The effects of job loss and re-employment on men’s mental health: Causation or selection?

Fiona Steele and Robert French, LEMMA 3 node, University of Bristol
Mel Bartley, ESRC International Centre for Lifecourse Studies, UCL

Previous research suggests that there is a strong association between unemployment and mental health, but can we infer a causal effect of unemployment on subsequent ill health?

To what extent can the relationship be explained by selection of less healthy men into unemployment or by unmeasured characteristics that affect both health and the risk of unemployment?

There is substantial interest in understanding the association between labour force participation and mental health. Longitudinal data from panel studies allow detailed examination of how changes in employment status relate to changes in health over time, but selection bias remains a serious threat to causal inference. Selection into unemployment may be conceptualised as occurring by two distinct mechanisms: direct and indirect selection. Direct selection asserts that poor health leads to difficulty in securing and maintaining employment, which leads to an over-representation among the unemployed of less psychologically healthy individuals. Indirect selection, on the other hand, occurs when there are unmeasured individual characteristics that influence both health and the risk of unemployment. The standard approach taken to allow for direct selection is to adjust for health measured before the experience of unemployment. Adjustment for indirect selection is usually achieved by including indicators of family background, but such information is limited in panel studies which began in adulthood.

We have developed a framework for studying the relationship between men’s employment transitions and their mental health that allows us to test for both direct and indirect selection effects. We used annual data from the British Household Panel Survey for 1991-2009. Mental health was measured using the General Health Questionnaire (GHQ) and employment status was classified as employed, economically inactive or unemployed.

Employment transitions were identified by comparing an individual’s status at two consecutive interviews. We estimate two models simultaneously: a model for the effect of annual change in employment status on GHQ at the start of the following year, and another for the effect of GHQ on subsequent employment change. The two models are linked to allow for unmeasured individual factors that affect both employment and GHQ. We also consider simpler models to explore the impact of successive adjustments for selection bias on estimates of the impact of employment change on GHQ.

We find that moving out of unemployment into employment is strongly associated with an improvement in mental health, while becoming unemployed is detrimental for mental health. Although these effects are slightly inflated if indirect selection is ignored, they remain substantial following adjustment. For example, job loss is associated with half a standard deviation change in the GHQ score. There is a much stronger impact of allowing for indirect selection on estimates of the effect of moving between employment and economic inactivity, which is expected due to the high proportion of inactive men who are long-term sick or disabled. There is little evidence of direct selection by poorer pre-existing mental health; GHQ has a weak effect on any type of employment transition.

Future work should seek to understand the pathways through which the experience of unemployment influences mental health. For example, is most of the effect due to financial hardship following job loss? It is also important to consider differential effects of employment change. Previous research has found that men with higher status jobs suffer a worse reaction to unemployment than those in less prestigious occupations. The effect of employment change may also differ for men and women.

Adjusting for selection bias in longitudinal analyses of the relationship between employment transitions and mental health using simultaneous equations modelling, Epidemiology (in press).
Family lives and the environment: Narratives across countries

Janet Boddy, NOVELLA node, University of Sussex

In a time of global concern about the impact of climate change on our everyday lives and environments, governments and international organisations often make policies about the environment which emphasise what individuals and families should do to help, but without accounting for the complexity of our social worlds.

Researchers in the NOVELLA node of NCRM are grappling with these concerns, to improve understanding of the negotiated complexity of families’ lives in relationship with their environments. As with other studies in the NOVELLA node, Family Lives and the Environment is applying narrative methods and linked approaches to the study of varied everyday lives. Family Lives and the Environment is also a cross-national study, involving collaboration between NOVELLA researchers at the Institute of Education and University of Sussex, and researchers on Young Lives (core funded by DFID) at the University of Oxford and Sri Padmavathi Mahila Viswavidyalayam University in India.

Learning from difference: India and the UK

Policy makers often seek to learn from countries which are seen to be similar in population or in economic approach. This approach can, however, neglect important differences between apparently similar countries, whilst missing opportunities for shared learning between north and south. Globally, understandings and responses to climate change are likely to intersect with affluence, urban/rural location, and family members’ individual and collective understandings of the (dis)connections between environment and everyday lives.

