

# **ESRC Longitudinal Studies Review 2017**

## **Interim report: initial analysis of responses to the consultation**

December 2016

**Report author:**

**Ruth Townsley, Independent Researcher**

## Key points

### Background and context

- The ESRC Longitudinal Studies Review 2017 is exploring the current and future scientific and policy-relevant need for longitudinal studies. The review started in October 2016 and will run throughout 2017, reporting to ESRC in 2018.
- The review commenced with a focused consultation, via an online survey on the ESRC website, to seek the views of the longitudinal studies community. The survey was widely advertised and was open to anyone who chose to respond.

### Who responded?

- The consultation was open for four weeks in autumn 2016 and received a total of 637 completed responses from individuals in the UK (83.4%) and internationally (16%). Most respondents were from the academic sector (80%) with the remaining 20% spread across government, civil society and business sectors. Most survey respondents (80.9%) had a background in economic and social research; the consultation was widely promoted via social science networks. Those working in the field of medical research accounted for 16.9% of responses whilst representation across other primary research areas was very low, with no responses from the arts and humanities.

### Are the 2006 review priorities still important for longitudinal research?

- The ESRC's 2006 Strategic Review of Panel and Cohort Studies<sup>1</sup> had highlighted eight priority areas for longitudinal research: ageing population; long-term effects of childhood experience; timing of transitions; demographic shifts and mobilities; biotechnology revolution; immigration; cultural diversity and inequality; globalisation. Respondents to the 2016 consultation were asked to rate each of these and rank the top three. Overall, all eight areas were felt to be important or very important for the future, whilst ageing population and long-term effects of childhood experience were ranked most highly.

### Scientific priorities and sub-themes

- There were detailed suggestions regarding on-going **scientific priorities for longitudinal research**, summarised as: (1) long-term effects of childhood and adult experience; (2) demographic shifts and mobilities; (3) health and well-being; (4) equality and inequality; (5) biosocial research and genomics; (6) diversity and identity; (7) ageing population.

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<sup>1</sup> <http://www.esrc.ac.uk/files/news-events-and-publications/news/2016/strategic-review-of-panel-and-cohort-studies-2006/>

- A huge number of **scientific sub-themes** were suggested, the most frequently cited of which included: social, economic, educational, geographic and digital/technological inequalities; nature of individuals' involvement in education and skill development across the life-course; mental health; social and environmental influences on health (biosocial research); intergenerational continuities and discontinuities; changes in work and employment patterns, pathways and labour markets; nature of the impact of policy on individuals, groups and communities; political values, attitudes and voting behaviour; psychosocial and emotional factors; social, educational and geographic mobility differences; social and physical factors; ageing, health and well-being (including dementia and cognitive ageing).

### Methodological and technological issues and sub-themes

- Respondents also made many detailed and expert suggestions regarding priority methodological **and technological issues in longitudinal research**. These were grouped under the main areas of (1) study design; (2) data collection; (3) data handling and treatment; (4) data analysis; (5) data linkage; (6) documentation and dissemination; (7) infrastructure and capacity building; and (8) other issues relating to longitudinal studies.
- The most frequently cited suggestions included: data linkage; attrition, non-response and bias; sampling and population representation; design of questions, scales and measures; complex analysis and modelling; measures for comparability, including the harmonisation of variables, across cohorts, sweeps, studies and internationally; development and use of mixed mode data collection; online, digital and other new forms of data collection; methods for handling missing data and reliability; further development of the national infrastructure for longitudinal studies; bio and social integration at the design stage; documentation and dissemination of paradata; and improved access to longitudinal data.

### Further comments and suggestions

- The consultation received many **further comments and suggestions**. The largest proportion of these affirmed the importance, value and contribution of longitudinal studies as the cornerstone of UK social science and noting their contribution to professional knowledge and development, to informing policy debates, and to the development of policy initiatives.
- Respondents offered detailed and persuasive comments about the uniqueness and intrinsic value of existing longitudinal resources. They made a strong case for the importance of continued funding to support this national asset for future generations, highlighting the centrality of ESRC's role in this process.

## Summary

### 1. ESRC Longitudinal Studies Review 2017: background and context

ESRC's Longitudinal Studies Review 2017 is exploring the current and future scientific and policy-relevant needs in longitudinal life-course research. The review is set within a current context of change in the availability of data, including routine data, and a changing funding environment including the move towards UK Research and Innovation (UKRI). UKRI will bring together the seven research councils<sup>2</sup>, Innovate UK and HEFCE's quality-related research funding, as a single, strategic body. The context in which these large surveys are undertaken is also changing in a number of respects, including shifting attitudes towards participation in such studies, survey costs, and technological and policy advances in data acquisition and linkage.

The 2017 review is being undertaken by a small, independent, international panel, chaired by Professor Pamela Davis-Kean, University of Michigan. It started in October 2016 and will run throughout 2017, reporting to the ESRC in 2018. The aim of the review is to provide an evidence-based and critical assessment of the future social and interdisciplinary scientific and policy-relevant needs and opportunities for longitudinal research resources, and of the continuing value of the life-course evidence from longitudinal studies in comparison with other sources of evidence. The review will form a core contribution to the development of ESRC's vision for longitudinal studies and related resources the next 10 years and beyond. It will provide the evidence needed to support future social science investment in longitudinal infrastructure as UKRI is established.

The review included a widely advertised focused consultation exercise, via an online survey tool, which launched on 3rd October 2016 and was open until 4<sup>th</sup> November 2016. The questionnaire contained both open and closed questions. The consultation was open to anyone to participate in order to gain the largest possible input and not to restrict it to a known community. It was widely promoted via social science networks and less so in medical science communities. This is likely to have affected the balance of respondents and their responses, particularly the frequency of citation of different research priority areas and sub-themes. We have not attempted to weight responses, but this factor should be borne in mind when considering the material gathered in the consultation.

The consultation received a total of 704 responses (not all of which were completed) from individuals across the academic, government, civil society and business sectors. The survey asked questions about the continued relevance and importance of the scientific priorities for longitudinal data that were identified by ESRC's previous strategic review of panel and cohort studies<sup>3</sup>, commissioned in 2006. It also provided opportunities to identify additional

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<sup>2</sup> Arts and Humanities (AHRC), Biotechnology and Biological Sciences (BBSRC), Engineering and Physical Sciences (EPSRC), Economic and Social Research (ESRC), Medical Research (MRC), Natural Environment (NERC) and Science and Technology Facilities (STFC).

<sup>3</sup> <http://www.esrc.ac.uk/files/news-events-and-publications/news/2016/strategic-review-of-panel-and-cohort-studies-2006/>

priorities for the future. Learning from the consultation will inform the review panel's next steps in identifying future needs for longitudinal resources.

## 2. Longitudinal studies 2016 focused consultation: key findings

### Who responded?

- A total of 637 analysable responses were received to the consultation survey. The majority (83.4%) of respondents were UK-based, with an international response of 16%.
- Most respondents were representing the academic sector (80%), with the remaining fifth of respondents spread across central and devolved government (6.3%), civil society including the charity sector (2.7%), the non-governmental public sector (2.2%), research funders (1.7%), the business sector (1.6%), local government (1.4%) and think tanks (1.1%). A further 3% of respondents described their sector as 'other', which included people not currently in work, self-employed individuals and consultants, retirees and those working for independent (non-profit) research agencies.
- Around a third of respondents (34.8%) described themselves as working at senior level within their organisation, just over a quarter (28.3%) were mid-career professionals, whilst around one fifth (22.7%) were early career or postdoctoral researchers. A small proportion of responses were from postgraduate (13.7%) and undergraduate (0.4%) students.
- Most survey respondents (80.9%) had a background in economic and social research. Those representing the field of medical research accounted for 16.9% of responses. Representation across other primary research areas was very low, with 1.4% having a background in biotechnology and biological sciences, 0.6% in the natural environment and 0.2% in engineering and physical sciences. There was no representation from respondents whose primary research area was in arts and humanities.

### Are the 2006 review priorities still important for longitudinal research?

- The ESRC's 2006 Strategic Review of Panel and Cohort Studies<sup>4</sup> had highlighted eight priority areas for longitudinal research: ageing population; long-term effects of childhood experience; timing of transitions; demographic shifts and mobilities; biotechnology revolution; immigration; cultural diversity and inequality; globalisation.
- Respondents to the 2016 consultation were asked to rate each of these and rank the top three. Overall, all eight areas were felt to be important or very important for the future, whilst ageing population and long-term effects of childhood experience were ranked most highly.

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<sup>4</sup> <http://www.esrc.ac.uk/files/news-events-and-publications/news/2016/strategic-review-of-panel-and-cohort-studies-2006/>

## Further scientific priority areas for longitudinal studies: suggestions from respondents

- Respondents were asked to suggest up to two further scientific priority areas that longitudinal data are needed to address. A total of 588 open-ended answers, from 362 individuals, were received to this question, representing 57% of the total number of respondents for the survey overall.
- The coding and analysis of these data resulted in a set of seven main scientific priority areas that respondents suggested longitudinal studies are needed to address:
  - Long-term effects of childhood and adult experience
  - Demographic shifts and mobilities
  - Health and well-being
  - Equality and inequality
  - Biosocial research and genomics
  - Diversity and identity
  - Ageing population.
- Data analysis revealed that there were slight differences between the 2016 scientific priorities, and those from the 2006 review, mostly in terms of their terminology, emphasis and conceptual breadth. The 2006 areas of globalisation, immigration and timing of transitions were each subsumed within one or more of the broader priority areas. Health and well-being emerged as a separate scientific priority in its own right. Biosocial research and genomics replaced, and updated the 2006 priority previously entitled the biotechnology revolution. And the 2006 priority of cultural diversity and inequality was split into the areas of diversity and identify; and equality and inequality; to better reflect comments from respondents.
- Further analysis of the 2016 consultation survey data allowed us to identify the ‘top ten’<sup>5</sup> most frequently cited scientific sub-themes which respondents felt longitudinal data are needed to address. In order of priority, these are:
  - Social, economic, educational, geographic and digital/technological inequalities
  - Nature of individuals’ involvement in education and skill development across the life-course
  - Mental health
  - Social and environmental influences on health (biosocial research)
  - Intergenerational continuities and discontinuities
  - Changes in work and employment patterns, pathways and labour markets
  - Nature of the impact of policy on individuals, groups and communities
  - Political values, attitudes and voting behaviour

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<sup>5</sup> In reality there are 12 ‘top ten’ issues, as 6<sup>th</sup> and 7<sup>th</sup> place were shared between two issues each.

- Psychosocial and emotional factors (such as social networks, loneliness and risk-taking behaviour)
- Social, educational and geographic mobility differences between individuals, communities and age-groups
- Social and physical factors
- Ageing, health and well-being (including dementia and cognitive ageing).

