

The Economic Value of Longitudinal Research

Note from Longview (www.longviewuk.com)

The UK is a world leader in birth cohort and household panel studies, and second only to the US in the breadth and depth of the longitudinal datasets it holds. The question of how we should measure the value of longitudinal research (LR) is important. This note is a response to a request specifically for arguments on the economic value of LR. We apply the notion of economic value to different aspects of the policy process, illustrate it with specific examples, and offer suggestions for extracting greater value from the investment, drawn from Longview's experience.¹

The 'value' of LR

In Britain, LR² has mainly provided value for policy-makers and practitioners by drawing on the extensive studies of 5 generations represented by the birth cohort studies (begun in 1946, 1958, 1970, 1992, 2000) to:

- a. Monitor key aspects of development (e.g. health, educational attainment, social behaviour) and of adult life (e.g. ageing processes).
- b. Identify how problems develop, and the characteristics of those most vulnerable and most resistant.
- c. Compare the generations to show how they differ at any one time, and how they differ in terms of policy changes and initiatives. This includes key issues of intergenerational equity and social mobility, currently of growing importance.

The principal economic value of LR is the way in which it informs and improves the way policies are fashioned and refashioned. Better decisions – at all levels and at all stages – mean better use of public and private spending. The historical strength of the UK in LR means that we have a stock of knowledge, drawn from studies over five generations, of a kind which pays increasing dividends over time.

LR and the policy process

1. Cost-benefit/public value analysis

There are powerful instances where LR has yielded results which can be given monetary value. In 2001, for instance, a combination of cohort data, regression analysis, micro-economic modelling and macro-economic modelling³ provided evidence that raising adult numeracy and literacy to Level 1 for 70% and 90% of the population respectively would bring savings to the taxpayers of over £2.5 billion in respect of numeracy, and

¹ Our understanding is that there is under way an ONS review of governmental use of datasets. This will cover the impact of research, focusing on the longitudinal, since 2005. Secondly, the ESRC recently commissioned a review of the impact of LR, including on policy; this was used in setting up the *Our Changing Lives* website (see <http://www.ourchanginglives.net/impact/>). We hope that this paper will nicely complement the ONS inventory. Indeed, it would be useful to organise a discussion around the two together.

² LR includes the major cohort and panel studies, but is not restricted to them. It includes studies of shorter duration and smaller scale, and qualitative as well as quantitative work.

³ Carried out respectively by the Centre for Longitudinal Studies, the Centre for Economic Performance and the Institute for Fiscal Studies – an excellent example of added value from collaboration.

almost £0.5 billion in respect of literacy.⁴ This illustrates the unique power of LR to *inform a decision with significant economic consequences*.

Another example: a simulation exercise using cohort data showed a potential annual saving of £6-34 million through reduced depression levels that would follow from raising the educational levels of 10% of adult women with no qualifications. Extending the exercise to all aspects of mental health and to 50% led to savings estimates of at least £300 million.⁵

These specific kinds of cost-benefit analysis could be applied to other key policy areas to produce equivalent estimates of potential savings and benefits.⁶ The *'public value' potential* is there, for example, in analysis of outcomes of educational and training attainment in relation to income and social mobility.

2. Evaluation and feedback

LR provides powerful analysis of the relation between inputs and outputs, and both formative and summative evaluative information. It therefore promotes the continuous improvement of policy and practice. It enables replication, through the selection for analysis of sub-populations from within large-scale studies, in a way that randomised trials cannot. This allows for example a focus on particular disadvantaged groups, whilst maintaining comparability with a large representative population. In short, LR enables *a cumulation of policy-relevant understanding, with increasing cost-effectiveness*.

The effects of policies often take several years to come through. LR enables effects to emerge *over the long term*. Specifically designed evaluation may not be feasible over this period, but LR allows indirect evaluation. It also captures *unforeseen* effects, which are hard to cover in a standard evaluation design.

Examples here include the cohort studies' capacity to provide control groups in evaluating the effects of Surestart; and the effects of the replacement of O Levels by GCSE, discernible only after 10 years. Examples of outcomes include long-term effects on the child's development of having a working mother during infancy and, in future, long-term effects of therapies such as anti-depressant medication.

3. Defining the options accurately

Eliminating blind alleys and opening up lines of thinking which have a higher than normal probability of success – because they address complexity - is a major advantage. LR enables both these. The former *reduces the costs of policy-making*, and they both increase the chances of *defining a manageable range* of effective options.

