailed references on many topics for some time*). ISBN: 0471625922
- Rabe-Hesketh, S. and B. Everitt. 2004. *A Handbook of Statistical Analyses using Stata, 3rd edition*. New York: Chapman & Hall. ISBN: 1-58488-405-5. (*Extremely helpful STATA introductory text, including several chapters illustrating longitudinal methods*).
- Rabe-Hesketh, S. and A. Skrondal. 2005. *Multilevel and Longitudinal Modelling Using Stata*. College Station, Texas: Stata Press. ISBN: 1-59718-008-5. (*Stata guide focussing on long-format panel models*).
- Rose, D. (ed). 2000. *Researching Social and Economic Change : The uses of household panel studies*. London: Routledge. ISBN: 1857285468. (*Accessible methodological discussions from various authors on complex issues in data management and analysis with panel surveys*).
- Scott Long, J. and Freese, J. 2006. *Regression Models for Categorical Dependent Variables using STATA, 2nd edition*. College Station, Tx: Stata Press. ISBN: 978-1-59718-011-5. (*Advanced but helpful guidance on a particular group of regression models, which a small number of applications specific to longitudinal data*).
- Skrondal, A. and Rabe-Hesketh, S. 2004. *Generalized Latent Variable Modelling: Multilevel, Longitudinal and Structural Equations Models*. New York: Chapman and Hall. ISBN: 1-58488-000-7. (*Advanced, dense text which summarises a wide array of statistical models which may be used for longitudinal analyses, highlighting the connections between them*).
- Singer, J.D. and Willett, J.B. 2003. *Applied Longitudinal Data Analysis: Modelling change and event occurrence*. New York: Oxford University Press. ISBN: 0-19-515296-4. (*Wide coverage illustrating a selection of relatively advanced analytical strategies – though not as much pragmatic guidance as the title might suggest*).
- Taris, T. W. 2000. *A Primer in Longitudinal Data Analysis*. London: Sage. ISBN: 0761960260. (*Excellent accessible explanation of most Panel Analysis methods*)
- Tuma, N. 1994. "Event History Analysis". In *Analysing Social and Political Change* Edited by A. Dale and Richard B. Davies. London: Sage. ISBN: 0803982984. (*Particularly accessible as a quick guide on event history data*).
- Venables, W. N. and B. D. Ripley. 1999. *Modern Applied Statistics With S-PLUS*. New York: Springer-Verlag. (*Handy starting point for the complex S-Plus and R languages – general guide to working with the packages, but including specific longitudinal methods information*)

van der Zouwen, J. and T. van Tilburg. 2001. "Reactivity in Panel Studies and Its Consequences for Testing Causal Hypotheses," *Sociological Methods & Research* 30 (1): 35-56. (*Discussion of potential design problems in panel data analysis*).

Vandecasteele, L. and Debels, A. 2007. 'Attrition in Panel Data: The Effectiveness of Weighting'. *European Sociological Review* 23: 81-97.

Vermunt, J. K. 1997. Log-linear models for event histories. London: Sage. ISBN: 0761909370. (*extensive, and difficult, discussion on one variety of event history model*).

Vermunt, J. K. 1997. *IEM : A general program for the analysis of categorical data*. Tilburg, Netherlands: Tilburg University. (*IEM is a very powerful freeware for analysing categorical data, some forms of which are easily adapted to event history analyses*).

Yang, Y., Fu, W. J., and Land, K. C. 2004. "A Methodological Comparison of Age-Period-Cohort Models: The Intrinsic Estimator and Conventional Generalized Linear Models". *Sociological Methodology*. 34(1), 75-110. (*Advanced discussion of one particular issue in longitudinal research, that of distinguishing the effects of age, period and cohort*).

iii) Longitudinal Data Resources

Blackwell, L. 2001. "Women's work in UK official statistics and the 1980 reclassification of occupations". *Journal of the Royal Statistical Society, Series A*. 162(2)307-325. (*Discussion of data quality issues – the consistency of meaning over time - in longitudinal research*).

Blackwell, L., Akinwale, B., Antonatos, A., and Haskey, J. 2005. "Opportunities for new research using the post-2001 ONS Longitudinal Study". *Population Trends*. 121, 8-16.

Gershuny, J. 2002. "Editorial: Co-ordinating Longitudinal Survey Data in the UK: Towards a National Strategy" *Journal of the Royal Statistical Society, Series A : Statistics in Society* 165 (1): 3-7.