### Future methodological and technological issues for longitudinal studies: suggestions from respondents

- Respondents were asked to suggest up to three methodological or technological priority issues to be addressed in relation to longitudinal studies. A total of 661 open-ended answers were received, from 308 individuals, representing 48% of the total respondent sample overall.
- Coding and analysis of these responses led to a set of eight main priority areas that respondents suggested should be addressed in relation to longitudinal studies:
  - Longitudinal study design
  - Data collection
  - Data handling and treatment
  - Data analysis
  - Data linkage
  - Documentation and dissemination
  - Infrastructure and capacity building
  - Other issues relating to longitudinal studies
- Further analysis of the 2016 consultation data allowed us to identify the ‘top ten’<sup>6</sup> most frequently cited methodological and technological sub-themes which respondents identified to be addressed in relation to longitudinal studies. In order of priority, these are:
  - Data linkage
  - Attrition, non-response and bias
  - Online and digital forms of data collection
  - Sampling and population representation
  - Design of questions, scales and measures
  - Complex analysis and modelling
  - Comparability and harmonisation (across time, cohorts, studies and countries)

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<sup>6</sup> In reality there are 15 ‘top ten’ issues, as 5<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> place were shared between more than one issue each.

- Other new forms of data collection
- Missing data and reliability
- National infrastructure supporting longitudinal studies
- Bio and social integration at the design stage
- Documentation and dissemination of paradata
- Access to longitudinal data
- Mixed mode data collection.

#### Further comments and suggestions

- The consultation received many further comments and suggestions. The largest proportion of these affirmed the importance, value and contribution of longitudinal studies as the cornerstone of UK social science and noting their contribution to professional knowledge and development, to informing policy debates, and to the development of policy initiatives.
- Respondents offered detailed and persuasive comments about the uniqueness and intrinsic value of existing longitudinal resources. They made a strong case for the importance of continued funding to support this national asset for future generations, highlighting the centrality of ESRC's role in this process.

### 3. Concluding thoughts and next steps needed

This interim report aims to provide a quick and early synthesis of the key findings of a focused consultation exercise, the first step in ESRC's Longitudinal Studies Review 2017. The number of responses that were received to the online consultation survey was unprecedented for a focused consultation of this nature. The quality and depth of the suggestions and insights from respondents was outstanding and represents a valuable and unique source of expert and detailed feedback both on existing studies and in terms of future developments in longitudinal research.

We are very aware that the timescale for the interim reporting process necessitated a pragmatic approach to data coding and analysis which has not done sufficient justice to the scale and quality of the material provided by respondents. We acknowledge that further analytic work is needed to understand and describe the key themes more fully and a second, more detailed report on the findings of the focused consultation is planned for early 2017.



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# 1. ESRC Longitudinal Studies Review 2017

## 1.1. Background and context

ESRC's Longitudinal Studies Review 2017 is exploring the current and future scientific and policy-relevant needs in longitudinal life-course research. The review is set within a current context of change in the availability of data, including routine data, and a changing funding environment including the move towards UK Research and Innovation (UKRI). UKRI will bring together the seven research councils<sup>7</sup>, Innovate UK and HEFCE's quality-related research funding, as a single, strategic body. The context in which these large surveys are undertaken is also changing in a number of respects, including shifting attitudes towards participation in such studies, survey costs, and technological and policy advances in data acquisition and linkage.

The 2017 review is being undertaken by a small, independent, international panel, chaired by Professor Pamela Davis-Kean, University of Michigan. It started in October 2016 and will run throughout 2017, reporting to the ESRC in 2018. The aim of the review is to provide an evidence-based and critical assessment of the future social and interdisciplinary scientific and policy-relevant needs and opportunities for longitudinal research resources, and of the continuing value of the life-course evidence from longitudinal studies in comparison with other sources of evidence. The review will form a core contribution to the development of ESRC's vision for longitudinal studies and related resources the next 10 years and beyond. It will provide the evidence needed to support future social science investment in longitudinal infrastructure as UKRI is established.

## 1.2. The 2016 focused consultation

The 2017 Review commenced with a focused consultation exercise, via an online survey, which launched on 3rd October 2016 and was open for four weeks until 4<sup>th</sup> November 2016. The survey tool was designed and implemented by ESRC and was open to anyone to participate in order to gain the largest possible input and not to restrict it to a known community. It was widely promoted via social science networks and less so in medical science communities. This is likely to have affected the balance of respondents and their responses, particularly the frequency of citation of different research priority areas and sub-themes. We have not attempted to weight responses, but this factor should be borne in mind when considering the material gathered in the consultation.

The purpose of the survey was to enable stakeholders to contribute to early thinking in the review process and allow the review panel to gain input on the key scientific questions, and methodological and technological issues that should be addressed in the future. The survey asked questions about the continued relevance and importance of the scientific priorities for longitudinal data that were identified by ESRC's previous strategic review of panel and

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<sup>7</sup> Arts and Humanities (AHRC), Biotechnology and Biological Sciences (BBSRC), Engineering and Physical Sciences (EPSRC), Economic and Social Research (ESRC), Medical Research (MRC), Natural Environment (NERC) and Science and Technology Facilities (STFC).

cohort studies<sup>8</sup>, which reported in 2006. It also provided opportunities to identify additional priorities for the future. See **Annex A** for a copy of the survey questions.

### 1.3. Interim analysis of the consultation responses

A total of 704 survey responses were received by the deadline. Of these, 67 were not useable for analysis purposes, giving a total analysable dataset of 637 responses. Our brief for the interim analysis of the consultation responses was to map and quantify the main scientific and methodological priority areas identified by respondents, and to cross-tabulate these data by respondent location, sector and primary research area. The results of this exercise were needed quickly, to inform the next step of the Longitudinal Studies Review - a workshop planned for early January 2017.

The initial coding, analysis and reporting were undertaken over three weeks in November 2016. Quantitative and qualitative data from the survey tool were downloaded to an Excel spreadsheet for coding and analysis. The quantitative data were analysed by frequencies and descriptive statistics, using pivot tables for cross-tabulation. There was also a large quantity of unstructured and detailed qualitative data.

Coding frames for describing the qualitative data were drawn up in close consultation with the Longitudinal Studies team at ESRC, following a process of qualitative review and comparison of a sample of responses. The coding frames (see **Annexes B and C**) allowed us to scope out and quantify key overarching categories and sub-themes relating to the scientific priorities and methodological and technological issues identified by survey respondents.

It is worth noting that the process of coding the responses was lengthy and accounted for most of the time allocated for the interim analysis and reporting. We were mindful of the short timescale and the need to report key findings quickly. We are aware that significant additional analytic work is still needed to fully describe and understand the nature of the thematic issues identified by the large number of respondents.

### 1.4. About this interim report

This interim report was written by Dr Ruth Townsley, an independent researcher and policy analyst. The purpose of the report is to provide a quick and early synthesis of the key findings of the consultation, to inform the next step of review.

The timescale for the interim reporting process, combined with the very large number of detailed responses received by the consultation, necessitated a pragmatic approach to data coding and analysis, as outlined above. A second, more detailed report on the findings of the focused consultation is planned for early 2017.

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<sup>8</sup> <http://www.esrc.ac.uk/files/news-events-and-publications/news/2016/strategic-review-of-panel-and-cohort-studies-2006/>

## 2. Who responded to the consultation?

### 2.1. Location and employment sector of respondents

The majority (83.4%) of the 637 respondents were UK-based, with an international response of 16% (see **Annex D**, Table 1).

Of these, most were from the academic sector (80%), with the remaining fifth of respondents spread across central and devolved government (6.3%), civil society including the charity sector (2.7%), the non-governmental public sector (2.2%), research funders (1.7%), the business sector (1.6%), local government (1.4%) and think tanks (1.1%). A further 3% of respondents described their sector as 'other', which included people not currently in work, self-employed individuals and consultants, retirees and those working for independent (non-profit) research agencies (see **Annex D**, Table 2).

### 2.2. Career stage of respondents

We asked about the career stage of respondents and 488 (76.6% of the total sample) provided an answer (see **Annex D**, Table 3). Of these, around a third (34.8%) described themselves as working at senior level within their organisation, just over a quarter (28.3%) were mid-career professionals, whilst around one fifth (22.7%) were early career or postdoctoral researchers. A small number of postgraduate (13.7%) and undergraduate (0.4%) students provided responses to the survey.

### 2.3. Primary research area of respondents

Respondents were asked to indicate their primary research area from a list of six choices and 486 people (76.3% of the total sample) answered this question (see **Annex D**, Table 4). Of these, the majority (80.9%) had a background in economic and social research. Those representing the field of medical research accounted for 16.9% of responses. Representation across other primary research areas was very low, with 1.4% having a background in biotechnology and biological sciences, 0.6% in the natural environment and 0.2% in engineering and physical sciences. There was no representation from respondents whose primary research area was in arts and humanities.

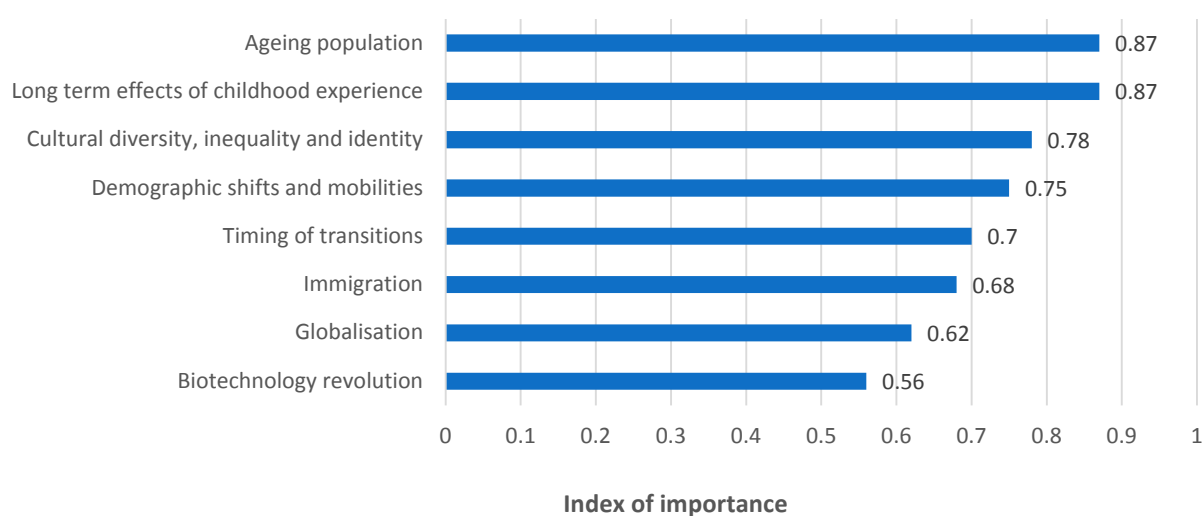
### 3. Past priority areas for longitudinal studies: are these still relevant?

Respondents were presented with the eight key priority areas identified by the 2006 review for ESRC<sup>9</sup>:

1. Ageing population
2. Long-term effects of childhood experience
3. Timing of transitions
4. Demographic shifts and mobilities
5. Biotechnology revolution
6. Immigration
7. Cultural diversity and inequality
8. Globalisation.