The Family Lives and Environment study explores the potential to ‘learn from difference’ – not through direct comparison of very different country contexts, but through parallel family case studies. The study seeks to exemplify the variety of families’ lived experiences within and between countries, rather than to be representative of family life in India or the UK. The research began with a narrative re-analysis of eight family case studies from Young Lives qualitative research in Andhra Pradesh, examining ways in which environmental concerns were woven into daily lives, and informing methodological development for new fieldwork in India and the UK, with 24 families of young people in their seventh year of formal schooling (usually aged 11-12 years).

Families include boys and girls, living in rural and urban areas, and those who are relatively affluent or poor, or of middle income, within their country context.

Understanding the complexity of everyday lives

The fieldwork team have completed six urban case studies in India, and the team have just moved to a rural area to continue their work. They are combining individual, family and school-based interviews with joint mapping of key places in families’ lives, photography (parent, child and family), a participant led mobile interview in the local area. The mix of methods and perspectives, along with repeated visits to the family over a period of 10 days, is generating a rich, layered understanding of family lives and practices.

One challenge in researching the habitual is that most things we do regularly are taken for granted – given little thought and not readily remembered. Mixing methods can help to address that challenge. The local walk, for example, highlights places that do not feature on families’ maps, places used habitually but infrequently, such as a shop used only if necessary between weekly supermarket trips. The walk to the shop, along a fast-moving noisy urban road, showed why this was not a favoured choice. ‘Big’ environmental concerns also intersect with ‘small’, quotidian and local environmental concerns within families’ narratives and practices – both more distantly, in terms of social responsibility and normative discourses, and more immediately, in aspects of everyday life such as shopping, travel and play.

For further information about NOVELLA node of NCRM, please go to their website http://www.novella.ac.uk

Photo: Unusual weather patterns were said by one family to have increased the price of flowers, so the mother had stopped her usual daily practice of wearing jasmine in her hair.
Researchers are often interested in data reduction and the derivation of meaningful summaries from a large number of observations. This can become a very challenging endeavour, especially when longitudinal data are involved.

As part of the Pathways node we are interested in the effect that marital status trajectories over the life course may have on subsequent health. We are investigating the indirect pathways (via fertility, social support, socio-economic position and health related behaviours) through which marital status influences health, as well as the effect that childhood circumstances and health have on the mechanism that underlies the association between marital status and health.

Vital for this project is the definition and characterisation of a longitudinal typology of marital status that takes into account its heterogeneity over time. For many research problems the assumption that all respondents follow a broadly similar trajectory is plausible. However, where theory or previous research suggests that the population is heterogeneous, in the sense that distinct groups of individuals pursue qualitatively different trajectories, this can be problematic. This is particularly true for marital status trajectories, which may include individuals whose trajectories follow distinct dynamic pathways.

Within the Generalised Latent Variable Modelling framework two related techniques that assume the trajectories are unknown but can be inferred from observed indicators of marital status over time have been proposed: Latent Class Growth Analysis (LCGA) and Growth Mixture Modelling (GMM). Both techniques probabilistically allocate individuals to a trajectory based on their pattern of responses, in this case the marital status in four different sweeps of the National Child Development Study (NCDS).

Even if these identified trajectories do not represent reality exactly this approach can be viewed as an evidence-based approximation that can be used to draw attention to potential causes and consequences of different trajectories, improving a researcher’s ability to identify, summarize, and communicate complex patterns in longitudinal data. Applications of this approach include, among others, models of depressive symptoms, functional limitations, physical activity and social mobility.

LCGA and GMM have many advantages that allow researchers a great deal of flexibility. A distinct advantage is that they allow for principled approaches to missing data handling, with both full information maximum likelihood and multiple imputation being available. This allows the inclusion in the analyses of participants with missing information on marital status in one or more sweeps of the NCDS, assuming a missing at random mechanism. However, if evidence for the operation of non-random mechanisms is suspected, approaches such as the Diggle-Kenward selection model can be used.