Halpin B. 1998. Unified BHPS work-life histories : Combining multiple sources into a user-friendly format. *Bulletin de Methodologie Sociologique* 60: 34-79

Halpin B. 2002. *British Household Panel Survey Combined Work-Life History Data, 1990-1999 [computer file]*. 3rd ed, Economic and Social Research Council Research Centre on Micro-Social Change, University of Essex, Institute for Social and Economic Research; distributed by The Data Archive, University of Essex, Colchester.

Martin, J., Bynner, J., Kalton, G., Boyle, P., Goldstein, H., Gayle, V., Parsons, S. and Piesse, A. 2006. *Strategic Review of Panel and Cohort Studies: Report to the Research Resources Board of the Economic and Social Research Council*. London: Longview, and <http://www.longviewuk.com/pages/publications.shtml>.

Smith, K. and Joshi, H. 2002. "The Millenium Cohort Study". *Population Trends*. 107:30-4.

Rose, D. (ed). 2000. *Researching Social and Economic Change : The uses of household panel studies*. London: Routledge. ISBN: 1857285468. (*Accessible methodological discussions referencing a number of major panel surveys*).

UK Data Forum 2007. *The National Strategy for Data Resources for Research in the Social Sciences*. Warwick: University of Warwick, <http://www2.warwick.ac.uk/fac/soc/nds/> (Accessed 18 June 2007).

iv) Selected Research Examples

Berthoud, R. and J. Gershuny. 2000. *Seven Years in the Lives of British Families*. London: Policy Press (in association with The Institute for Social and Economic Research, University of Essex). (*Accessible recent collection of BHPS analyses*).

Blossfeld, H-P and S. Drobnic. 2001. *Careers of Couples in Contemporary Societies : From Male Breadwinner to Dual Earner Families*. Oxford: Oxford University Press. (*Cross-national comparisons of labour market event history analysis*).

Buck, N. et al. 1994. *Changing Households : The BHPS 1990-1992*. Colchester: ESRC Research Centre on Micro Social Change. (*Early review of BHPS possibilities*).

Davies, R.B., Elias, P. and Penn, R.D. 1992. "The relationship between a husband's unemployment and his wife's participation in the labour force". *Oxford Bulletin of Economics and Statistics*. 54(2)145-71.

Gayle, V., D. Berridge and R.B. Davies. 2003. *Econometric Analysis of the Demand for Higher Education*. London: Research Report RB472 for the Department for Education and Skills, and <http://www.dfes.gov.uk/research/data/uploadfiles/RR472.pdf>

Gershuny, J. 2004. "Domestic equipment does not increase domestic work: A response to Bittman, Rice and Wajcman". *British Journal of Sociology*. 55(3), 425-431. (*Illustration of benefits of longitudinal data – cross-sectional analyses show a spurious relationship which only longi.*

Halpin, B. and Chan, T.W. 1998. "Class careers as sequences: An optimal matching analysis of work-life histories". *European Sociological Review*. 14(2)111-30. (*How longitudinal event history data can be used to describe and classify life-course sequences*).

Jacobs, S. 2002 "Reliability and Recall of Unemployment Events Using Retrospective Data," *Work, Employment and Society* 16 (3): 537-548.

Lambert, P.S., Prandy, K. and Bottero, W. 2007. 'By Slow Degrees: Two Centuries of Social Reproduction and Mobility in Britain'. *Sociological Research Online* 12.

Mirowsky, J. and Ross, C.E. 2003. *Education, Social Status and Health*. New York: Aldine de Gruyter. ISBN: 0-202-30707-7. (*Typical example of the use of a longitudinal follow-up survey from an originally cross-sectional study*).

Mouw, T. 2002. "Racial differences in the effect of job contacts: Conflicting evidence from cross-sectional and longitudinal data". *Social Science Research*. 31(4)511-38. (*Illustration of how our discussions of causality require longitudinal information on temporal order*).

Pahl, R. and Pevalin, D. 2005. "Between family and friends: a longitudinal study of friendship choice". *British Journal of Sociology*. 56(3), 433-450. (*This paper uses fairly straightforward analysis techniques, but required some complex data management exercises on the BHPS to set it up*).