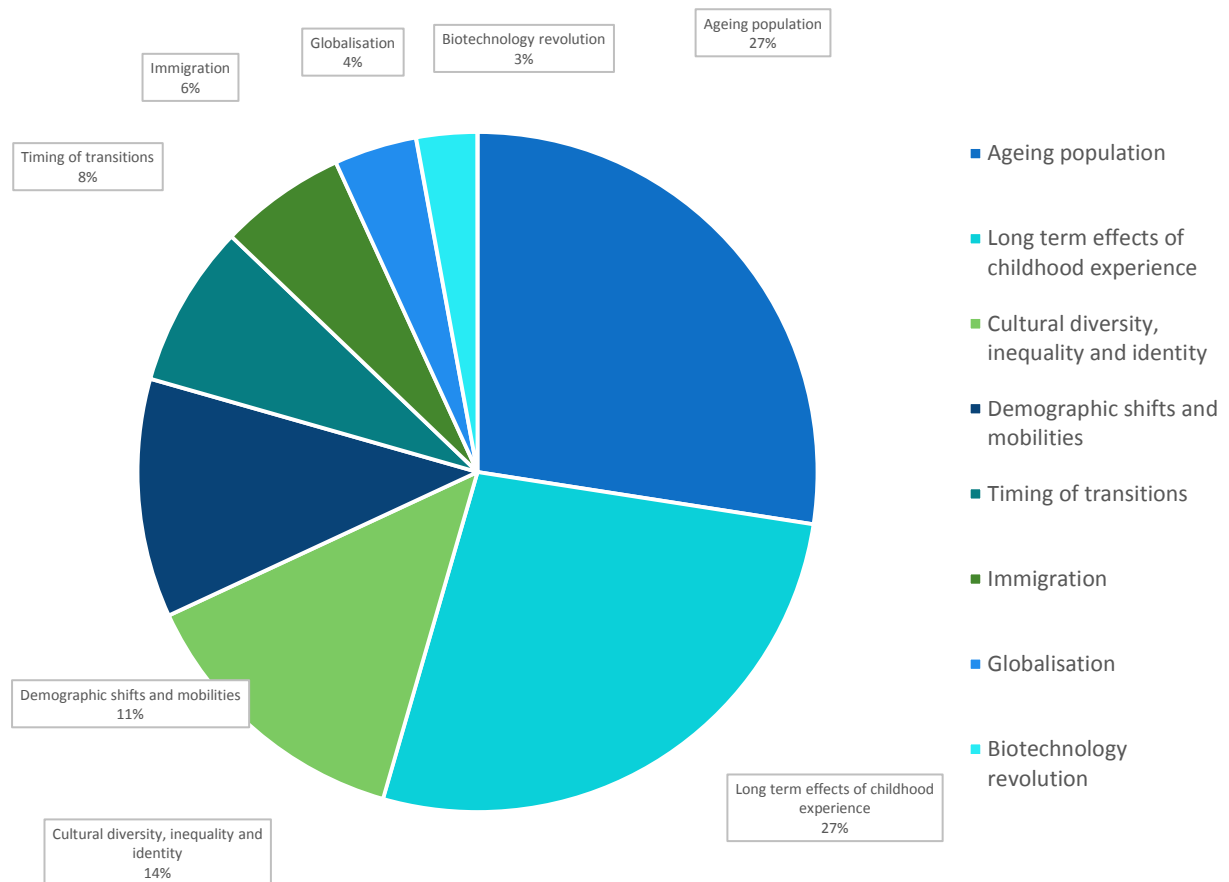
Respondents were asked to indicate how important each area is for the future, using a five-point scale (see **Annex A**, question 6) and to rank the top three priorities from the list of eight (see **Annex A**, question 7). Responses were received from the full survey sample of 637 individuals. The results presented in Figures 1 and 2 below indicate that overall, all eight areas were felt to be important or very important for the future, whilst ageing population and long-term effects of childhood experience were ranked most highly.

**Figure 1: Respondents' views of the relative future importance of the 2006 review's eight priority areas (question 6: base size = 637 responses)**



<sup>9</sup> <http://www.esrc.ac.uk/files/news-events-and-publications/news/2016/strategic-review-of-panel-and-cohort-studies-2006/>

**Figure 2: Respondents' 'top three' ranking of the 2006 review's eight priority areas (question 7: base size = 637 responses)**



## 4. Further scientific priority areas: suggestions from respondents

Respondents were asked to suggest up to two further scientific priority areas that longitudinal data are needed to address (see **Annex A**, question 8). A total of 588 open-ended answers were received to this question, from 362 respondents (57% of the total sample of 637), with 226 respondents (36% of the total sample) providing two main suggestions and 136 (21% of the total sample) offering one suggestion.

### 4.1. Methods used for coding and analysing responses to question 8

As explained in section 1.3, a coding frame for analysing the qualitative data from question 8 was drawn up, following a process of review and comparison of a sample of responses. The coding process involved assigning labels to the data to describe the nature of the scientific priority areas suggested by respondents. The coding labels we created referenced, where appropriate, the wording of the 2006 scientific priorities, but were not limited by these eight areas and were designed to enable us to describe the new areas and sub-themes that emerged from this dataset.

We started by labelling and coding the smaller units of analysis, or 'scientific sub-themes'. Once the sub-themes were established as salient codes to describe the data, we organised them under a set of broader 'main scientific priority areas'. This was an iterative process which involved significant re-ordering and reconfiguration, and in some cases re-coding, to best reflect the responses to the 2016 consultation. Where just one instance of a code was noted, we re-coded it under a broader sub-theme so that each of the thematic issues had at least two instances per code. The process was conducted in close collaboration and discussion with the Longitudinal Studies team at ESRC.

Many of the responses to question 8 were very detailed, and included several scientific themes under one main priority area. For the purposes of analysis, we were able to code only one thematic issue per suggestion (n=588) as time and resources were insufficient to allow for more detailed coding at this stage of the review. We hope to revisit the data analysis in early 2017 and to recode some of the longer consultation responses in more detail.

### 4.2. Main scientific priority areas and sub-themes

The coding and analysis of the data from question 8 resulted in a set of seven main scientific priority areas that longitudinal studies are needed to address (see **Annex D**, Table 5):

- Long-term effects of childhood and adult experience
- Demographic shifts and mobilities
- Health and well-being
- Equality and inequality

- Biosocial research and genomics
- Diversity and identity
- Ageing population.

The seven main 2016 priority areas differ in their conceptual breadth and the extent to which they incorporate associated scientific sub-themes. Changes in priority and emphasis between the seven 2016 areas and the previous eight 2006 priority areas are discussed below, with a short explanation of each main area's sub-themes<sup>10</sup>.

### Long-term effects of childhood and adult experience (see Annex D, Table 6)

The 2006 review noted the increasing recognition that exposures to physical, social and environmental factors from conception onwards can interact with individual biology and psycho-social development in the longer-term. Responses to the 2016 consultation underlined the continued importance of studying the long-term effects of childhood experience, an area which was also highlighted as a priority in respondents' answers to questions 6 and 7.

The 2016 data mirrors many of the issues reported in the 2006 review: that longitudinal data are needed to understand the outcomes and impact of pre-natal and post-natal factors and exposures, social, physical and environmental factors (including pollution and climate change), and psychosocial and emotional factors (such as social networks, loneliness and risk-taking behaviour). Respondents to the 2016 consultation also noted several additional and significant scientific sub-themes relevant to this main priority area. These included capturing data on the nature of individuals' involvement in education and skill development across the life-course; and on the impact of policy (including education policies, but also broader changes such as Brexit) on individual, groups and communities.

Other areas where respondents suggested longitudinal data are needed included access to new media and technology (including individuals' use of social media); experiences of parenting, parenthood and separation (on babies, children and parents themselves); language development (including second languages and the medium of Welsh); diet and nutrition; and experiences of physical, emotional and sexual violence. The need for data on other areas – such as alcohol and drug use, pet ownership and prevalence and experience of disability – was also mentioned by a few respondents.

Some respondents noted the importance of collecting information across the life-course, from before birth, through childhood and into adulthood – this led to a slight re-wording of the priority area label to encompass the whole life-course.

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<sup>10</sup> The 2006 priority 'globalisation' no longer appears as a separate main priority area. It was mentioned within the context of other sub-themes such as 'social and economic inequality', 'the impact of policy on individuals, groups and communities', 'education and skills' and 'changes in work and employment patterns, pathways and labour markets', and hence no longer appeared salient as a separate code.



### Demographic shifts and mobilities (see Annex D, Table 7)

This was a key area for the 2006 review and remained so for respondents to the 2016 consultation. Responses suggested that longitudinal data continue to be needed to address intergenerational continuities and discontinuities (for example socio-economic differences between baby boomers and millennials); changes in work and employment patterns, pathways and labour markets; and social, educational and geographic mobility differences between individuals, communities and age-groups. Respondents reiterated the importance of capturing longitudinal data on changes to family structure and on the nature of household/family dynamics. This includes understanding how decisions are made about employment and finances across a household/family unit, including for those family members who are not domiciled within the family home.

The two issues of migration, and transitions at different points of the life-course, were also significant sub-themes within the main area of demographic shifts and mobilities. Within the 2006 review, these themes (named there as immigration and timing of transitions) were separated out as main priority issues. However, within the 2016 data, they did not appear as such high priorities for respondents to the consultation survey and hence were not felt to warrant separate billing as main priority themes.

A few respondents also mentioned the need for data on changes in time use, including sleep patterns, and on transportation use and change.

### Health and well-being (see Annex D, Table 8)

The analysis of responses to the 2016 consultation confirmed health and well-being as a new, separate, main priority area which encompasses a range of physical and mental health issues that longitudinal data are needed to address. The most frequently mentioned scientific sub-theme was mental health. Respondents highlighted issues such as aetiology, prevalence, predictors, links with physical health and illnesses such as dementia, links with economic activity and relationships, and differences across age-groups (there is evidence that mental health is poorer for younger cohorts). Work, health and well-being was also a significant sub-theme. Respondents noted interactions between work, job quality, stress, and mental and physical health and the importance of making links with changing working patterns and labour markets.

Other important sub-themes included experience and demand for health (and social care) services; and health trajectories across the life-course, including health exposures and health behaviour at transition points (independent living; employment; parenthood; midlife and retirement). Long-term conditions and outcomes were also noted, both in a general sense and with more specific reference to allergies, auto-immune conditions, diabetes and cancer.

Some respondents also suggested that more longitudinal data, including cross-national comparison, are needed to understand predictors of diseases and how best to treat them on a personalised level. Mapping and understanding the factors involved in supporting and sustaining health living were also mentioned by some people. The issues of obesity and fertility were singled out as important in their own right by a few respondents.

### Equality and inequality (see Annex D, Table 9)

The 2006 review noted that whilst opportunities are increasing for some sections of the population, they are decreasing for others, resulting in increasing marginalisation and polarisation and leading to numerous forms of inequality. The issue of inequality remained a very high priority within the 2016 data and to better reflect this, the original 2006 review main area of 'cultural diversity and inequality' was split into two main priority areas: equality and inequality and diversity and identity.

