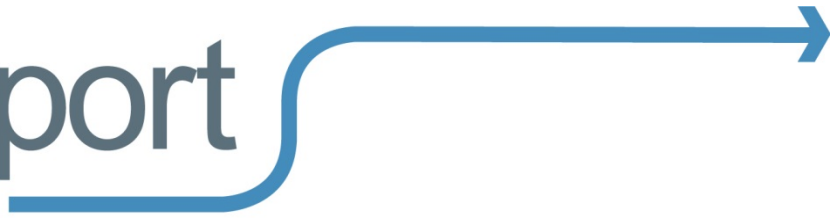


ies Report

Institute for Employment Studies



Capturing school-to-work transitions with longitudinal data sources

Emma Pollard, Matthew Williams, Clare Huxley, Martha Green, Alex Martin,
Helen Gray

November 2017

Report 512

Institute for Employment Studies

IES is an independent, apolitical, international centre of research and consultancy in public employment policy and HR management. It works closely with employers in all sectors, government departments, agencies, professional bodies and associations. IES is a focus of knowledge and practical experience in employment and training policy, the operation of labour markets, and HR planning and development. IES is a not-for-profit organisation.

Careers & Enterprise Company

The organisation was created in 2015 to transform the provision of careers education and advice for young people and inspire them about opportunities offered by the world of work, to help young people consider all the options open to them when they leave school and ensure they leave school fully prepared for life. Their work focuses on young people aged 12 to 18, and they encourage collaboration between school, colleges and employers and support brokerage arrangements that enable employers to interact with pupils. The organisation also fund innovative projects and research to stimulate good practice to increase effective careers and enterprise activities in schools and colleges in England.

Acknowledgements

The authors are indebted to Jonathan Boys, Tristram Hooley and Jenny Hansson at the Careers & Enterprise Company for their advice and support. We are also grateful for the input of Stefan Speckesser, Gill Brown and Joe Cunningham at IES.

Institute for Employment Studies
City Gate
185 Dyke Road
Brighton BN3 1TL
UK

Telephone: +44 (0)1273 763400
Email: askies@employment-studies.co.uk
Website: www.employment-studies.co.uk

Copyright © 2017 Institute for Employment Studies

IES project code: 4762

Contents

Summary	1
1 Introduction	4
1.1 Approach	4
1.1.1 <i>Scoping data sources</i>	4
1.1.2 <i>Literature search</i>	7
2 Review of key longitudinal data sources	9
2.1 Introduction	9
2.2 Identifying data sources	10
2.2.1 <i>Longitudinal surveys with young people</i>	10
2.2.2 <i>General population longitudinal surveys</i>	17
2.2.3 <i>Data focused on further and higher education</i>	19
2.2.4 <i>School and pupil administrative data</i>	22
2.2.5 <i>Linked administrative data</i>	23
2.2.6 <i>Others</i>	24
3 Use of longitudinal data sources	28
3.1 Themes	28
3.1.1 <i>Factors influencing outcomes</i>	28
3.1.2 <i>Tracking studies identifying pathways</i>	29
3.1.3 <i>Focusing on specific transition points</i>	30
3.1.4 <i>Impacts of specific events or activities</i>	30
3.2 Methods and data sources used	30
4 Areas for further enquiry	32
4.1 Ways to utilise longitudinal data opportunities	32
4.2 Potential research questions/themes	32
4.3 Recommendations	35
Bibliography	37

Summary

There are a variety of data sources that capture the school-to-work transition from a range of perspectives, and a number of studies that utilise these sources. This paper identifies and scopes the existing large-scale datasets to highlight which have potential to support the work of The Careers & Enterprise Company (and other interested stakeholders). The research involved: a brief literature search for articles, reports and papers in the field and identified the data sources used by the authors; a review of the most relevant of these materials to understand how these data have been used and the research themes explored; and scoping work to assess the nature, opportunities and limitations offered by potential datasets.

Useful data sources

There are three key categories of data that can and have been used to track transitions of young people in the UK: true longitudinal data or panel data; repeated cross-sectional data or cohort studies; and administrative data.

Within these categories are **longitudinal surveys specifically focused on young people** and these provide the most fruitful opportunities for the Careers & Enterprise Company. Key sources here include: the Longitudinal Study of Young People in England (LYSPE, ongoing); the Youth Cohort Study (YCS, closed in 2010); the new Millennium Cohort Study (MCS, ongoing but the cohort are currently aged 16); British Cohort Study (BCS, ongoing, the cohort are currently in their late 40s); ASPIRES (ongoing, the second cohort are currently aged 17); the Effective Pre-School, Primary and Secondary Education Project (EPPSE, closed in 2013 when the cohort were aged 16); and the Avon Longitudinal Study of Parents and Children (ALSPAC, ongoing and the cohort are currently in their mid-20s).

Another good source of longitudinal data is **general population surveys** which, although not specifically designed to capture data about young people, do cover a wide age range (often starting at age 16). A key source is the British Household Panel Survey (BHPS) now known as Understanding Society (ongoing since 1991) and this includes a specific youth panel.

There are also data sources focused on **further and higher education** (a mixture of **surveys and administrative data**) which can provide information on part of the transition from education to work. These sources include the Individualised Learner Record (ILR) which is focused on further education; and higher education (HE) sources such as Higher Education Statistics Agency (HESA) data – the Student Record and the destinations surveys; the University and Colleges Admissions Service (UCAS) data and the specially commissioned Futuretrack survey (closed in 2013, when most of the original cohort of HE applicants were in their early to mid-20s).

A further source of data is **administrative sources** focused on school aged pupils – particularly the National Pupil Database (NPD) which contains a vast amount of individual level factual data and can be linked to other self-reported data or data on post-16 outcomes. A new development is the Learning Education Outcomes (LEO) project which is developing an experimental dataset linking administrative data from different government departments to follow individuals through their education and several years into the labour market.

There are a range of other miscellaneous data sources which may provide some insights into the transitions of young people. These include surveys of individuals in employment, regular large-scale employer surveys, census data and neighbourhood statistics, and broader international surveys.