We have described how change over time of a demographic characteristic can be modelled flexibly while simultaneously testing hypotheses linking exposures and outcomes of this process. Parallel modelling of biological and social processes is also possible and is a very promising approach that could enhance our understanding of the biosocial pathways that lead to health and health disadvantage.

References

Analyzing food blogs: developing means of understanding online communication

Gunther Kress, Carey Jewitt, Myrrh Domingo and Elisabetta Adami, MODE node, Institute of Education

Contemporary online spaces offer a rich field for the study of rapidly changing forms of communication. Existing platforms provide, permit and demand textual design using the platforms’ digital resources. These can be shaped for personal use, or more widely for social interaction and dissemination, such as Twitter, Facebook and many others. Laptop or desktop computers as well as some portable devices can both produce and interact with such sites. Portable devices such as smartphones and tablets are commonly used for such communication. These media afford an increasing use of image - still or moving, of video, of music, all working together with speech and writing. In that, they present questions for researchers of communication, online interaction, and those working with digitally produced data. As yet, no established frameworks, no agreed sets of terms and categories for description and analysis have been developed adequately to describe and analyze these technologies in their use.

In collaboration with the NOVELLA node of NCRM, one aim is to establish a framework to describe ways in which people shape meanings and construct communities and identities in these digitally produced, often ephemeral environments of media, genre, discourses, topics. Studying blogs, as one social media practice, can show how communication in digital media draws from and extends both beyond traditional principles of composition and beyond canonical uses of writing. The theoretical approach is that of social semiotics and multimodality.

Our third, and central, methodological concern is to demonstrate the potentials and constraints of a multimodal social semiotic analysis in researching online media more widely: where the study of blogs can be seen as a testing ground.

What is the focus of a social semiotic multimodal framework and what makes it significant for the analysis of blogs?

Social Semiotics is concerned with all aspects of meaning and meaning production. In this it focuses on those who are involved in the practices of making meaning – the social issues of agency, of identity and of power – and the tools and resources available in this and the processes of their constant re-shaping. Multimodality deals with the focus on the multiplicity of resources for making meaningful or tangible (‘modes’) – going well beyond speech and writing. This makes the approach attractive and maybe essential in media which draw on that multiplicity of resources: on video, on photos, on writing, on music-as-sound, on sound-as-sound track, on colour, and on the potentials of layout for making meaning.

The blog, realized in a ‘social media’ platform, is composed of a variety of genres aimed at constructing an audience. ‘Bloggers’ produce a range of meanings, in part to ‘personalize’ their blogs, in part to increase social reach. Researching a corpus of food blogs, we discern characteristics about their aesthetics and functions that make them a distinctive genre of online composition and communication. In that, it is possible to trace continuous change: for instance, ‘early’ blogs produced at the beginning of these media forms resonated with the genre of a diary. Bloggers as designers become more ‘expert’, and bloggers as social actors use that expertise to shape identity and audience, and transform an existing genre, the ‘diary’, seen as entirely private, to a different genre, the ‘blog’, which erases the firm line of ‘private’ and ‘public’. This is a part of a present ethical issue: as a social medium, the blog is a public forum and aims to construct a wider community. The blog was never conceived to remain private as ‘diaries’ were, yet it carries traces of ‘the private’ with it, at least for some.

With the introduction and popularity of other, distinct social networking sites such as Twitter, Facebook and LinkedIn, Pinterest, blogging can become closely linked to other social media: blogs now often have (social networking) widgets that allow readers to subscribe to the blogger’s Twitter, Facebook, LinkedIn and Pinterest profile. This integration of other social networking sites into the blog has an impact on the design of blogs and on the ‘reach’ and potentials of blogs. So blogs today are used as company websites, research repositories and professional portfolios. We aim to offer a preliminary research sketch, using blogs as a site of emergence of contemporary textual production, to develop a social semiotic multimodal approach as a generally useable resources for studying online communication.