Many respondents offered suggestions around equality and inequality, with the highest number of mentions relating to inequalities associated with social, economic, educational, geographic and digital/technological factors. Health inequalities were also highlighted, along with some mentions of inequalities relating to race, ethnicity and gender. A few respondents also asked for more longitudinal data to help understand changes in discriminatory behaviours across age-groups and geographic locations.

### Biosocial research and genomics (see Annex D, Table 10)

The 2006 review highlighted the 'biotechnology revolution' as a main priority area and suggested that 'the consequences of gene splicing, stem cell research and cloning' would have impacts on social and economic life that could be monitored only by longitudinal data. Responses to the 2016 consultation provided a helpful update to this area of research and clarified the importance of longitudinal biosocial research and genomics in understanding many aspects of health and well-being. To reflect this, biosocial research and genomics replaces the 2006 priority area of biotechnology revolution.

As Table 10 above shows, most of the responses received that we coded as biosocial research and genomics related to the need for longitudinal data about social and environmental influences on health. Respondents stressed the need for improved understanding of interactions between biology and social and environmental experience and the importance of tracking biomarkers and measures of biological reactivity over time. As one person put it:

*"How does life get under your skin? (We need longitudinal data on) ways in which social experiences over the life course influence mental and physical health."*  
(respondent 492)

In terms of genomics, gene-environment interaction was suggested as the main area for improved longitudinal data, for example in helping to understand genetic bases of disease and how genetic effects vary over the life-course. Several respondents suggested that more good quality genetic and behavioural data are needed alongside the linking of whole genome data with social science longitudinal data.

### Diversity and identity (see Annex D, Table 11)

Diversity and identity emerged from the 2016 data as a separate main priority area, no longer linked with inequality as had been the case in the 2006 review. The most frequently mentioned sub-theme under this new priority area was the need for longitudinal data to understand changes to political values, attitudes and voting behaviour. This included collecting increased data to understand the development of political identities, party support and voting behaviour, political apathy and alienation, decrease in turn out and links with nationalism and regionalism.

Mapping and understanding social values and attitudes, including attitudes and behaviour regarding sustainability and climate change, was highlighted by a significant number of respondents. Civic engagement and participation – particularly in terms of civic and social integration over the life-course - was highlighted as another important sub-theme linked to diversity and identity. This was linked by a few respondents to social cohesion and how patterns of social and political interaction change in the short, medium and longer term and relate to other wider economic, social and political dynamics.

### Ageing population (see Annex D, Table 12)

The 2006 review explained that the number and proportion of people aged 60 and older are increasing at different rates and is having a huge demographic impact nationally and internationally. Longitudinal data are needed to understand how long people will live and their resources, needs and risks. The need for longitudinal data to understand an ageing population was mentioned by just 21 respondents in answer to question 8, though this may have been due more to the interpretation of the wording of the question than to a lack of interest in this topic (see below for more explanation).

The sub-theme most frequently mentioned was ageing, health and well-being – including dementia and cognitive ageing. Some respondents also felt data are needed to map the impact on older people (and society) of extending working lives. Planning for older age and the transition to retirement was also highlighted by a few respondents.

We have retained ageing population as a separate priority, despite its lower number of mentions overall. It is surprising that respondents did not provide more examples of key issues relating to this topic, given that they billed it as one of the top two priorities from the 2006 list. This may be because those who had already highlighted ageing as a future priority in questions 6 and 7 of the survey thus chose not to re-visit it, or elaborate on their response when asked for *further* priorities in question 8. Future analysis of this dataset may consider the possibility of collapsing the thematic issues associated with ageing population within other areas.

### 4.3. 'Top ten' most frequently cited scientific sub-themes: explanation and analysis

Further analysis of the 2016 consultation survey data allowed us to identify the 'top ten'<sup>11</sup> most frequently cited scientific sub-themes which respondents felt longitudinal data are needed to address (see **Annex D**, Table 13). In order of priority, these are:

- Social, economic, educational, geographic and digital/technological inequalities
- Nature of individuals' involvement in education and skill development across the life-course
- Mental health
- Social and environmental influences on health (biosocial research)
- Intergenerational continuities and discontinuities
- Changes in work and employment patterns, pathways and labour markets
- Nature of the impact of policy on individuals, groups and communities
- Political values, attitudes and voting behaviour
- Psychosocial and emotional factors (such as social networks, loneliness and risk-taking behaviour)
- Social, educational and geographic mobility differences between individuals, communities and age-groups
- Social and physical factors
- Ageing, health and well-being (including dementia and cognitive ageing).

We also examined the 'top ten' scientific sub-themes by respondents' location (**Annex D**, Table 14) and found that:

- Both UK and international respondents made frequent mention of social, economic, education, geographic and digital/technological inequality – second and first on their 'top ten' lists respectively.
- The area of education and skills was also viewed as a high priority to both UK and international respondents.
- For UK respondents, mental health was the first most frequently cited sub-theme, whereas for international respondents it was the fifth.
- Biosocial research, and the impact of policy on individuals, groups and communities, were both sub-themes which were highlighted more often by international respondents than by UK respondents.

Examining the data in terms of respondents' primary research areas (**Annex D**, Table 15), we found that:

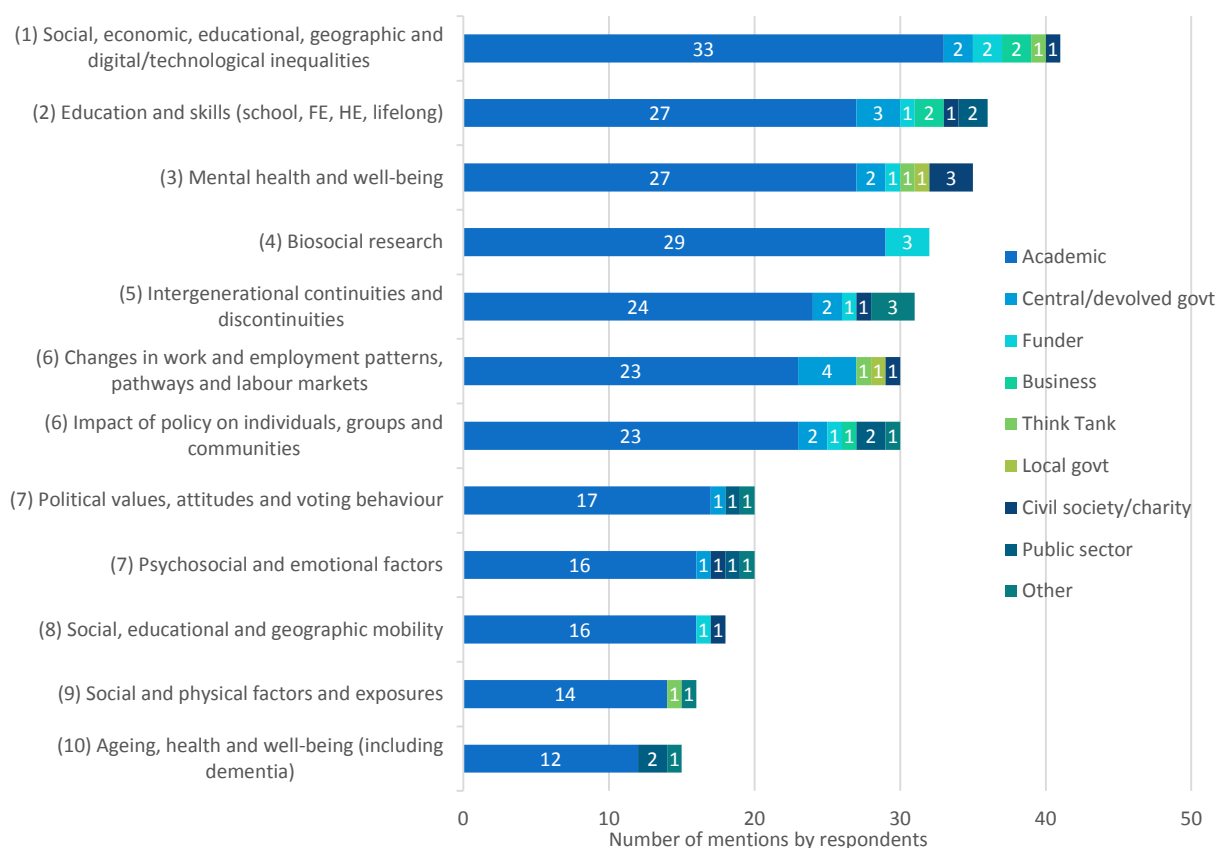
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<sup>11</sup> In reality there are 12 'top ten' issues, as 6<sup>th</sup> and 7<sup>th</sup> place were shared between two issues each.

- Researchers with a background in either economic and social research or medical research only were represented in the data relating to the ‘top ten’ scientific sub-themes. A high proportion (20%) gave no indication of their primary research area so results may be biased due to this missing data.
- Biosocial research was top of the list for respondents in the field of medical research, whereas it was the third most frequently cited scientific sub-theme for economic and social researchers.
- Economic and social researchers felt that issues relating to social, economic, educational, geographic and digital/technological inequality, and education and skills, were the most important scientific sub-themes: these issues were fifth and six most frequently cited by medical researchers.
- Mental health was equally important for both social scientists and medical researchers, coming third on the their respective ‘top ten’ lists of sub-themes.

Further analysis of the ‘top ten’ sub-themes, by respondent sector, is illustrated in Figure 3 below which shows that most proponents were from the academic sector, with representation ranging from 71% to 93%; not a surprising finding given that 80% of all survey respondents described their sector as academic.

**Figure 3: ‘Top ten’ scientific sub-themes most frequently cited in response to question 8, by respondent sector**



## 5. Future methodological and technological issues: suggestions from respondents

Question 9 of the 2016 consultation survey asked respondents ‘to suggest up to three methodological or technological priority issues, thinking broadly across design, implementation and analysis, to be addressed in relation to longitudinal studies’ (see **Annex A**, question 9). A total of 661 open-ended answers were received to this question, from 308 respondents (48% of the total sample of 637), all of whom suggested at least one priority issue. 212 respondents (33% of the total sample) suggested two priority issues and 123 suggested two (19% of total sample).

### 5.1. Methods used for coding and analysing responses to question 9

We used the same method for coding and analysing responses to question 9 of the survey as we used for question 8. The responses to question 9 were equally detailed and again often included several methodological/technological main areas or sub-themes in one field. Given the resources and timescale for reporting, we were able to code only one issue per suggestion (n=661). Our plan to revisit the data analysis in early 2017 may enable more depth and detail to be drawn from the qualitative responses to this question.

### 5.2. Main methodological and technological priority areas and sub-themes

The coding and analysis of responses to question 9 resulted in set of eight main priority areas that respondents suggested should be addressed in relation to longitudinal studies (see **Annex D**, Table 16):

- Longitudinal study design
- Data collection
- Data handling and treatment
- Data analysis
- Data linkage
- Documentation and dissemination
- Infrastructure and capacity building
- Other issues relating to longitudinal studies

These eight main priorities, and their associated sub-themes, are briefly described below.