Emerging research themes

Key themes explored in research studies to date have included:

- understanding the factors influencing outcomes for young people, and how these factors intersect, in order to identify risk factors and groups to target for support;
- tracking young people over time to understand how pathways from school to work develop, in order to categorise types of pathways including problematic trajectories; and
- (less commonly) exploring the impact of specific types of support, such as careers education at different stages in the school-to-work transition, on outcomes.

Looking forwards

There are three different avenues for further research into the school to work transition: harnessing existing data sources, including revisiting older data, linking datasets together to extend the time period that can be tracked or the variables that can be analysed, and waiting for new data to come on stream; overlaying management information onto existing data sources; and adding new bespoke questions/sections to existing surveys with a planned roll-out.

Key areas for investigation could include:

- exploring the linkages between attitudes and aspirations and outcomes;
- measuring the length of transitions;
- exploring the quality of work outcomes;
- understanding the influence of parents;
- understanding potential inequalities in access to education;
- understanding educational choices;

- examining problematic trajectories;
- exploring the impact of the changes in the education landscape; and
- understanding the impact of careers and employability-based interventions.

It is recommended that further work in this area should:

1. Prioritise additional analysis of LSYPE 1 (Next Steps), as this has a large sample, tracks individuals across the key transition period, is readily accessible and includes the most appropriate variables for the Careers & Enterprise Company.
2. Track the development and outcomes of the MCS and LSYPE (Our Future) datasets, as these two longitudinal data sources look to provide an update on the transitions of young people set against the current context, and will provide data on both transitions in the coming sweeps and as the cohorts age.
3. Explore the potential to add questions to key longitudinal studies, most notably Understanding Society, to focus on the impact of specific school- and college-based careers and employer interventions on outcomes.

1 Introduction

The **Careers & Enterprise Company** commissioned the Institute for Employment Studies to identify and scope longitudinal data sources that potentially capture part or all of the school-to-work transitions of young people in order to help it with its work. There are a range of large-scale data sources that provide evidence and insights along the continuum from school to work (and, for some, through further and higher education). This paper identifies and scopes these to highlight which have potential to support the work of the Careers & Enterprise Company and other stakeholders, and identifies the capabilities and also limitations of these sources. The paper also identifies and provides briefings on a range of research studies that have utilised these sources to explore how longitudinal data are used in practice to increase the knowledge base on the transitions of young people and to identify potential avenues for enquiry that are currently under-researched.

1.1 Approach

1.1.1 Scoping data sources

Identifying potential data sources

The research involved a desk-based scoping exercise to identify large-scale data sources that have the potential to track individuals over time or to compare cohorts over time. These sources could include information about compulsory education, further education, higher education and employment which could be used to investigate: factors that influence an individual's entry into the labour market; their employment outcomes such as role or salary; and their route into employment such as an apprenticeship. A key focus for the data-scoping was longitudinal data with young people which recorded transitions from compulsory education to employment, or further training or study.

An important resource used to identify data sources was the UK Data Service which hosts the largest collection of social, economic and population data resources, and provides access to these data either online or via their secure datalab. Other resources explored included government department websites via gov.uk (Department for Education, Department for Business, Energy and Industrial Strategy, and Data.gov.uk), the Administrative Data Research Network (ADRN¹), the Office for National Statistics, and the

¹ The ADRN was preceded by the Administration Data Liaison Service (ADLS) which was funded by

Centre for Longitudinal Studies. Additional datasets were identified through two key papers (literature reviews²³), discussion with the Careers & Enterprise Company (drawing upon their ongoing work), previous research undertaken by the Institute for Employment Studies, and the literature search element of this study.

A shortlist of data sources was developed. For each dataset information was gathered on:

- The level of data collection – whether individual, household or institution (eg school).
- Data access – whether open or restricted (with eligibility criteria), free or involving a fee.
- Who commissioned the study and owns (or holds) the data.
- When the data are collected and frequency of collection (whether one-off or regular).
- How data are captured and any planned developments.
- Geographical coverage and population covered, particularly the age groups included.
- The topics and themes covered of relevance to the Careers & Enterprise Company.
- Limitations of the data source particularly in terms of tracking educational journey, career progression and outcomes.
- Potential for linkage with other datasets.

Critical assessment

The data sources were then critically assessed in terms of their potential to support the work of the Careers & Enterprise Company. They were particularly assessed in terms of their coverage of the target population for school/college-based interventions and guidance, and in terms of following this group into the labour market. Datasets were assessed against a set of criteria and then given a rating of green, amber or red. Green data sources – those deemed to be the most relevant and useful – were then investigated further by drawing on user guides and technical reports to detail key fields and variables of interest.

The criteria considered in the assessment included:

- Time period – recent datasets were considered to be more relevant as changes in education policy and the labour market create significant differences in the contextual

Economic and Social Research Council to support administrative data-based research in the UK. The ADLS archive is still accessible. <http://www.adls.ac.uk/>

² Department for Business, Innovation and Skills. 2014. Youth transitions to and within the labour market: A literature review. BIS Research Paper Number 255a, Department for Business, Innovation and Skills

³ Department for Education. 2015. Summary of longitudinal surveys. Research report DFE-RR458, Department for Education

environment. The experiences of older cohorts (eg 1970s) have less in common with those of young people today, although some value can be found in comparing the experiences of modern cohorts with previous cohorts.

- Geography – the target population for the Careers & Enterprise Company is young people in England so datasets including cohorts in England were considered more relevant than cohorts in the rest of the UK, Europe and elsewhere.
- Age – the target population for the Careers & Enterprise Company is young people aged 12 to 18 years, therefore datasets which included information regarding part or all of this age range were considered more relevant.
- Participant level – datasets which included information on individuals were considered most relevant. However, where information was also collected at the level of households and institutions, this was also considered somewhat relevant.
- Method – longitudinal studies and panel/cohort methodologies which monitor individuals over a period of time were considered highly relevant. In addition, administrative datasets which record information on entire populations, such as all school pupils or all higher education students, were also considered highly relevant.
- Data linking – datasets which include variables (unique identifier information) that could be used to link entries to other data sources, or indeed datasets where linkages have already been made, were considered more relevant. These datasets could allow for individuals to be tracked over a longer period or provide more detailed information about individual and family background and educational experiences.
- Transitions – datasets which recorded information on transitions from education/training to the labour market were considered highly relevant. For example, a longitudinal cohort study with young people that records information on destinations six months after finishing compulsory education.
- Careers advice and interventions – datasets which recorded information about careers information, advice and guidance received, or careers interventions or activities experience such as work experience, were considered highly relevant.