This work is carried out as a collaborative project between the MODE and NOVELLA nodes of the NCRM. For further information about MODE training, seminars and resources please see http://mode.ioe.ac.uk/

References

1 Platforms such as Blogger http://www.blogger.com and Wordpress http://wordpress.com/

Advanced research methods training in the UK

Sean Moley and Rose Wiles, NCRM Hub, University of Southampton

Traditional ‘face-to-face’ short courses are regarded as the most effective means of building capacity in research methods among the UK’s social science research community.

This is one of the conclusions from NCRM’s most recent report on the current provision of advanced research methods training in the UK. We interviewed sixteen key stakeholders in the UK social science research for their views on research methods training provision.

The high regard for traditional ‘face-to-face’ short courses endures mainly due to its perceived flexibility, the potential immediacy of its response to the learning needs of researchers and the positive benefits of the social interaction it promotes and supports, between different learners and between learners and teachers.

Enthusiasm for alternatives to face-to-face training such as online provision is tempered by the development costs in both money and time, as well as lingering doubts that the richness of the learning experience can ever match face-to-face training. The undoubted strengths of online and multimedia provision were often seen as best exploited as adjuncts to ‘face-to-face’ short courses - online instruction in prerequisite knowledge and skills prior to attending, online forums to facilitate learner and teacher communication, both before and after training, or multimedia provision being actively incorporated into ‘face-to-face’ short courses.

With regard to the assessment of needs in research methods training, we posed the question of whether these needs were best assessed at a strategic level or whether they should stem from the ‘grass-roots’ from the researchers who are currently funded by research councils and the training needs that they feel stem from their research activity. The value of both approaches is clear and often the weakness of one is seen as the strength of the other. Needs must be determined at a strategic level if training is to deal at a national level with gaps in provision and with areas of perceived weakness. It is also true that progress at the cutting edge of research can only continue if training needs that stem from this activity are addressed, and these needs may differ from strategic needs identified at a national level.

Some of those interviewed felt that those with the best grasp of the national strategic need might not be best placed to appreciate the needs that arise at the cutting edge of research and vice versa.

Some concerns were also raised that individual researchers may not necessarily be as thorough and exacting as one might hope if left to determine their own training needs. Some may choose to focus on the training they ‘want’ rather than what they ‘need’ and may choose to stay within their existing comfort zone when it comes to availing of training in new research methods. It was felt that particularly early career researchers should work with their supervisors, managers or mentors to develop personal training needs assessments that challenge them to expand their methodological repertoires in ways that equip them to undertake a broad range of research activity.

Closely related to the issue of training needs is the issue of funding: How can funds be distributed to best effect among providers of research methods training?

We posed a question to our interviewees regarding their views on two contrasting approaches – a block grant to providers who then provide free or highly subsidised training in specific areas of need, or bursaries supplied directly to learners so that they can pay the market rate to avail of whatever training they feel is appropriate. The block grant approach was seen as the best means of targeting training to meet national strategic needs and doubts were expressed as to whether a free market in training could achieve the same effect.

Those with particular concerns about a free market were worried that providers could cherry pick the most popular and most lucrative topics, but not necessarily the most important or advanced, and that training courses in important topics might not be commercially viable if only a small group of specialist researchers were interested. The administrative burden was also seen as a key drawback to distributing funds via bursary system.

Those who favoured a more free market approach saw in it the means of shaking up research methods training provision and challenging providers to provide training that better meets both the particular needs of individual researchers and the training needs that stem from actual research. Concerns were also expressed that free or low cost training provided under block grant funding undermines attempts by HEIs to provide sustainable programmes of training that are priced at levels that make them viable in the long term.

To read the full report ‘Advanced research methods training in the UK: Current provision and future strategies’ go to http://eprints.ncrm.ac.uk/2970/
Are you sure the two groups are comparable? Selection in evaluation questions

Monica Costas Dias, PEPA node, Institute for Fiscal Studies

Methods News Spring 2013

The study of causal effects has a long and well established tradition in economics. For a long time, researchers have tried to measure the impacts of government policies and programmes, e.g. to alleviate poverty, reduce time out-of-work or stimulate the private investment.

Across many disciplines, the empirical investigation of causal questions is often supported by randomised experiments. If carefully designed and rigorously implemented, randomised experiments can recover the correct counterfactual by ensuring that those not participating in the programme (or not exposed to the policy) reproduce what participants would have looked like had they not participated.