#### Longitudinal study design (Annex D, Table 17)

As the 2006 review put it, key scientific questions for longitudinal research demand different types of study design for optimum answers. Analysis of responses to the 2016

consultation revealed that longitudinal study design was the most frequently mentioned methodological/technological issue. In terms of study design, the sub-theme of sampling and population representation appeared as the most significant issue. Most respondents commented on the importance and technical difficulties involved in national representation and probability sampling, but a few raised questions about the value of representative samples versus purposive samples. Others commented on specific sample groups that they felt needed additional representation in longitudinal studies such as siblings, twins, 'disease free/healthy' individuals, deceased individuals and emigrants.

Two more of the most important sub-themes for 2016 respondents were issues concerning the development of questions, scales and measures; and increased quantity and quality of measures for comparability, including the harmonisation of variables, across cohorts, sweeps, studies and internationally. Respondents provided a wealth of detailed feedback on specific measures, and suggestions for improvements in question and scale quality, or about means for better harmonisation. These data represent a valuable and unique source of expert input on existing studies, and key suggestions will need careful further synthesis and dissemination.

Other sub-themes raised included issues around integrating biological and social, quantitative and qualitative, and cross-disciplinary measures and how to incorporate these into innovative longitudinal study design. Some respondents also talked about increased use of experimental design and interventions, including designing studies to capture data about 'natural' experiments such as policy changes. Finding ways to measure the impact of policy changes over time was also highlighted as a key scientific priority sub-theme. A few people added comments about the timing of survey sweeps (too few; too irregular; a case for more frequent, simpler sweeps) and the need to ensure that studies are designed with sufficient consideration for future scenarios.

### Data collection (Annex D, Table 18)

Respondents to the 2016 consultation made almost as many suggestions relating to data collection as they did for longitudinal study design. The most frequently mentioned sub-theme was attrition, non-response and sample bias, with much discussion of the challenges therein and how best to tackle them. The response below gives a flavour of the data, but again further analytic work is needed to maximise the value and quality of the suggestions from respondents:

*"Minimizing attrition and maintaining population representation. Two aspects seem crucial here: (1) keep selective attrition to a minimum, by using all available technology and methodological approaches; and (2) ensuring continuing representation by the samples of the target population, through refresher samples and adding new immigrants." (Respondent 59)*

The use of new forms of data collection, including online and digital access to surveys, were suggested as one means for tackling dropping response rates and attrition and to some extent, their corollary, missingness. Novel techniques for data capture was a sub-theme that received significant attention from respondents in their comments and suggestions and included use of personalised apps and digital ID rather than postal addresses, mobile

devices for continuous data collection and potential delivery of interventions, real-world collection of data on mood, emotion, life events, etc.

There was an acknowledgement that many of these new forms of data capture are in the infancy and need investment, testing and evaluation before they can be rolled out for longer term use. Similarly, respondents expressed a need for further exploration and evaluation of the outcomes and impact of mixed mode data collection, including online and digital versus postal surveys and/or face-to-face structured interviews.

### Data linkage (Annex D, Table 19)

Data linkage is the ability to link longitudinal data to a range of other administrative, open or free data, such as health, tax, and educational records, as well as to 'big data' such as digital footprints. Data linkage has the potential to enhance the research capacity of new and existing longitudinal studies both scientifically in terms of helping to answer new questions, and methodologically, in helping to fill data gaps. Due to the very large number of mentions by respondents (18% of the total), data linkage emerged a separate methodological/technological priority issue, and a sub-theme in its own right.

Further work is required to analyse respondents' comments and suggestions about data linkage, but key issues raised included: the need for dedicated resource to handle and clean linked data; understanding the possibilities and implications of data linking including ethical and legal issues; facilitating easier and more efficient access to health and administrative data; anonymisation and security in the context of linked data and unconsented data.

### Data handling and treatment (Annex D, Table 20)

The 2006 review noted that longitudinal data are subject to errors and biases that accumulate over time and need to be taken into account by data analysts and methodologists. Many of these problems can be corrected at the post-field stage. Data preparation and handling involves several specialist tasks, such as data cleaning, imputation of missing data, coding and weighting. Data handling and treatment did not receive many mentions overall (just under 4% of the total), but nonetheless remains a separate methodological/technological priority for the 2016 consultation respondents as it links to the larger sub-themes of attrition, non-response and missingness.

Respondents raised many important issues and questions around the sub-themes of weighting and imputation; measurement error and inference; and coding and data quality. These included the need for investment and quality assurance at these stages of longitudinal research. The response below is indicative of the observations made regarding data handling.

*"Survey weighting: Like most researchers, I rely on analysis weights provided by data producers such as CLS, ISER and NatCen. I understand that there are many complex issues and decisions that lie behind these weights, many of which are under-researched. I get the impression that weighting methods often rely on the intuition of*



*the person involved, rather than being based on any body of research evidence. I worry that this could be detrimental to research. It seems strange that so little attention (funding!) is given to the development of weighting, given the huge cost of the data and that use of the data relies on the weights.” (Respondent 345)*

### Data analysis (Annex D, Table 21)

Methods for analysing longitudinal data have developed significantly over the past ten years, but the data being collected have also changed in their nature and complexity. Issues relating to data analysis represented quite a small proportion of the total number of methodological/technological suggestions (7% of 661). The sub-theme of complex analysis and modelling, however, attracted most of the discussion and is one of the ‘top ten’ most frequently cited sub-themes across methodological/technological responses (see section 5.3).

Respondents had many insightful and detailed answers concerning the nature of the complex analyses required to meet new methodological challenges. Key to these was the recognition that improved methods are needed for modelling multiple and non-linear trajectories and outcomes and for causal inferences and pathways.

*“Longitudinal statistical models can be computationally intensive to estimate when they involve large numbers of variables or time points, sometimes necessitating simplifications. Effort should be invested in establishing how best to alleviate this problem so that models do not need to be simplified or so that they are simplified in the best possible way.” (Respondent 686)*

### Documentation and dissemination (Annex D, Table 22)

A small, but important proportion of the responses about methodological/technological issues related to the documentation and dissemination of longitudinal research. Most of the comments from respondents reflected concerns about the effective, regular and on-going documentation of paradata – the processes by which survey data are collected, analysed and reported. Many examples of where paradata could be improved were given, and included: information on missing data and sample weights; complete variables documentation for some of the cohort studies; documentation of data transformation for older survey sweeps; information about the time taken and computational power used to undertake missing data analyses. Documentation and dissemination of results was also mentioned, particularly in terms of the need for improved feedback to study participants through non-traditional means and more inclusive events.

Some respondents described issues relating to access to longitudinal data. These included: better online access tools for non-expert users; access mechanisms which maximise access but conform to data security requirements and participant consent; access to sensitive data faster and easier and more development of simplified datasets (e.g. easySHARE). A few people raised concerns about the potential for data linkage to reduce access to some data, for example where local authorities own the data.

*“Ensuring continued access to longitudinal data - Many advances in longitudinal data collection (biodata, linkage to administrative data, etc) raise real issues of access given concerns over disclosure risk and the rights of participants. It is important to continue to seek ways on ensuring that the barriers to data access which these developments may impose, do not deter researchers from using the data.”*

(Respondent 54)

### Infrastructure and capacity building (Annex D, Table 23)

The 2006 review noted that the national infrastructure and capacity to fund, design, conduct and analyse longitudinal studies needed development at several levels. It suggested that more specialised training was needed and a variety of other provision was needed within a co-ordinated national programme, including mechanisms for more effective support of the longitudinal studies infrastructure and a framework for the development of a national portfolio of longitudinal resources.

Infrastructure and capacity building continue to be important areas for consideration. Many respondents pointed out that large scale population based longitudinal studies require a substantial permanent infrastructure and that continued funding is needed to collect new, and maintain existing data including ensuring data are kept usable for the future. Funding for the development of standardised protocols for data collection and analysis across different studies was also highlighted as was the importance of sustaining reliable censuses, without which there are no baselines for sample and other studies.

The need for specialist expertise and thus improved training for data analysts and data users were sub-themes that some respondents mentioned. In particular, concerns around skills shortages in analysing longitudinal data appropriately were raised:

*“Training the next generation - There is an urgent need to train social scientists in the advanced statistical methods needed to take advantage longitudinal studies and datasets. There are now methods of scientific investigation that need well trained social scientists versed in advanced techniques.”* (Respondent 272)

Eleven respondents commented on the need for a new birth cohort, many of them suggesting it was of critical importance to the future of longitudinal studies in the UK.

*“A new cohort. We are at risk of falling behind internationally if a new cohort study is not commenced asap.”* (Respondent 386)

*“Re-establishment of the 12-year interval cohort studies series In accordance with ESRC current policy, a new birth cohort study is essential to enable the changing British life course to be monitored and its consequences fully understood. The failure of ESRC to recognise this is a major scientific mistake.”* (Respondent 465)

## Other longitudinal studies issues (Annex D, Table 24)

There were a few topics raised by respondents that could not be covered by existing areas and sub-themes and were thus grouped together under the heading 'other longitudinal studies issues'. The most frequently mentioned of these related to ethical and sensitive/complex issues, including privacy, anonymity and the ethical challenges of protecting identities of participants in a digital age. Respondents highlighted the need for better methods of consent in relation to data linkage and across age transitions, including managing the dynamic nature of consent. Specific difficulties in accessing particularly sensitive samples was also mentioned, such as data relating to post-conflict societies and linking basic epidemiological research to identifiable mortality data (where death certificates are in the public domain).

Big data was also a sub-theme under 'other issues', although it may sit just as well within 'data linkage'. Respondents talked about the need for tools for big data collection and analysis, and the challenges of poor quality big data given it was not collected for research purposes.

### 5.3. 'Top ten' most frequently cited methodological and technological sub-themes: explanation and analysis

Further analysis of the 2016 consultation data allowed us to identify the 'top ten'<sup>12</sup> most frequently cited methodological and technological sub-themes which respondents identified to be addressed in relation to longitudinal studies (see **Annex D**, Table 25). In order of priority, these are:

- Data linkage
- Attrition, non-response and bias
- Online and digital forms of data collection
- Sampling and population representation
- Design of questions, scales and measures
- Complex analysis and modelling
- Comparability and harmonisation (across time, cohorts, studies and countries)
- Other new forms of data collection
- Missing data and reliability
- National infrastructure supporting longitudinal studies
- Bio and social integration at the design stage
- Documentation and dissemination of paradata
- Access to longitudinal data

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<sup>12</sup> In reality there are 15 'top ten' issues, as 5<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> place were shared between more than one issue each.

- Mixed mode data collection.

Figure 4 below shows the distribution of these ‘top ten’ sub-themes by the main sectors of those individuals who suggested them.