Rating the data sources

Once the datasets had been assessed according to the above criteria, they were then allocated into three categories: red, amber or green.

- Red: A dataset was categorised as red if it included very little information relevant to the areas of interest informing the work of the Careers & Enterprise Company. For example, the information may not be relevant to the target population; the sample might be taken from a different geographical area such as Scotland, or from a different age group such as early years. Likewise, the level of detail might be insufficient to contribute to a full understanding of transitions from full-time compulsory education to employment, or the sample may be too small to reliably generalise to a larger population.

- Amber: A dataset was categorised as amber if it included relevant information regarding particular stages involved in transitioning from full-time compulsory education to employment but it captured little or no information regarding the transitions themselves, or regarding careers advice or interventions. For example, a dataset could contain detailed information about individuals in higher education but not include information about employment or training destinations once that stage of education was completed, or not record information about individuals' experience of careers advice or activities. Additionally, an amber dataset might contain personal identifier variables which would enable the dataset to be linked to other relevant datasets so that individuals could be followed across education and career transitions through the linked datasets.
- Green: a dataset was categorised as green if it included information regarding any transitions from full-time compulsory education to employment or further study, or if it included information regarding careers information, advice and guidance or careers interventions and activities such as work experience. For example, information relevant to careers information, advice and guidance could include access to a careers advisory service, discussion with parents/guardians or others about educational or career plans, or measures of individuals' future aspirations or attitudes to careers.

This scoping process facilitated the creation of the **Data Scoping Matrix**, which acts as a tool and/or resource to provide an overview of the relevant administrative and research datasets against a standard set of criteria. Similarly, the detailed examination of the most relevant sources (those rated 'green') facilitated the development of a **Variables Matrix** which identifies the key variables of interest in each dataset to support the development of additional analysis and further research. These tools are provided as separate documents and can be accessed from the [IES website](#).

1.1.2 Literature search

The research also involved a search for articles and research reports that have utilised the longitudinal data sources identified. A range of key academic databases were used including the British Education Index, the International Bibliography of the Social Sciences, SCOPUS, and Taylor and Francis; the meta trawler Google scholar; as well as exploring the websites of data collectors and commissioners who often highlight publications drawing upon their data. A primary filter of youth or young people was used in most instances, and key search terms used in combinations were:

- school (plus secondary), school outcomes, school leaver;
- work, employment, career;
- progression, transition, school-to-work;
- careers advice, careers programme, careers education, careers intervention; and
- employer interaction, employment education.

Initial searches also included the identified longitudinal data sources (via the data scoping stage of the study), but later searches did not include a named data source in order to allow for additional sources to be captured, if relevant. A date range of 2000 to 2017 (prioritising material from 2010) was used to limit the number of sources identified and to focus on more recent research and analysis.

Key details of all identified materials were stored in an EndNote database, a flexible and searchable database designed to manage bibliographic references, which allows for the categorisation of references (eg into types of papers and categories of quality weighting) and the addition of researchers own keywords. The details recorded included: author; year; title; publication; given keywords; abstract; URL and search source.

The initial searches identified a long list of 71 papers (after checking for duplicates and date filtering). Google scholar was the most fruitful source of references followed by IBSS, BEI and Scopus. A second stage of searching was undertaken to broaden the search to include grey sources, and involved: investigation of research institute websites such as the Institute of Education, National Foundation for Educational Research, and the Education and Employers Taskforce; a review of the references of key materials sourced in the initial search; and a review of published literature reviews focused on youth transitions⁴ for relevant citations. Also, at this stage, publications provided as examples of research using the identified key data sources on the UK Data Service website or the Administrative Data Research Network were also scanned for potentially relevant materials. Additional papers were therefore added to the long list of papers. This list was then assessed for relevance in terms of key materials focused on school-to-work transitions in the UK. A final shortlist of 75 papers utilising longitudinal data were produced (see bibliography). Working together the Careers & Enterprise Company and IES identified the best 30 papers, and these were reviewed and key information was extracted in order to develop an annotated bibliography which effectively provides a map of the research undertaken to date (see separate annex).

⁴ These included: MCKOEWN, R. and MANN, A. and DAWKINS, J. 2014. Employer Engagement in Education: Literature Review. CfBT Education Trust; MANN, A. 2015. Employer engagement in education: a bibliography; MANN, A. 2014. Key issues in employer engagement in education: why it makes a difference and how to deliver at scale; MANN, A., DAWKINS, J. 2014. Employer Engagement in Education: Literature Review, CfBT Education Trust; MANN, A., KASHEFPAKDEL, E.T., REHILL, J., HUDDLESTON, P. 2016. Contemporary transitions: Young Britons reflect on life after secondary school and college; and MURRAY, S., GAYLE, V. 2012. Youth transitions. Survey Question Bank Topic Overview, 8.

2 Review of key longitudinal data sources

2.1 Introduction

There are three key categories of data sources that can track the transitions of young people:

1. True longitudinal data or panel data that track the same individuals at different points in time through repeated observations to analyse change at the individual level. These can be used to build causal models to explain outcomes; obtain evidence about determinants of development; identify critical periods for intervention; and determine development pathways.
2. Repeated cross-sectional data or cohort studies that describe a population at one point in time but can be used to compare populations at more than one time point.

Both 1 and 2 involve large-scale surveys that collect primary data directly from respondents (and/or related stakeholders such as parents and teachers). As the UK Data Service notes⁵ there is a wealth of data on education, however some sources are particularly important due to their coverage, use of standard measures, the time-span involved in tracking, or their use by the research community and in generating official figures.

3. There are also data collected by government departments and agencies for administrative purposes that allow for secondary analysis.