Platt, L. 2005. *Migration and Social Mobility: The Life Chances of Britain's Minority Ethnic Communities*. Bristol: The Policy Press (*Uses the UK Census Longitudinal Study*).

Rabe, B. (2006) "Dual-earner Migration in Britain. Earning gains, employment, and self-selection", Institute of Social and Economics Research Working Paper 2006-01, University of Essex.

Taylor, M. (2006) "Tied Migration and Subsequent Employment: Evidence for Couples in Britain", ISER Working Paper 2006-05, University of Essex, Colchester.

Part II: Selected Internet resources:

Guides to access to longitudinal datasets:

ISER Keeping Track project: <http://www.iser.essex.ac.uk/ulsc/projects/ldr4ss/>

UK Data Archive: <http://www.data-archive.ac.uk/>

Economic and Social Data Service: <http://www.esds.ac.uk/> (see esp. 'ESDS Longitudinal')

UK Question Bank: <http://qb.soc.surrey.ac.uk/>

Major Longitudinal Data Resources:

British Household Panel Study: <http://iserwww.essex.ac.uk/ulsc/bhps/>

NCDS, BCS and MCS: <http://www.cls.ioe.ac.uk/text.asp>

UK Census : <http://census.data-archive.ac.uk/>

ESDS International (with macro-economic time series') : <http://www.esds.ac.uk/international/>

National Statistics Time Series Data: <http://www.statistics.gov.uk/statbase/tsdglossary.asp>

PSID (longest running national panel social survey, USA) : <http://psidonline.isr.umich.edu/>

GSEOP (German Socio-Economic Panel study) (exemplary webpages and support services): <http://www.diw.de/english/sop/>

ECHP (European Community Household Panel, 1994-2001) : <http://www.forum.europa.eu.int/Public/irc/dsis/echpanel/home> (limited website)

LIS (internationally harmonised repeated cross-sectional labour force surveys) : <http://www.lisproject.org/>

IPUMS (internationally harmonised repeated cross-sectional census's): <http://www.ipums.org/>

European Social Survey (repeated cross-sectional cross-national): <http://www.europeansocialsurvey.org/>

ISSP (repeated cross-sectional cross-national): <http://www.issp.org/homepage.htm>

CHER : <http://www.ceps.lu/cher/data.cfm>

PanelWhiz: <http://www.panelwhiz.eu/> (an extremely useful specialist software – a 'charityware' - for panel data construction and data linking in Stata, currently implemented for the German, US, Australian and British household panel surveys).

Selected Teaching and Learning Materials:

Longitudinal Data Analysis (Stirling University): <http://www.longitudinal.stir.ac.uk/>

Research Methods Programme: <http://www.ccsr.ac.uk/methods/>

Centre for Applied Statistics (short course materials online, and national training and consultancy service): <http://www.cas.lancs.ac.uk/>

UK Longitudinal Studies Research Centre (Essex): <http://www.irc.essex.ac.uk/ulsc/>

TRAMSS (exemplar longitudinal analyses using 'SABRE' and 'MIwiN' software): <http://tramss.data-archive.ac.uk/Software/index.asp>

CENMAP ('masterclasses' in longitudinal methods, oriented towards economics students): <http://cemmap.ifs.org.uk/events.php>

PEAS (Practical Exemplars in the Analysis of Surveys) (features detailed SPSS, Stata, R and SAS programming guides) <http://www.napier.ac.uk/depts/fhls/peas/>

SOSIG (see eg 'internet for social statistics'): <http://sosig.ac.uk/>

Research Capacity Building Network (training for Education researchers): <http://www.trp.org/capacity/rcbn.html>

Population Studies Centre, University of Western Ontario, Longitudinal side (includes links to teaching materials, sociology course on longitudinal research): <http://www.ssc.uwo.ca/sociology/longitudinal/>

Research Projects of Interest:

PISA and TIMMS (cross-national repeated cross-sectional studies in educational research) : <http://www.pisa.oecd.org/> ; <http://nces.ed.gov/timss/>

CAMSIS / GEODE (Occupational information over time): <http://www.camsis.stir.ac.uk>
<http://www.geode.stir.ac.uk/>

EuroPanel Users Network: <http://epunet.essex.ac.uk/>

Social Stratification Research Seminar 2007 (theme was 'Longitudinal research in social stratification'): <http://www.camsis.stir.ac.uk/stratif/>