**Figure 4: ‘Top ten’ methodological and technological sub-themes most frequently cited in response to Question 9, by respondent sector**

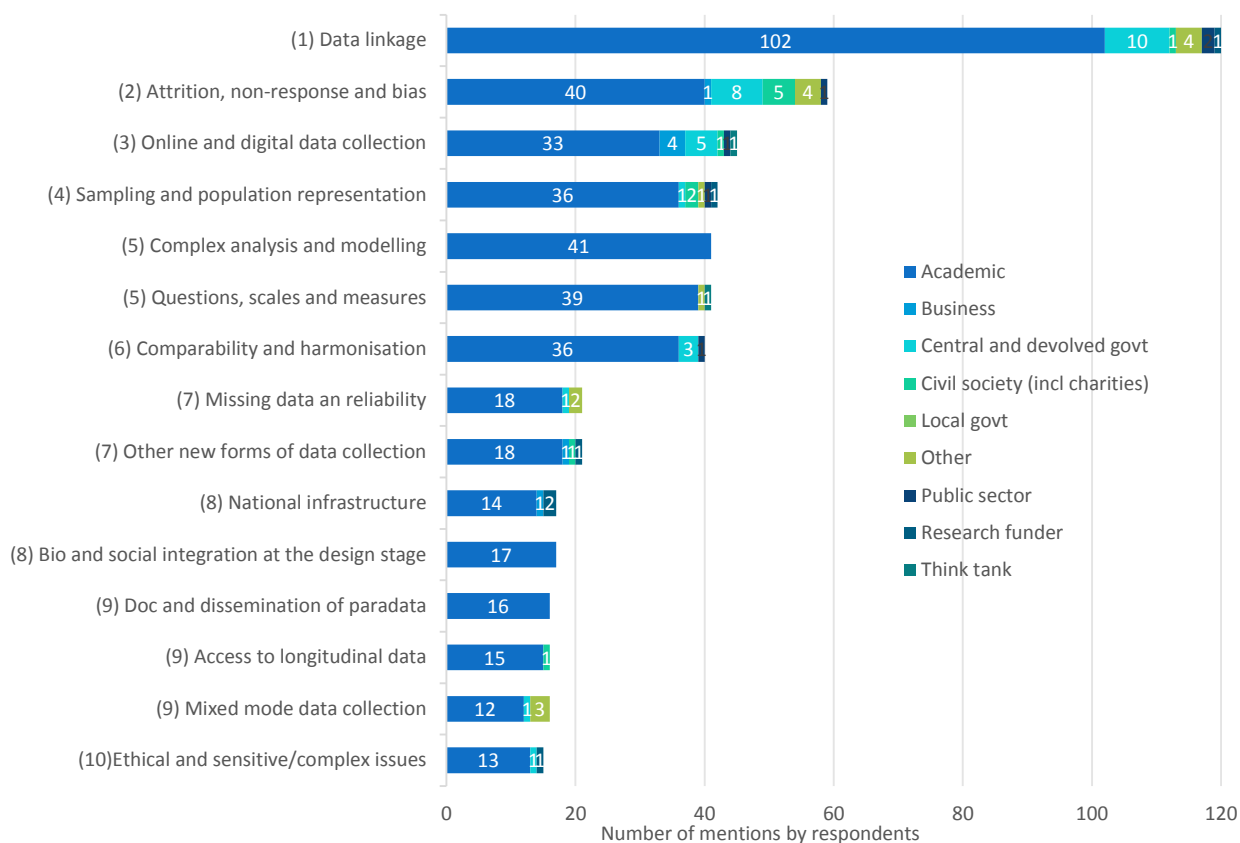


Figure 4 illustrates the very high proportion of respondents from the academic sector who mentioned ‘top ten’ issues; as previously this is to be expected given that 80% of all survey respondents described their sector as academic. The small numbers of respondents from other sectors make it hard to draw any meaningful conclusions from these data, although it is worth noting that the largest proportion of non-academic responses were around the importance of tackling attrition, non-response and bias in longitudinal studies.

Further analysis of the ‘top ten’ methodological and technological sub-themes by location of respondents (**Annex D**, Table 26) revealed that:

- The most frequently mentioned issue for both UK and international respondents was data linkage.
- The areas of attrition, non-response and bias; design of questions, scales and measures; and complex analysis and modelling were all views as a high priority to both UK and international respondents.

- For UK respondents, sampling and population representation; and online and digital forms of data collection; were the second and third most frequently cited sub-themes, whereas for international respondents they were seventh and fifth respectively.

We also looked at the primary research area of respondents citing one of the 'top ten' sub-themes (**Annex D**, Table 27). Within these data, there was a very small amount (2%; n=10) of representation from respondents whose primary research areas were biotechnology and biological, engineering and physical sciences or the natural environment. However, as previously, most of the respondents whose data are included here had a background in economic/social or medical research. Sixteen per cent (n=91) of respondents did not provide details of their primary research area which introduces an element of bias to the data. Despite these caveats, it is worth noting that:

- Data linkage was the only methodological and technological issue mentioned by respondents from across all five primary research areas; it was also first on the 'top ten' list for respondents from all areas except the natural environment.
- The second and third most important issues for medical researchers were comparability and harmonisation; and complex analysis and modelling. These issues were fifth and sixth on the 'top ten' list for economic and social researchers.
- In contrast, attrition, non-response and bias was the second most frequently cited issue for economic and social researchers, but came in seventh for those working in the field of medical research.
- Medical researchers made frequent mention of the need for bio and social integration at the design stage, and for developing new forms of data collection; these issues featured less highly on the 'top ten' list for economic and social researchers.

## 6. Further comments and suggestions from respondents

The final question of the 2016 consultation survey provided respondents with an opportunity for feedback on any further issues relating to longitudinal studies. A total of 137 comments and suggestions were received to this question, representing 21% of the total sample of 637 respondents. Of these, 77% of respondents were from the academic sector, 7% described their sector as other, 6% were from central, devolved or local government, and the remaining 10% were spread across civil society/charity (4%), business (2%), research funders (2%), public sector (1%) and think tanks (1%). Most of the respondents whose data are included here had a background in economic/social (54%) or medical research (17%), with just two people responding from other areas. Twenty-eight per cent of respondents provided no information about their primary research area.

As before, open-ended responses were varied, detailed and often included several issues and suggestions. The timescale for reporting meant that we were able to code only one issue per respondent (n=137) and in almost all cases this did reflect the most pertinent aspect of the answer. We plan to revisit this material in early 2017 which will enable further exploration of these rich comments and suggestions.

Comments and suggestions were grouped under the following main areas (see **Annex D**, Table 28):

- Further discussion of scientific priorities for longitudinal research
- Additional methodological and technological issues
- Importance, value and contribution of existing longitudinal studies
- Infrastructure and capacity building
- Maximising dissemination and impact from longitudinal research
- Comments on the consultation process itself.

### Further discussion of scientific priorities for longitudinal research

Eleven responses highlighted a number of further scientific areas for longitudinal research. For the next draft of this report, these data will be incorporated into the earlier section covering further scientific themes and issues.

### Additional methodological and technological issues

Similarly, a sizeable proportion of respondents (n=32) took the opportunity to reiterate some key methodological and technological issues. These included specific comments relating to technicalities of questions and measures; population representation; comparability and harmonisation; integration of qualitative data; data linkage; collection of bio -marker data; the importance of maintaining face to face interviews as part of mixed mode design; attrition, non-response and bias; timing of sweeps, and so on. Seven

responses specified the need for a new birth cohort. These data will be included in the analysis relating to methodological and technical issues in the next draft of this report.

### Importance, value and contribution of existing longitudinal studies

The largest proportion of responses to question 10 were those which highlighted the importance, value and contribution of longitudinal research (38%; n=52). A very strong rationale was built by respondents affirming longitudinal studies as the foundation and cornerstone of UK social science and noting their strong contribution to professional knowledge and development in many spheres, to informing policy debates (e.g. around inter-generational inequalities) and to the development of policy initiatives (e.g. to promote social mobility).

*“Only to reiterate that longitudinal studies are essential for my research and that we are extremely fortunate in the UK to have such a wealth of studies to work with.”*

*“These cohort studies collectively form basis of a very important resource to the UK, one which provides national and international researchers with a resource in which they can test hypotheses, explore mechanisms, and understand processes involved in many aspects of a persons’ life including their health, mortality, wealth, inequality, education, social life and family formation. Research from these longitudinal studies offers an empirical basis from which policy makers can form opinions, develop policies and implement change in society.”*

Respondents offered detailed and persuasive comments about the uniqueness and intrinsic value of existing longitudinal resources, and made a clear, strong case for the fundamental importance of continuing to fund and support them as a national asset and for future generations.

*“The existing longitudinal surveys in the UK are of immense value to researchers and policy-makers and for training the next generation. Continued investment will mean that the UK stays world class in this field... This is an exciting area where the wealth of excellent data will help address many important questions we face today and tomorrow!”*

*“The UK is one of the few last bastions of strong longitudinal data. This should be protected and funded as a priority.”*

Many people highlighted the centrality of the ESRC’s role in future support and investment for longitudinal resources:

*“The UK is currently the world leader in longitudinal data resource, thanks in large part to investment by the ESRC. It is vital that ESRC also continue to invest in the analysis of these data in order to make the most of previous investment.”*

*“The role of the ESRC is absolutely central to ensuring the continued vitality of longitudinal studies. There are enormous advantages in supporting generic studies that are not based on a single issue, since they provide exciting opportunities for trans-disciplinary work, raising the possibility of genuinely transformational discoveries.”*

### Infrastructure and capacity building

Investment in the infrastructure supporting longitudinal research and building the capacity to continue to deliver longitudinal studies were mentioned by a fair number of respondents to the previous question 9. These issues were reiterated by 12% (n=17) of respondents to question 10 who suggested that:

- Trained and expert fieldwork staff are a national resource and should be valued and supported.
- Designing and running longitudinal studies should be better valued within HEI promotion systems.
- Direct access to data teams would be helpful in order to raise queries that can be dealt with promptly, especially regarding data errors.
- There continues to be a need to enhance the capacity of social scientists to use and analyse longitudinal data, through training and better access to existing datasets.
- Discussion and reflection is needed across the sector (including amongst funders) about processes for commissioning and managing longitudinal research and if any changes to existing models of operation are needed. This includes a consideration of the effectiveness of ‘market-led’ approaches to securing the fieldwork elements of longitudinal studies and the current emphasis on the Principal Investigator (PI) model for managing large-scale investments.

### Maximising dissemination and impact from longitudinal research

Ten per cent of responses concerned the need for improved access to and dissemination of longitudinal research in order to maximise its impact, both nationally and internationally. Respondents suggested that easier, more effective access to existing datasets is needed.

*“Key issues in my mind concern the timely release of data through the UK Data Service. For example, only recently did a data collection about twins in the 1970 British Cohort Study become available despite the original ESRC project having been completed years ago... We need assurances that the ESRC longitudinal surveys will remain easy to access and that the people who run the surveys will not impose restrictions on legitimate academic researchers.”*

There was also acknowledgement of the need for more international comparison work and better use and dissemination of longitudinal evidence nationally, to a wider group of end-users, including policy makers and those working in the civil society/charity sector.