This last category of data has become both an important resource in the social sciences in the last few years and a focus for policy development. An enormous volume of data are now routinely collected by Government and other organisations and this 'Big Data'⁶ is recognised as a significant resource to support academic research and provide evidence bases for policy development and evaluation. Using big data also reduces the burden on organisations and individuals by reducing the need to conduct new surveys where evidence can be gathered from existing sources. A change in legislation (The Small Business, Enterprise and Employment Act, 2015) has supported the linking of administration data sources which allows for particularly powerful longitudinal data to be

⁵ <https://www.ukdataservice.ac.uk/get-data/themes/education>

⁶ Defined by ADRN as 'consisting of extremely large and/or complex datasets that may be analysed by computers to reveal patterns, trends, and associations, especially relating to human behaviour and interactions'. See: <https://adrn.ac.uk/for-the-public/talk-big-data/>

constructed. However, there are concerns about the ownership of data collected, where collection responsibilities lie and how data can be accessed and shared efficiently, securely and ethically. The ADRN provides guidance and support for linking administration data (and to survey data) including appropriate techniques to use.

2.2 Identifying data sources

The search for data sources that cover all or part of the journey from school to work, and allow for a comparison of individuals or cohorts over time, identified over 40 different datasets. These include: longitudinal surveys with young people; general population longitudinal surveys; data focused on further and higher education (covering all ages but predominantly young people); school and pupil administrative data; and linked administrative data. In addition, data of potential relevance included: surveys of individuals in employment; regular large-scale employer surveys; census data and neighbourhood statistics; and broader international surveys. These categories of data, and the specific data sources identified, are described in further detail in the sections below. In addition, key details of all the sources scoped are also provided in the research tool 'Data Scoping Matrix' which can be accessed from the [IES website](#), and further information about useful variables for the key sources (rated as 'green') were provided in a separate 'Variables Matrix' to the Careers & Enterprise Company.

2.2.1 Longitudinal surveys with young people

The search identified 14 longitudinal surveys that specifically focus on young people. These are the most useful type of data for the Careers & Enterprise Company, although do have some limitations. These tend to be large-scale single cohort studies where a sample of a defined age is recruited and then followed up at regular time intervals. They involve representative samples (drawn from a range of sources) and generally have no controlled intervention (so no prescribed treatment and control groups). These longitudinal surveys can have somewhat complex sampling methodologies (involving boost and top-up samples) which can sometimes change the population covered. Likewise, longer running surveys can involve a change in survey method over time. These can create challenges when constructing time series. Interestingly, these studies can have several names, which can make things somewhat confusing. They are also managed by different institutions (generally academic institutions), and management of the surveys can migrate to different institutions over time. Where the surveys involve older children, they tend to capture data directly from individuals, but some also involve data collection from parents and/or teachers. Some of the studies have originally been designed to monitor health and healthy development (these tend to be birth cohort studies, and can involve other forms of data collection such as physical assessments or biological samples) or have been designed to monitor early years development and schooling. They may therefore not track individuals into adolescence. Elsewhere, other studies are focused on one particular aspect of development or education so may be too narrowly focused.

It is worth noting that the Economic and Social Research Council (ESRC) has funded the Cohort and Longitudinal Studies Enhancement Resources (CLOSER) network⁷, based at University College London, to bring together the research teams to allow for research across the different studies, and share expertise in longitudinal methods and in using longitudinal data. This is both in recognition of the importance to scientific inquiry and policy development of longitudinal studies as they often provide the only means of studying the development of the individual life course; and in recognition of their expense (and thus need for long-term secure funding). This network may prove a useful resource for the Careers & Enterprise Company.

The most useful of the longitudinal data sources are noted below, and several of these have been completed relatively recently and so would allow the Careers & Enterprise Company to explore issues and experiences of cohorts whose economic, educational and policy environment are relatively similar to the current cohort of 12- to 18-year-olds.

The Longitudinal study of young people in England (LSYPE)

There have been two panels tracked over time as part of this series, and together they form the main information source for the evaluation of policies focused on young people. They aim to explore how circumstances and experiences in early life affect later outcomes, and how factors may be interlinked and also differ for groups of individuals. By undertaking two panels this allows for cohort effects (changes arising from characteristics unique to the cohort) and time of measurement effects (changes arising from broader context shifts) to be distinguished.

- The first panel was called **Next Steps**. This was an annual panel survey of young people in England. It originally had seven waves starting in 2004 when the cohort was aged 13-14 (year 9), and ended with the last wave in 2010, when the cohort were aged 21. At wave one the achieved sample was almost 16,000 (with boosts for students from ethnic minority backgrounds and from areas of high deprivation) but by wave seven this had almost halved to just fewer than 9,000. The data are still relevant, and can be compared to findings from the second panel (see below). The survey monitors personal and family characteristics, attitudes and behaviours, plans, education and employment, and (in waves five to seven) information advice and guidance. For some waves, data were also gathered from young people's parents (guardians or carers). Of specific relevance, young people were asked about their post-16 plans, their attitudes to work and their experience of information, advice and guidance. Next Steps data has already been linked with the National Pupil Database (NPD), Index of Multiple Deprivation (IMD), and School Level Data; and later waves of the survey included consent questions to enable linking to data held by the Department for Work and Pensions (DWP) and the Department for Business, Innovation and Skills (although this linked data has not yet been made available). Although this panel had been closed, the Centre for Longitudinal Studies (CLS, who took over the management of the survey and data from the Department for Education

⁷ <http://www.closer.ac.uk/>. This brings together : Hertfordshire Cohort Study; National Survey of Health and Development, National Child Development Study, British Cohort Study, Avon Longitudinal Study of Parents and Children, Southampton Women's Survey, Millennium Cohort Study, and Understanding Society.