However, this is seldom the case in economics as randomised social experiments can be costly or impossible to implement, hard to justify politically, sensitive to implementation problems and, in the end, provide limited information on the likely effects of the same policy if implemented on a larger scale and a more general setting.

Instead, a myriad of statistical evaluation methods have been developed and used widely. The goal of all these methods is to construct the correct counterfactual, which cannot be directly observed in non-experimental contexts. The main challenge facing these methods is widely known as “selection” or “self-selection”. It arises when individuals (or someone on their behalf) act to influence participation in the programme, moved by the potential benefits and costs participation may bring. For instance, unemployed people who believe training is particularly beneficial for them are likely to be disproportionately represented in available training programmes. The resulting group of participants is often difficult to replicate among the non-participants as some of the determinants of participation are unobserved to the researcher. In other words, it can be difficult to recover the correct counterfactual.

Among the statistical methods for policy evaluation, matching methods are perhaps the most widely applied. They focus on observed differences to construct the counterfactual by selecting, from the pool of those not participating, a comparison group that ‘looks the same’, in terms of observed characteristics, to the group of programme participants.

Matching methods rely on the crucial Conditional Independence Assumption that random assignment is recovered by balancing the observed characteristics among the participant and non-participant groups. In other words, conditioning on observed characteristics ensures that the participation status is conditionally mean independent from the potential outcomes. Hence, the comparison group built to look the same as the participant group provides the correct counterfactual, showing how the participants would have fared on average had they not participated.

Matching is intuitive, as it mimics randomised experiments: the distributions of behavioural determinants and indicators are balanced as closely as possible over participants and non-participants, using observational data. Its use has improved the policy evaluation practice by clarifying the importance of ensuring comparability between the groups being contrasted. However, matching methods have the well-recognized limitation of not ensuring the balancing of the distribution of the unobserved determinants of both participation and outcomes by participation status. In such case, participation may remain selective even after balancing the distribution of observed characteristics, in which case matching methods will produce biased estimates of the programme effects.

In certain empirical settings, a new empirical method developed by PEPA makes it possible to measure the bias incurred by matching estimates due to selection on unobserved characteristics1. This measure can then be used to correct the matching estimate and to test the validity of the Conditional Independence Assumption. Key to the estimation of such correction term is the availability of an instrument capable of driving participation to zero at certain of its values, while keeping the participation partly unexplained at other parts of its distribution.

This approach effectively combines matching with the exogenous variation provided by an instrument to balance unobserved characteristics.

The ideal setting for the application of the new method is created by non-mandatory programmes in the presence of boundary eligibility restrictions on personal characteristics or time. In such cases, the instrument is the characteristic (or set of characteristics) that define eligibility. Hence, non-participation is observed at certain values of the instrument while compliance is imperfect at other values. For instance, age could be one such instrument for a non-mandatory training programme made available for young people, under a certain age. More generally, many policies only apply to certain regions, cantons or states, or the introduction and abolition of policies leads to eligibility changes that can be explored to define a suitable instrument.

A first application of this method was run on a prototypical subsidised work programme aimed at helping young unemployed individuals to find work. This was a non-compulsory programme implemented in Sweden during the 90s, targeted at short-term unemployed individuals aged below 25. The adopted instrument was age and matching was implemented on all relevant and available information. The same programme had been evaluated before, using the classical matching approach.

The new results show that adjusting the matching estimator for selectivity alters the results, which become negative when the outcome of interest is outflow into employment. More specifically, classical matching methods based on the available information do not capture the fact that participants are better positioned to find a job, independently of participation. Consequently, estimates based on matching may introduce an upward bias in the measure of the impact of the programme on outflows to employment.

References


d1

1.
Visualizing real-time data with an interactive iPad video wall

Steven Gray, Richard Milton and Andrew Hudson-Smith, TALISMAN node, UCL

Video walls are frequently used in control rooms to display real-time data in a digestible way. Displaying often complex data feeds across multiple screens allows the operator to be alerted quickly to any potential problems or changes.