*“(Longitudinal studies) are national jewels but they are underused and the potential benefits largely unrealised.”*

*“The greater issue is not what evidence is analysed, but how it is disseminated; many working in non-profit sectors don't realise the great data they could use, and find access and interpretation of it impenetrable.”*

*“Funding to maximise data dissemination and policy impact. Longitudinal studies remain an untapped resource... Policy makers need to be better engaged.”*

### Comments on the consultation process

Eleven people offered specific feedback on the consultation process, including the survey and its questions. This included comments about the scope and breadth of some of the suggested priority areas and categories, difficulties with the ranking system, concerns about the potential for bias, and a request for further in-depth discussion and analysis during the next steps of the review process:

*“I did find the list of areas difficult. As someone who has worked on different longitudinal studies all my life, I would have liked a 'multidisciplinary' category to encompass the fact that many disciplines interact when studying the individual. It is very important for researchers involved in such studies to be aware of, and work within, a variety of disciplines.”*

*“It seems very odd to use a public link and SurveyMonkey to conduct this sort of research. How do you propose to deal with issues like people lobbying their friends to take part to advance the case for one priority or another?”*

*“I would hope this rather superficial form of consultation will be followed up with some more in-depth conversations with international colleagues already thinking about the serious challenges facing longitudinal studies in the 21st century.”*

## 7. Concluding thoughts and next steps needed

This interim report aims to provide a quick and early synthesis of the key findings of a focused consultation exercise, the first step in ESRC's Longitudinal Studies Review 2017. The number of responses that were received to the online consultation survey was unprecedented for a focused consultation of this nature. The quality and depth of the suggestions and insights from respondents was outstanding and represents a valuable and unique source of expert and detailed feedback both on existing studies and in terms of future developments in longitudinal research.

We are very aware that the timescale for the interim reporting process necessitated a pragmatic approach to data coding and analysis which has not done sufficient justice to the scale and quality of the material provided by respondents. We acknowledge that further analytic work is needed to understand and describe the key themes more fully and a second, more detailed report on the findings of the focused consultation is planned for early 2017.

## Annex A Focused consultation: survey questions

The survey questions and the online survey tool were devised and implemented by the ESRC's Longitudinal Studies team. The survey was open for four weeks, from 3<sup>rd</sup> October to 4<sup>th</sup> November 2016.

---

1. Are you currently based...?
  - In the UK
  - Outside the UK (international)
  
2. What sector do you primarily work in?
  - Academic
  - Business
  - Civil society (including charity)
  - Learned society
  - Central and devolved government
  - Local government
  - Public sector (not government)
  - Research funder
  - Think tank
  - Other (please specify)
  
3. What organisation do you work for?
  
4. What is your career stage?
  - Undergraduate
  - Postgraduate
  - Postdoctoral
  - Mid-career
  - Senior

## 5. What is your primary research area?

- Economic and social
- Arts and humanities
- Medical
- Natural environment
- Biotechnology and biological sciences
- Engineering and physical sciences

## 6. Listed below are the priority areas that longitudinal data are needed to address, as identified in the 2006 longitudinal studies review.

Please indicate how important you feel these areas are in the future.

	Not at all important	Slightly important	Important	Fairly important	Very important
Ageing population					
Long-term effects of childhood experience					
Timing of transitions					
Demographic shifts and mobilities					
Biotechnology revolution					
Immigration					
Cultural diversity and inequality					
Globalisation					

## 7. Please indicate what you consider to be the top three priorities from these areas

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Ageing population			
Long-term effects of childhood experience			
Timing of transitions			
Demographic shifts and mobilities			
Biotechnology revolution			
Immigration			
Cultural diversity and inequality			
Globalisation			

8. Here you have the opportunity to suggest up to two further priority areas that longitudinal data are needed to address.
  - 8a) Suggested area 1:  
Please provide a summary heading and a brief overview of your suggested area.
  
  - 8b) Suggested area 2:  
Please provide a summary heading and a brief overview of your suggested area.
  
9. The 2006 review identified some key issues concerning data quality, methodology and analysis in relation to longitudinal studies (see chapter seven (PDF)). Since then there have been significant advances in methodology and technology. Here you have the opportunity to suggest up to three methodological or technological priority issues, thinking broadly across design, implementation and analysis, to be addressed in relation to longitudinal studies.
  - 9a) Suggested key methodological / technological issue 1:  
Please provide a summary heading and a brief overview for your suggestion.
  
  - 9b) Suggested key methodological / technological issue 2:  
Please provide a summary heading and a brief overview for your suggestion.
  
  - 9c) Suggested key methodological / technological issue 3:  
Please provide a summary heading and a brief overview for your suggestion.
  
10. Do you have any further comments on any of issues covered (or not covered) in this survey?

## Annex B Coding frame for further scientific priorities (responses to question 8)

Main priority area	No.	Scientific thematic issues
Long-term effects of childhood and adult experience	1	Education and skills - school, FE, HE, lifelong
	2	Impact of policy on individuals, groups and communities
	3	Psychosocial and emotional factors
	4	Social and physical factors
	5	Access to new media and technology
	6	Environmental factors, climate change and sustainability
	7	Parenthood, parenting and separation
	8	Pre-natal factors and exposures
	9	Diet and nutrition
	10	Experience of physical, emotional and sexual violence
	11	Language development
	12	Alcohol and drug use
	13	Need for on-going collection of data into adulthood and across the life-course
	14	Prevalence and experience of disability
	15	Need for cross-national research and comparisons
	16	Pet ownership
Demographic shifts and mobilities	17	Intergenerational continuities and discontinuities
	18	Changes in work and employment patterns, pathways and labour markets
	19	Social, educational and geographic mobility
	20	Household/family dynamics, employment and finances
	21	Neighbourhood change and development and impact of housing/living situation
	22	Changes to family structure
	23	Migration
	24	Transitions - timing of, and generally
	25	Changes in time use
	26	Transportation use and change
Health and well-being	27	Mental health
	28	Work, health and well-being
	29	Life-course and health trajectories
	30	Long-term conditions and outcomes
	31	Identification of risks and protective factors
	32	Experience of and demand for health (and social care) services
	33	Supporting and sustaining healthy living
	34	Predictors of disease and personalised medicine
	35	Need for cross-national health research and comparisons

	36	Obesity
	37	Fertility
	38	Awareness and understanding of health issues
Equality and inequality	39	Social, economic, educational, geographic and digital/technological inequalities
	40	Health inequalities
	41	Gender inequalities
	42	Inequalities relating to race and ethnicity
	43	Changes in discriminatory behaviours (racism, homophobia, sexism, disablism)
Biosocial research and genomics	44	Biosocial research
	45	Genomics
Diversity and identity	46	Political values, attitudes and voting behaviour
	47	Social values and attitudes - including to environmental issues
	48	Civic engagement and participation
	49	Social cohesion
Ageing population	50	Health and well-being
	51	Older workers and extending working lives
	52	Cognitive ageing and dementia
	53	Retirement planning and transition
	54	Illness and disability

## Annex C Coding frame for future methodological and technological issues (responses to question 9)

Main priority area	No.	Methodological and technological issues
Longitudinal study design	1	Study design generally
	2	Sampling and population representation (including probability sampling)
	3	Comparability and harmonisation (across time, studies, cohorts and countries)
	4	Experimental/interventions (including 'natural' experiments)
	5	Questions, scales and measures
	6	Quantitative and qualitative integration
	7	Bio and social integration
	8	Interdisciplinary
	9	Timing of sweeps
	10	Future-proofing
Data collection	11	Attrition, non-response and sample bias
	12	Missing data and reliability
	13	Face-to-face interviews
	14	Mixed mode
	15	Online and digital
	16	Biomarker data
	17	Other new forms of data collection
Data handling and treatment	18	Coding and quality assurance
	19	Weighting and imputation
	20	Measurement error and inference
Data analysis	21	Complex analysis and modelling
	22	Causation
	23	Outcomes and generalisability
Documentation and dissemination	24	Of results
	25	Of paradata
	26	Access to longitudinal data
Data linkage	27	Data linkage
Infrastructure and capacity building	28	Need for specialist expertise
	29	Support to data users with complex analysis
	30	Training data analysts and data users
	31	Need for a new birth cohort
Other longitudinal	32	Longitudinal studies infrastructure



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studies issues	33	Ethical and sensitive/complex issues
	34	Other methodological issues not covered
	35	Big data

## Annex D Data tables

**Table 1: Respondents by location (base size = 637 responses)**

Location	Number of respondents	Percentage
UK	531	83.4%
International	102	16.0%
No answer	4	0.6%
<b>Total</b>	<b>637</b>	<b>100.0%</b>

**Table 2: Respondents by sector (base size = 637 responses)**

Sector	Number of respondents	Percentage
Academic	510	80.0%
Central and devolved government	40	6.3%
Other	19	3.0%
Civil society (including charity)	17	2.7%
Public sector (not government)	14	2.2%
Research funder	11	1.7%
Business	10	1.6%
Local government	9	1.4%
Think tank	7	1.1%
<b>Total</b>	<b>637</b>	<b>100.0%</b>

**Table 3: Respondents by career stage (base size = 488 responses)**

Career stage	Number of respondents	Percentage
Senior	170	34.8%
Mid-career	138	28.3%
Postdoctoral	111	22.7%
Postgraduate	67	13.7%
Undergraduate	2	0.4%
<b>Total</b>	<b>488</b>	<b>100.0%</b>
(No answer)	(149)	

**Table 4: Respondents by primary research area (base size = 486 responses)**

Primary research area	Number of respondents	Percentage
Economic and social	393	80.9%
Medical	82	16.9%
Biotechnology and biological sciences	7	1.4%
Natural environment	3	0.6%
Engineering and physical sciences	1	0.2%
<b>Total</b>	<b>486</b>	<b>100.0%</b>
(No answer)	(151)	

**Table 5: Main scientific priority areas identified by respondents to the 2016 consultation (question 8)**

Main scientific priority areas identified by respondents to the 2016 consultation		Number of mentions
A	Long-term effects of childhood and adult experience	178
B	Demographic shifts and mobilities	135
C	Health and well-being	111
D	Equality and inequality	60
E	Biosocial research and genomics	42
F	Diversity and identity	41
G	Ageing population	21
	<b>Total number of coded responses</b>	<b>588</b>

**Table 6: Long-term effects of childhood and adult experience: sub-themes by number of respondent mentions**

Long-term effects of childhood and adult experience: sub-themes		Number of mentions
1	Education and skills - school, FE, HE, lifelong	36
2	Impact of policy on individuals, groups and communities	30
3	Psychosocial and emotional factors	20
4	Social and physical factors	16
5	Access to new media and technology	12
6	Environmental factors, climate change and sustainability	11
7	Parenthood, parenting and separation	11
8	Pre-natal factors and exposures	10
9	Diet and nutrition	8
10	Experience of physical, emotional and sexual violence	5
11	Language development	5
12	Need for on-going collection of data into adulthood and across the life-course	4

13	Prevalence and experience of disability	3
14	Need for cross-national research and comparisons	3
15	Alcohol and drug use	2
16	Pet ownership	2
	<b>Total number of coded responses</b>	<b>178</b>

**Table 7: Demographic shifts and mobilities: sub-themes by number of mentions**

Demographic shifts and mobilities: sub-themes		Number of mentions
1	Intergenerational continuities and discontinuities	31
2	Changes in work and employment patterns, pathways and labour markets	30
3	Social, educational and geographic mobility	18
4	Household/family dynamics, employment and finances	14
5	Neighbourhood change and development and impact of housing/living situation	11
6	Changes to family structure	10
7	Migration	8
8	Transitions - timing of, and generally	6
9	Changes in time use	5
10	Transportation use and change	2
	<b>Total number of coded responses</b>	<b>135</b>