(DfE)) developed an eighth wave to explore the outcomes of the cohort at age 25 (known as the 'Age 25 survey'). This new wave provides an important insight into the pathways to adulthood of the panel and, particularly, how their educational choices, family resources and experiences in adolescence have influenced their life chances. The questionnaire was developed in consultation with a range of stakeholders (via the collection of written consultation responses and a consultative conference) and broadened to include sections on housing, finance (including salary), health and wellbeing, identity and participation, and overall life satisfaction as well as employment (including current activity, activity history and work attitudes), and additional education and job training. The Age 25 survey also sought permissions to link to NHS, DWP, HMRC, HESA, UCAS, DfE, Ministry of Justice MOJ and Student Loans Company SLC data. The wave eight fieldwork took place in 2015/2016, gained responses from over 7,000 original panel members, and data are due to be released in 2017. [The Next Steps dataset could be used to explore in depth how and whether attitudes, aspirations and advice are linked to post-18 outcomes; and then used to identify key issues and needs, and inform selection of strategies and initiatives to support young people.](#)

- The second panel is called **Our Future** (but is also known as LSYPE2). Again this is an annual panel survey of young people in England. There will be seven waves in order to follow individuals through the final years of compulsory education (and will take account of the Rising Participation Age for compulsory education or training) and into further study, training or employment, to identify their career paths and the factors that affect these. The first wave took place in 2013 when the cohort was aged 13-14, and achieved responses from 13,000 young people. It aims to follow individuals to the age of 19/20 (in 2019). To date only wave one has been completed. The survey monitors personal and family characteristics, attitudes to school and the labour market, education and experiences at school, employment or other post-16 activities, and future plans. [This will become a more relevant data source over time as the tracked individuals move further along their educational journey and into the labour market. Thus following the data releases from each wave will allow the Careers & Enterprise Company to gain a picture of the journey of young people currently progressing through full-time compulsory education.](#)

The Youth Cohort Study (YCS) also known as Pathways

This is a cross-lagged study or cohort-sequential study as new cohorts are recruited and followed over time. It is a series of cohort studies following individuals from year 11 at age 16, for four years to age 20, with generally annual interviews/surveys (four sweeps). The series started in 1985 with cohort one covering England and Wales, and the most recent cohort (13) took place between 2007 and 2010 (and covered England only). Cohort 13 started with approximately 7,500 participants reducing to just under 5,000 by sweep 4. The study was designed to monitor behaviours and decisions of young people as they transition from compulsory education, and to identify factors that influence transitions. It captures data on personal and family characteristics, education, training and qualifications, employment, attitudes to work and further education, and careers advice and guidance. The last cohort was designed to be linked to LSYPE Next Steps (with samples taken from the same academic cohort and survey questions and approaches aligned), and the surveys were managed together by DfE (providing a combined sample

of over 13,000, as noted above). This survey is now closed but the data are still relevant as it tracks individuals from compulsory education into further or higher education and/or the labour market. It identifies pathways young people take and the points at which interventions could best be targeted. Similar to the Next Steps dataset, YCS could be used to explore in-depth how and whether attitudes, aspirations and advice are linked to post-18 outcomes which could be used to identify key issues and needs, and inform selection of strategies and initiatives to support young people. A similar study in Scotland is the Scottish Young People's Survey (SYPS).

The Millennium Cohort Study (MCS) also known as Child of the New Century

The MCS is a single cohort study and is tracking a cohort of individuals born in 2000 (over the full year), tracking them and their family circumstances from birth into adulthood. The study explores family circumstances (and oversamples children from disadvantaged backgrounds and minority ethnic families), health, education, childcare activities, attitudes and behaviour, and future plans and expectations. It aims to explore the social, economic and health situations of children born at the start of the century. Five waves of MCS data have been collected and reported on to date, and wave six is currently in progress and wave seven (when individuals are aged 17) is planned for 2018. As the most recent data available is for wave MCS5, when individuals were aged 11, this does not yet capture transitions from compulsory education (although it will capture entrance to vocational and work-based learning at Key Stage 5). However, it will become a key source of information as further waves are conducted and data are released. In addition there may also be potential to add questions focused around the key interests of the Careers & Enterprise Company in future waves.

- MCS provides an update to the 1970 **British Cohort Study** (also known as the British Births Survey, the Child Health and Education Study and Youthscan) which follows 17,000 individuals born in Great Britain in one week in 1970. It was designed to collect medical information but has broadened to capture data on physical, social and educational development, and economic circumstances. There have been ten sweeps of the BCS, and the most recent wave took place in 2016/2017 when the cohort were aged 46/47 (but data are currently available for sweeps one to eight, up to age 42). Of particular relevance, participants were asked at age 16 about attitudes to work, expectations and career preferences; and at age 21, were asked about employment and education histories since age 16 and attitudes to employment. MCS also provides an update to the even earlier **National Child Development Study** (NCDS, also known as the Perinatal Mortality Survey) which was designed to examine factors associated with stillbirth and early infancy death but then expanded to explore factors associated with human development. NCDS follows individuals born in Great Britain in one week in 1958 (currently involving nine waves, with the tenth sweep planned for 2018 when the cohort will turn 60). Both NCDS and BCS provide detailed information about health, family circumstances and educational development of young people but these data may be less relevant in isolation as education and employment opportunities have changed significantly since the studies were commissioned. Instead, their value lies as a comparator for the current MCS or to explore how and whether attitudes to work and aspirations are linked to longer-term employment and education outcomes.

- Interestingly a new birth cohort study – **Life Study** – was commissioned by the ESRC and the Medical Research Council. It aimed to follow over 80,000 families with babies born between 2014 and 2018 across the UK, and to follow the children into adult life. It began in 2011 but funding was discontinued in 2016 due to challenges in recruiting participants⁸.