LR cannot guarantee optimal selection of option. But it raises the chances of picking the best one under the circumstances, because LR provides such rich information on individual and group experiences over time. In particular, it makes it more possible to identify what can be called *critical or sensitive periods* in the lifecourse, i.e. those moments when intervention or support can be particularly (cost-)effective - and by implication those when it will be less effective, because too soon or too late. It allows the *anticipation* of issues and problems, giving more

⁴ Bynner, J. et al (2001) *Improving Basic Skills : Benefits to Individuals and Society*, DfEE Research Brief 251

⁵ Feinstein, L. (2002) *Quantitative Estimates of the Social Benefits of Learning, 2: Health (Depression and Obesity)*, Centre for Research on the Wider Benefits of Learning, Research Report 6

⁶ Areas include mental ill health (estimated costs £77 billion each year in England); alcohol misuse during pregnancy and in the child's later life (estimated costs per annum to NHS of alcohol-related disease £2.7 billion, of alcohol-associated crime and antisocial behaviour £7.3 billion and of alcohol-related unemployment, absenteeism and underperformance at work £6.4 billion); smoking in pregnancy (costs for maternity care and infant health £20 - £89 million per annum); childhood obesity (total direct and indirect annual treatment costs £3.3 billion); and the magnitude of health inequalities (estimated average costs of inequalities-related losses to health amounts to 10.9% of GDP across Europe).

time to prepare policies in response. LR also provides authoritative *legitimation* for policy decisions, even where these may be the common-sense option.

Examples here include implications of low birthweight for the incidence of type 2 diabetes and other physical and mental health outcomes; cot deaths, where the ALSPAC evidence led directly to guidance which resulted in a reduction of annual cot deaths from 1200 to 300; and the predictable effects of female smoking.

4. *Shaping the climate of opinion*

LR has unrivalled power in explaining why individuals and groups come to be where they are, in health, employment, family circumstances and so on. Policies face forwards not backwards, but the climate of opinion which shapes thinking on policies is informed by LR's *illumination of why we are where we are*. The 'climate' may be that of the general public; the effect here is very hard to gauge, and the LR value likewise. But the climate is also of professionals in the field or policy-makers themselves; here the impact and value of LR may be much more apparent, as LR helps us understand what has led to significant issues emerging, in ways which other research cannot. It gives important insights into the *scale or magnitude* of issues. It may be that these results are mediated by others, i.e. it is not the LR community which gets the messages across; but LR is the source of the illumination.

In short, the prime economic value lies in enabling authorities to identify correctly issues of public interest, providing protection against volatile and ill-informed opinion. Examples here include legitimating the campaign against smoking; the lasting effects of early childhood experiences and the need for ameliorative action to counter disadvantage; and the scarring effects of youth unemployment.

Policy-making does not operate in a neat linear fashion. Throughout the process, however, the ability of LR to provide a better basis for effective policy-making, locally and for organizations as well as for departments of national government, is clear and strong. It is distinct from most claims of research because of its ability to provide evidence for policy, precisely because it tracks people over time. The tracking need not last very long. We emphasise that LR is not to be thought of only in terms of the major cohort studies, crucial though these are - it can be mounted also for quite short periods, even a few months.

Some experiences simply cannot be grasped without an understanding of their *duration*. The most obvious example is poverty. Merely being poor at one point is not significant (indeed arguably is a valuable experience). Being in that state for a prolonged period is very different. Defining where the dividing line is drawn, i.e. where the experience of poverty has lasted long enough to become significant and with a risk of long-term effect, is a crucial issue for the current debate, and can only be illuminated by LR. Even a 1% improvement in the effectiveness of benefit payments would pay for the entire LR programme many times over.

Making greater use of the national longitudinal research resource

We have pointed above to ways in which LR specifically can pay off for policy-making, and given concrete examples where this has occurred. These are very solid foundations. But the experience of Longview leaves makes it clear that there is scope for still greater use to be made of LR. Below are areas where more value could be extracted from the array of LR studies with little additional funding, or even redeployment of existing resources:

- *Secondary analysis*: getting a better balance, within existing resources, between creating new data and making more use of existing/ongoing datasets. Mounting original studies may not always be the best solution. This is being addressed by research councils, and has implications for training and career paths.
- *Cross-departmental usage* of LR: silos exist which impede the sharing of LR, within and between government departments, and likewise within and between research institutions, and between research

and policy. Greater exchange of information and better discussion on the implications of the research would add considerable value. Building joint capacity – a shared language between research and policy – is vital.

- *Capacity-building*: stronger skills, of analysis and of understanding, are needed both within the research community and by users of LR. This is not just the capacity to carry out more sophisticated analysis of large-scale datasets; it is the ability to know to ask the right questions, and to understand enough of the results to make proper use of them.
- *Presentation/communication*: there is a strong apparent need for new techniques for making the communication of data, results, and interpretation more readily accessible, enabling all kinds of more informed exchange and dialogue. This can be at different levels of technical sophistication.

Longview is already addressing some of these issues:

- a. We plan to continue our series of seminars, focused on specific policy-relevant issues and drawing on different LR sources. So far we have been concerned with (a) the development of cognitive capital and how that has varied across cohorts, and (b) parenting effects on adolescent behavior and development. Current candidates are cross-cohort comparisons of ageing processes; adolescent anti and pro-social behaviour; risk and resistance to obesity.
- b. We have designed an initiative to explore new forms of dynamic data presentation, drawing on the inspiration of Gapminder to improve understanding of data, results and interpretations.
- c. We have a number of public events planned, e.g. in partnership with the British Library, to take forward public understanding of the importance of LR.

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