As a population we are increasingly generating a deluge of data during our daily commute, whether it be through our travelling habits or the air quality in certain locations around the city. By understanding how we move around the city we can get a sense of how smart the city has become.

The iPad visualization wall was created to build around the control room concept and display the citywide data we gather via the TALISMAN City Dashboard in an interactive way. It also provides a showcase of some of the data related visualizations we have created within Centre for Advanced Spatial Analysis (CASA) at UCL.

The iPad wall is constructed from an array of 12 iPads in a 4x3 configuration mounted in a custom built wooden frame, which is small and light enough to be portable. Each iPad is connected, via WiFi, to a single centralised server, which issues commands to each device.

Data displayed on the wall updates on average every 2 seconds with feeds configurable from an array of options. The wall can also be controlled remotely via an iPhone, allowing a central user to not only change data but also enable a mode where a video can be shown across all 12 iPads simultaneously.

The iPad Wall is currently (April 2013) being used in the London Mayor’s Office to display real-time data on air quality, finance and the state of London’s transport systems. The touch interface offered by the tablet adds a new dimension in Human Computer Interaction, by allowing people to interact with the data visualizations. In its current configuration the wall allows users to interact with the data and discover what has happened within the city. As the user touches an individual iPad, the view flips the current count panels around to display a graph of bus numbers, tube numbers or air quality throughout the last 24 hours. The daily variation can be viewed through these graphs and new discoveries about how the city works can be seen dynamically as it happens.

The wall has been built to augment and visualize the real-time data that is currently being collected and analysed through the TALISMAN node of NCRM. Another two iPad walls are currently under consideration to move into the public space of the Greater London Authority, this would include the ability to not only display but also collect data via the TALISMAN SurveyMapper system. The design and development is also being considered for a future exhibition.

References
1 http://www.citydashboard.org

Podcast: Big Data challenges for social scientists

The advent of a wide range of new data sources and digital research methods has created a plethora of opportunities for social science researchers to undertake innovative and impactful research.

At the TALISMAN node of NCRM, researchers are using new data and technologies to look at a range of geography-related real world issues, with the aim of generating new and powerful methods to help address key policy questions.

The iPad wall displaying geography-related real-time data (see article above) is an example of such project, which is already being used in the London Mayor’s Office.

In this podcast ‘Big Data challenges for social scientists’ TALISMAN Director Professor Mark Birkin (University of Leeds) talks about some of the node’s work and explains why he wants more researchers to seize the new research opportunities available to them.

New working paper: Availability and use of UK based ethnicity data for health research

Rohini Mathur, Emily Grundy and Liam Smeeth from the Pathways node of NCRM have a new working paper on ‘Availability and use of UK based ethnicity data for health research’.

The aim of the working paper is to inform researchers of the availability of ethnicity data in population based datasets which are available for use in epidemiological and social science research.

The paper introduces the concept of ethnicity and problems associated with definition and classification, and charts the evolution of ethnicity recording in the UK census and how this has been incorporated across the NHS.

Date for your diary: 6th ESRC Research Methods Festival, 8-10 July 2014, Oxford

The next Research Methods Festival will take place on 8-10 July 2014 at St Catherine’s College in Oxford.

This biennial event is the NCRM flagship event. We have organised the hugely popular ESRC Research Methods Festival since 2008, each time attracting over 800 social scientists across all career stages, disciplines and across the world.

The Festival is organised by the NCRM Hub and it is sponsored by the Economic and Social Research Council (ESRC). The coordinator of the Festival in 2014 is NCRM Hub co-director Professor Ros Edwards, who was also the coordinator of the Festival in 2012.

The ESRC Research Methods Festival aims to engage social scientists across a wide range of disciplines and sectors and at different points in their research careers. We are aiming to stimulate interest, raise issues, highlight opportunities and showcase new developments in social science research methods.

Further details, including the draft programme, will be published by December 2013 on NCRM website.

To view recorded sessions from the 5th ESRC Research Methods Festival (2-5 July 2012) please go to http://bit.ly/PNzx1