Aspires and Aspires 2

A two part research project tracking a single cohort of young people in England aged 10-18. The study aimed to understand how career aspirations develop in relation to science, technology, engineering and mathematics (STEM) and what influences the likelihood of aspiring to a science-related career. The original study (Aspires) ran from 2009 to 2013 and followed individuals in years 6, 8 and 9. The second part (Aspires 2) began in 2014 and will run until 2018. It will follow the same cohort from the original study (including original respondents and others recruited from the same population group), and survey them when they are in years 11 and 13 (up to the age of 18). This longitudinal survey explores attitudes, educational performance and choices – particularly around science and science careers, and the impact of family, school aspirations and guidance. Data are gathered from young people and for a small sub-sample of individuals data are also gathered from their parents. Aspires started with a sample of over 9,000 students; and Aspires 2 with a sample of over 13,000 students. [Given its focus on career aspirations and outcomes, potential impact of interventions, and as it is a current data source it has relevance to the Careers & Enterprise Company \(despite its focus on STEM\).](#)

The Effective Pre-School, Primary and Secondary Education Project (EPPSE)

This is a single cohort longitudinal study tracking young people in England from age three to six months after year 11 (age 16). It ran from 1997 (with a starting sample of just over 3,000 children) until 2013, and gathered data from the young people and their parents and teachers (plus tests and national assessment scores). The study aims to understand how early experiences shape success in schooling and later life, and so explores influences from pre-school through to secondary school including parents, environment and schooling upon development, disposition, progress, educational outcomes and post-16 destinations. It also explores sources of advice and guidance for post-16 choices, future learning plans, and career aspirations. [This dataset is of relevance as it captures detailed information on educational progress, support and future aspirations. It does not capture longer-term outcomes but could be linked to datasets that capture further and higher learning and labour market outcomes. Indeed the University of Oxford is undertaking data matching \(funded by the Sutton Trust\) to explore outcomes at age 18 including academic attainment, post-compulsory participation in education, and aspirations. This should be available in 2018⁹.](#) A related study covers Northern Ireland

⁸ <http://www.esrc.ac.uk/research/our-research/life-study/>

⁹ The project is entitled: How disadvantage shapes students' educational outcomes up to age 18 and beyond: the role of pre-school, primary and secondary schools in promoting social mobility for students in

(Effective Pre-School Provision in Northern Ireland, EPPNI), and a new study the Study of Early Education and Development (SEED) has been commissioned which will update EPPSE and will follow over 8,000 two-year-olds up to the end of Key Stage 1.

The Avon Longitudinal Study of Parents and Children (ALSPAC, also known as Children of the 90s)

A single cohort longitudinal study monitoring health and school-based education outcomes for a cohort in Bristol from birth to the present. The study began in 1991 with a sample of almost 15,000 births. It focuses on environmental, social, psychological, biological and genetic influences on development; but also captures information about family background, education outcomes and attitudes and behaviours in school, and employment details and aspirations. It gathers information from the cohort but also their parents/carers, grandparents and teachers, and involves health assessments and biological samples. ALSPAC-G2 is a second stage of the research and follows the children of the original cohort to provide an intergenerational picture. ALSPAC-G2 is currently funded until 2019. [ALSPAC is of relevance as it has a large sample and, although focused initially on one geographical area and primarily health-related, follows a group of individuals into adulthood \(currently aged between 25 and 27\) so will capture transitions and can be linked to other administrative data that will provide more information on further learning and labour market activities. The PEARL project \(Project to Enhance ALSPAC through Record Linkage\) is currently working on linking the dataset with others.](#)

- A related study is the **European Longitudinal Study of Pregnancy and Childhood (ELSPAC)** which monitors the health- and school-based education outcomes of over 40,000 children in ten countries (including Greece, Spain, Czech Republic, Russia, Slovakia, Ukraine, Croatia, Estonia; as well as Britain and the Isle of Man). The British survey is ALSPAC. Each country holds its own data, and currently there is no central ELSPAC dataset. Another related study is Born in Bradford (BiB), which follows cohorts of children born in a Bradford hospital between 2007 and 2010, in order to explore causes for childhood illnesses and mental and social development. The study is ongoing but the individuals are currently too young to track transitions from education.

Other studies

Other studies of perhaps less relevance to the Careers & Enterprise Company include:

- The **Families and Children Study (FACS)** also known as the Survey of Low Income Families) which is a now closed, longitudinal study that tracked the same families over an eight to ten year period – from 1999 to 2009. This study oversampled low income families and had a focus on income and/or benefits received, health and educational outcomes for children, and use of local services. It aimed to evaluate activities helping people into work and improving living standards. The main survey also captured

details on parents' aspirations for their children. Children aged 10 to 15 participated in later waves of the survey and were asked about attitudes to school and schoolwork. The starting sample involved almost 5,000 individuals. [This study has limited relevance as it didn't specifically map the transition from compulsory schooling to work or further study, but does have education and employment information as well as attitudinal data.](#)

- **The Citizenship Educational Longitudinal Study (CELS**, also incorporates the Citizens in Transition: Civic engagement among young people CiT survey) is an ongoing longitudinal study exploring the impact of citizenship education on a cohort of over 11,000 young people in England entering secondary school in 2002. The study began in 2001, and has tracked the cohort from age 11, in years 7, 9, 11 and 13. There is also a cross-sectional survey with 2,500 students in each wave, and this was used to top up the longitudinal survey in 2008. The main longitudinal element involves surveys of young people, their teachers and school leaders (as well as visits to schools providing longitudinal case studies), and focuses on experiences and views about citizenship. [It has suffered from major attrition over the years \(particularly between waves three and four\) and study has limited relevance but provides an opportunity to explore some basic education/ employment outcomes with regards to interests and activities, such as volunteering and political activism, as well as young people's perceptions as to whether volunteering will help make them more employable.](#)
- **The Life Opportunities Study (LOS)** was a large-scale longitudinal household survey (involving over 48,000 cases) following adults aged 16 and over to track transitions between education, into and out of work; barriers experienced; accessibility issues; and experience of discrimination. Its primary purpose was to explore the social barriers for disabled individuals, compare experiences of individuals with and without a disability, and to explore factors associated with transitions. There were three waves between 2009 and 2014. The survey collected demographic information about household members and also information about their employment, training and education, and collected data on barriers to employment or learning and support to find work. [This survey has some limited relevance as it will have captured some younger people so could be used to explore post-sixteen choices and also transitions after age 18, and it facilitates in-depth exploration of the career experiences of people with disabilities.](#)
- **Young People's Social Attitudes Survey (YPSA)** is part of the British Social Attitudes survey (BSA, see below). A sub-sample of approximately 500 young people aged 12 to 19 years living in the households of BSA respondents were surveyed. The survey was carried out in 1994, 1998 and 2003 (with a new sample collected at each wave), and young people were asked about their social and political attitudes, including attitudes to work and future plans/aspirations, in order to compare their views with adult BSA respondents. Some basic demographic/personal characteristics data were also collected. The most recent survey in 2003 also captured details of problems at school; qualifications gained and educational institutions attended; views about education and work (including perceived gender differences relating to work and educational performance/interests, perceptions of important factors in being successful in life); employment status and experiences of volunteering/charity work; plans for moving out of parents' home; and main ambitions. [It is of some limited](#)

relevance as, although it does not follow a cohort of young people and doesn't capture transitions, it collects some information about attitudes to work and some future plans/aspirations and allows for comparison of different age groups. A similar survey in Northern Ireland is the Young Persons' Behaviour and Attitudes Survey (YPBAS)