**Table 8: Health and well-being: sub-themes by number of mentions**

Health and well-being: sub-themes		Number of mentions
1	Mental health	35
2	Work, health and well-being	14
3	Life-course and health trajectories	11
4	Long-term conditions and outcomes	10
5	Identification of risks and protective factors	9
6	Experience of and demand for health (and social care) services	7
7	Supporting and sustaining healthy living	6
8	Predictors of disease and personalised medicine	5
9	Need for cross-national research and comparisons	5
10	Obesity	4
11	Fertility	3
12	Awareness and understanding	2
	<b>Total number of coded responses</b>	<b>111</b>

**Table 9: Equality and inequality: sub-themes by number of mentions**

Equality and inequality: sub-themes		Number of mentions
1	Social, economic, educational, geographic and digital/technological inequalities	41
2	Health inequalities	9
3	Inequalities relating to race and ethnicity	4
4	Gender inequalities	3
5	Changes in discriminatory behaviours - racism, homophobia, sexism, disablism	3
<b>Total number of coded responses</b>		<b>60</b>

**Table 10: Biosocial research and genomics: themes by number of mentions**

Biosocial research and genomics: sub-themes		Number of mentions
1	Social and environmental influences on health	32
2	Genomics	10
<b>Total number of coded responses</b>		<b>42</b>

**Table 11: Diversity and identity: sub-themes by number of mentions**

Diversity and identity: sub-themes		Number of mentions
1	Political values, attitudes and voting behaviour	20
2	Social values and attitudes - including to environmental issues	11
3	Civic engagement and participation	8
4	Social cohesion	2
<b>Total number of coded responses</b>		<b>41</b>

**Table 12: Ageing population: sub-themes by number of mentions**

Ageing population: sub-themes		Number of mentions
1	Ageing, health and well-being – including dementia and cognitive ageing	15
2	Older workers and extending working lives	4
3	Retirement planning and transition	2
<b>Total number of coded responses</b>		<b>21</b>

**Table 13: 'Top ten' scientific thematic issues most frequently cited in response to question 8**

'Top ten' scientific sub-themes identified by respondents		Number of mentions
1	Social, economic, educational, geographic and digital/technological inequalities	41
2	Education and skills (school, FE, HE, lifelong)	36
3	Mental health	35
4	Biosocial research	32
5	Intergenerational continuities and discontinuities	31
6	Changes in work and employment patterns, pathways and labour markets	30
	Impact of policy on individuals, groups and communities	30
7	Political values, attitudes and voting behaviour	20
	Psychosocial and emotional factors	20
8	Social, educational and geographic mobility	18
9	Social and physical factors	16
10	Ageing, health and well-being (including dementia and cognitive ageing)	15

**Table 14: 'Top ten' scientific sub-themes by respondent location**

No.	Scientific sub-themes identified by respondents	Number of mentions by location		
		UK	International	Not given
1	Social, economic, educational, geographic and digital/technological inequality	31	9	1
2	Education and skills (school, FE, HE, lifelong)	28	7	1
3	Mental health and well-being	32	3	-
4	Biosocial research	25	7	-
5	Intergenerational continuities and discontinuities	26	5	-
6	Changes in work and employment patterns, pathways and labour markets	27	3	-
	Impact of policy on individuals, groups and communities	23	7	-
7	Political values, attitudes and voting behaviour	16	4	-
	Psychosocial and emotional factors	15	5	-
8	Social, educational and geographic mobility	17	1	-
9	Social and physical factors	12	4	-
10	Ageing, health and well-being (including dementia and cognitive ageing)	15	-	-

**Table 15: 'Top ten' scientific sub-themes by respondent primary research area**

No.	Scientific sub-themes identified by respondents	Number of mentions by primary research area		
		Economic and social	Medical	Not given
1	Social, economic, educational, geographic and digital/technological inequality	29	2	10
2	Education and skills (school, FE, HE, lifelong)	25	1	10
3	Mental health and well-being	21	5	9
4	Biosocial research	21	7	4
5	Intergenerational continuities and discontinuities	14	6	11
6	Changes in work and employment patterns, pathways and labour markets	20	2	8
	Impact of policy on individuals, groups and communities	22	1	7
7	Political values, attitudes and voting behaviour	17	-	3
	Psychosocial and emotional factors	13	2	5
8	Social, educational and geographic mobility	15	1	2
9	Social and physical factors	9	3	4
10	Ageing, health and well-being (including dementia and cognitive ageing)	7	5	3

**Table 16: Main methodological and technological priority areas (question 9)**

Main methodological and technological priority areas identified by respondents to the 2016 consultation		Number of mentions
A	Longitudinal study design	180
B	Data collection	176
C	Data linkage	120
D	Data analysis	49
E	Infrastructure and capacity building	43
F	Documentation and dissemination	37
G	Other issues relating to longitudinal studies	32
H	Data handling and treatment	24
<b>Total number of mentions</b>		<b>661</b>

**Table 17: Longitudinal study design: sub-themes by number of mentions**

Longitudinal study design: sub-themes		Number of mentions
1	Sampling and population representation	42
2	Questions, scales and measures	41
3	Comparability and harmonisation - across time, studies cohorts and countries	40
4	Bio and social integration	17
5	Quantitative and qualitative integration	12
6	Study design generally	9
7	Experimental/interventions - including 'natural' experiments	8
8	Interdisciplinary	6
9	Timing of sweeps	3
10	Future-proofing	2
<b>Total number of coded responses</b>		<b>180</b>

**Table 18: Data collection: sub-themes by number of mentions**

Data collection: sub-themes		Number of mentions
1	Attrition, non-response and sample bias	59
2	Online and digital	45
3	Missing data and reliability	21
4	Other new forms of data collection	21
5	Mixed mode	16
6	Biomarker data	11
7	Face-to-face interviews	3
<b>Total number of coded responses</b>		<b>176</b>

**Table 19: Data linkage: sub-themes by number of mentions**

Data linkage: sub-themes		Number of mentions
1	Data linkage	120
<b>Total number of coded responses</b>		<b>120</b>

**Table 20: Data handling and treatment: sub-themes by number of mentions**

Data handling and treatment: sub-themes		Number of mentions
1	Weighting and imputation	13
2	Measurement error and inference	6
3	Coding and quality assurance	5
<b>Total number of coded responses</b>		<b>24</b>



**Table 21: Data analysis: sub-themes by number of mentions**

Data analysis: sub-themes		Number of mentions
1	Complex analysis and modelling (41)	41
2	Causation (6)	6
3	Outcomes and generalisability (2)	2
<b>Total number of coded responses</b>		<b>49</b>

**Table 22: Documentation and dissemination: sub-themes by number of mentions**

Documentation and dissemination: sub-themes		Number of mentions
1	Of paradata (16)	16
2	Access to longitudinal data (16)	16
3	Of results and findings (5)	5
<b>Total number of coded responses</b>		<b>37</b>

**Table 23: Infrastructure and capacity building: sub-themes by number of mentions**

Infrastructure and capacity building: sub-themes		Number of mentions
1	Longitudinal studies infrastructure	17
2	Need for a new birth cohort	11
3	Training data analysts and data users	9
4	Need for specialist expertise	4
5	Support to data users with complex analysis	2
<b>Total number of coded responses</b>		<b>43</b>

**Table 24: Other longitudinal studies issues: sub-themes by number of mentions**

Other longitudinal studies issues: sub-themes		Number of mentions
1	Ethical and sensitive/complex issues	15
2	Big data	9
3	Other methodological issues not covered	8
<b>Total number of coded responses</b>		<b>32</b>

**Table 25: 'Top ten' methodological and technological sub-themes most frequently cited in response to question 9**

'Top ten' methodological and technological sub-themes identified by respondents		Number of mentions
1	Data linkage	120
2	Attrition, non-response and bias	59
3	Online and digital forms of data collection	45
4	Sampling and population representation	42
5	Design of questions, scales and measures	41
	Complex analysis and modelling	41
6	Comparability and harmonisation (across time, cohorts, studies and countries)	40
7	Other new forms of data collection	21
	Missing data and reliability	21
8	National infrastructure supporting longitudinal studies	17
	Bio and social integration at the design stage	17
9	Documentation and dissemination of paradata	16
	Access to longitudinal data	16
	Mixed mode data collection	16
10	Ethical and sensitive/complex issues	15

**Table 26: 'Top ten' methodological and technological sub-themes by respondent location**

No.	Methodological and technological sub-themes identified by respondents	Number of mentions by location		
		UK	International	Not given
1	Data linkage	108	12	-
2	Attrition, non-response and bias	52	7	-
3	Online and digital forms of data collection	40	5	-
4	Sampling and population representation	41	1	-
	Design of questions, scales and measures	35	7	-
5	Complex analysis and modelling	33	8	-
6	Comparability and harmonisation	34	6	-
7	Other new forms of data collection	20	1	-
	Missing data and reliability	19	2	-
8	National infrastructure supporting longitudinal studies	14	2	1
	Bio and social integration at the design stage	15	2	-
9	Documentation and dissemination of paradata	12	4	-
	Access to longitudinal data	15	1	-
	Mixed mode data collection	13	3	-
10	Ethical and sensitive/complex issues	14	1	-

**Table 27: 'Top ten' methodological and technological sub-themes by respondent primary research area**

No.	Methodological and technological sub-themes identified by respondents	Number of mentions by primary research area					
		Economic and social	Medical	Biotech and biological	Eng and physical sciences	Natural environment	Not given
1	Data linkage	73	18	2	1	1	25
2	Attrition, non-response and bias	36	3	-	-	-	20
3	Online and digital forms of data collection	29	3	-	-	1	12
4	Sampling and population representation	29	6	-	-	1	6
	Design of questions, scales and measures	33	1	-	-	1	6
5	Complex analysis and modelling	24	15	1	-	-	1
6	Comparability and harmonisation (across time, cohorts, studies and countries)	25	9	-	-	-	6
7	Other new forms of data collection	9	7	-	-	2	3
	Missing data and reliability	15	2	-	-	-	4
8	National infrastructure supporting longitudinal studies	13	1	-	-	-	3
	Bio and social integration at the design stage	10	7	-	-	-	-
9	Documentation and dissemination of paradata	15	1	-	-	-	-
	Access to longitudinal data	11	4	-	-	-	1
	Mixed mode data collection	10	2	-	-	-	4
10	Ethical and sensitive/complex issues	8	4	-	-	-	3

**Table 28: Main areas of further comment and suggestion (question 10)**

<b>Main areas of further comment and suggestion identified by respondents to the 2016 consultation</b>		<b>Number of mentions</b>
A	Further discussion of scientific priorities for longitudinal research	8
B	Additional methodological and technological issues	35
C	Importance, value and contribution of existing longitudinal studies	52
D	Infrastructure and capacity building	23
E	Maximising dissemination and impact from longitudinal research	7
F	Comments on the consultation process itself	12
<b>Total number of mentions</b>		<b>137</b>