- British Council **Next Generation** is a global research series commissioned by the British Council. So far the research is being undertaken in nine countries including the UK. It is a repeated cross-sectional study (not truly longitudinal) and the first UK instance occurred in 2011 (the baseline) and the next UK instance occurred in 2016, with further surveys planned. It provides a snapshot of the attitudes and experience of undergraduates aged 19-21 with regards to international opportunities and global issues. The study includes some questions around experiences of and attitudes towards studying, working, or volunteering in another country, and where they have heard about such opportunities. *It has very limited (if any) relevance as the data are not publically available, it tracks attitudes but not individuals over time, and has a narrow focus (both topic and respondents).*

It is perhaps worth noting here longitudinal studies of young people undertaken in other countries. Studies identified by DfE include: Growing Up in Scotland (GUS) and the Scottish School Leavers Survey (Scotland); Taking Boys Seriously (Northern Ireland); Growing up in Ireland (Ireland); ELFE (France); National Educational Panel Study (NEPS, Germany)¹⁰; Evaluation Through Follow-up (ETF, Sweden); Danish Longitudinal Survey of Children (DALSC, Denmark); Panel Survey of Income Dynamics (PSID), Early Childhood Longitudinal Study (ECLS), National Institute of Child Health and Human Development (NICHD, originally the Study of Early Child Care and Youth Development), National Longitudinal Study of Youth (NLSY), Fragile Families and Child Wellbeing Study (USA); Canadian National Longitudinal Survey of Children and Youth (NLSCY, Canada); Longitudinal Surveys of Australian Youth (LSAY), Growing up in Australia, and Youth in Transition (Australia); and Growing up in New Zealand (New Zealand).

2.2.2 General population longitudinal surveys

Another source of longitudinal data that can track young people through education and into the labour market are general population longitudinal studies. These are not specifically designed to capture data about young people but instead look to cover a much wider age range and often start at a defined age which is deemed to indicate adulthood. These are often household panel surveys involving hundreds of active users, and can address different topics in different waves. They are useful as they can provide information on transitions. As with the longitudinal surveys specifically covering young people, they can have somewhat complex sampling methodologies (involving boost and top-up samples) and longer running surveys can involve a change in survey method which can create challenges for analysis.

¹⁰ NEPS aims to explore how education is acquired and education decisions made, and the impacts these have on individuals' trajectories. It will follow individuals from birth into higher education and the labour market and adult/lifelong learning. It has six cohorts (of different ages) recruited between 2009 and 2012, which it follows over time.

A key source is the **British Household Panel Survey (BHPS)** and **Understanding Society**. These are essentially one longitudinal survey that aims to understand social and economic change at the individual and household level in Britain. BHPS began in 1991, and involved a panel of 5,000 households (capturing data from approximately 10,000 individuals) surveyed over 18 waves, and with top-up sample added in 1997 and 1999. In 2009 (at wave 19) BHPS became part of a larger study 'Understanding Society' (also known as the UK Household Longitudinal Study). Understanding Society is much larger and involves over 40,000 households, and captures data from each adult (aged 16 or over) in the household. To date six waves have been undertaken of the Understanding Society survey, with data available later in 2016. From wave four of BHPS, household members aged 11 to 15 were also surveyed (this is known as the British Youth Panel). The survey collects detailed information about educational background and attainments, recent education and training, current employment and earnings, employment changes, values and opinions, aspirations (including aspirations for their children), personal characteristics, household finances and neighbourhood characteristics. It also gathers data on health, political beliefs, wellbeing and social networks. The British Youth Panel topics include: computer and technology use; family support; sibling relationships; feelings about areas of life; the Strengths and Difficulties Questionnaire (SDQ); and aspirations. Individuals are asked about their educational aspirations, their first job after completing education, their plans for the future, and careers advice received. [This ongoing survey dataset has relevance for the Careers & Enterprise Company, both British Youth Panel and the main survey, as it could be used to explore in-depth how and whether attitudes, aspirations and advice are linked to post-18 outcomes which could be used to identify key issues and needs, and inform the selection of strategies and initiatives to support young people. For some questions, it may also be possible to compare Understanding Society data with historical findings from the BHPS data where questions occurred in both datasets.](#)

Of less relevance are:

- **The Opinions and Lifestyle Survey (OPN)**, also known as the ONS Opinions or Omnibus Survey) which is a frequent, short survey undertaken monthly eight times a year with a random sample of approximately 1,000 individuals selected for each wave. As individuals are not tracked it is not a true longitudinal study but a (repeated) cross-sectional study. It began in 1990 as the General Lifestyle Survey and explores attitudes and experiences among adults aged 16 and over in Great Britain (except Isles of Scilly and the Scottish highlands and islands). Some core demographic information is collected at each wave (region, age, age when left education, highest level of qualification, ethnicity, social class, health, work status and some employment details) but topics change with each survey wave. [Topics vary widely but it is potentially of interest as institutions such as the Careers & Enterprise Company can commission modules so could be used to ask adult populations about attitudes to or experience of careers guidance/information and the perceived impact. No real personal identifying information is recorded so the data cannot be linked to other national data sources.](#)
- **British Social Attitudes survey BSA** is a repeated cross-sectional study which began in 1983. It has an annual survey with a new sample of approximately 3,000

adults aged 18 and over selected for each wave, the sample is selected to be representative of the Great British population. It monitors social and political attitudes among adults in Great Britain (a similar survey in Northern Ireland is the Northern Ireland Social Attitudes Survey). The survey comprises a set of core questions collecting demographic information (gender, age, health, marital status, social class, ethnicity, age left full-time education, qualifications gained, employment status and details, and previous employment) and some key political attitude questions. [As with OPN, organisations can fund questions to be added to waves of the survey. For example in 2015, BSA included the 'work orientations' module from the International Social Survey Programme \(ISSP\) covering attitudes to work, work-life balance and experiences of work.](#)

2.2.3 Data focused on further and higher education

Another category of data that could be of interest includes surveys and administrative datasets that capture movement into and out of further or higher education. These sources do not gather data from school-aged individuals (and thus cannot capture detailed information about school experiences and activities and link these to outcomes) but can capture data on previous education and decisions about making the transition to further learning. Also, these sources can capture sufficient personal information to allow for linking to other national data sources, to provide a more detailed picture of schooling. The most useful of these further study sources are noted below.

Individualised Learner Record (ILR)

The Individualised Learner Record (ILR) collects information on learners, education programmes and outcomes/destinations in the Further Education (FE) system in England, and has done so since 2003/2004. It is a repeated cross-sectional study and represents a census of all FE learners (approximately 12,500,000 per year). It is an administrative dataset and all institutions providing state-funded further education in England are mandated to supply a standard set of data at an individual level on learning, route to the course, and outcomes/destinations after the course. Relevant information in the ILR includes: learner characteristics (gender, age, ethnicity, health, current postcode and postcode prior to enrolment); previous qualifications (including GCSE maths and English grades); funding/financial support; work experience; employment; details of the current learning activity (such as programme of learning, apprenticeship details); and outcomes (grades/qualifications achieved, employment outcomes/destinations). The record also has unique identifier information so it can be linked to other datasets, and in 2010/2011 the use of a Unique Learner Number became mandatory which enables linkages to the NPD, UCAS and HESA data (see below). [It is of relevance as it provides data on initial destinations for a subset of young people \(those who moved into FE\) and given the potential to link to individual data from earlier educational periods.](#) Related data for other UK countries include: Further Education Regulated Enrolments (Northern Ireland); Infact database (Scotland); and Lifelong Learning Wales Record (LLWR, Wales).

HESA data

Data collected by the Higher Education Statistics Agency (HESA). These include administrative data and surveys.

- The **HESA Student Record** has been collected annually since 1994/1995 (and has been published digitally from 2007/2008). It is an administrative dataset and all institutions providing publically funded higher education are mandated to supply a standard set of data at individual student level. Thus the student record data are highly individualised, capturing demographic data and educational pathways. Relevant topics include: course and institution information (including apprenticeships, and sandwich courses); learner employment status; experience of work placement; learner outcomes (qualifications awarded). Demographic information is also captured including: age; gender; ethnicity; disability; level of parental education; socio-economic classification; and whether a care leaver/looked after status. [It provides a good insight into how learners are engaging with employers alongside their higher education \(HE\) studies, and can be linked with the Destinations \(DLHE\) survey data \(see below\) to explore the impacts of this engagement on employment outcomes.](#)
- **HESA Destination of Leavers from Higher Education (DLHE)** survey has been undertaken annually since 1994/1995. It was previously known as the 'First Destinations Supplement' before 2002/2003. The DLHE record is collected from successful leavers six months after they have finished their studies and provides first phase information about patterns of employment and further study (it is therefore sometimes referred to as the initial DLHE). Data are collected by the higher education provider via a survey, which is centrally defined by HESA. Data for the graduating cohort is usually available in the summer of the following year (eg those graduating in 2016/2017 will have data available in June 2018). DLHE is effectively a census survey of leavers from publicly funded Higher Education Institutions (HEIs) (plus the University of Buckingham) in the UK, including full- and part-time students and all levels of HE study. Over time the population covered has expanded and now includes UK, EU and international students. The survey achieves a high response rate of 70 to 80 per cent (although the international student response rate is much lower and so many published outputs focus on UK and EU students only). [Relevant topics include: activity and detailed information about the most important activity on the census date; attitudes towards how the HE course prepared the leaver for work, business or further study; reasons for taking up employment; and perceived value of the HE experience/qualification. Much of the data are also linked to the HESA Student Record \(see above\) and this allows for analysis of destinations by students' attributes.](#)
- The **HESA Destinations of Leavers from Higher Education Longitudinal dataset** (L DLHE) is the second part of DLHE, outlined above. This second part of the survey explores the destinations of leavers up to three and a half years after they have left their HE provider. The two stage approach therefore provides a longitudinal insight into employment and study patterns, and captures details of activities on a census date (usually November) and also satisfaction with career to date. It is a sample survey of those responding to the initial or early DLHE survey. Data has been collected from graduating cohorts every two years (rather than for every graduating cohort). The first cohort surveyed graduated in 2002/2003, and data are currently

being collected from the 2012/2013 cohort (and the most recent data available are for those who graduated in 2010/2011). The survey is administered centrally to minimise the burden on providers, and individuals are contacted by email, phone or post.

Various relevant topics are covered including: details of employment and employment history since graduating; attitudes towards employment and career satisfaction (including whether using skills gained from HE); importance of various factors in successfully gaining employment; any additional study taken since graduating and qualifications gained; and attitudes towards HE course.

Higher Education destinations data will continue to be collected until the graduating cohort of 2016/2017 - with the last surveys taking place in April 2017 and January 2018 (with data published in June 2018). HESA is undertaking a transformation programme 'Data Futures' to support a more modern and efficient approach to collect and deliver data, and this involves a new model for the DLHE (both the initial and longitudinal surveys, see below). The new survey has been labelled as NewDLHE, and this will cover those graduating from 2017/2018 onwards with surveys in December 2018, and then March, June and September 2019. The NewDLHE will cover the same population as DLHE and will be a census of all graduates, but will be administered centrally by a survey contractor and will explore destinations 15 months after graduating. With changes to NewDLHE there are plans to link this to salary data from the LEO dataset (see below), and to explore other data linkage opportunities. It is hoped that the first LEO data linked into the NewDLHE will be available in June 2020.

UCAS application and acceptance data

The University and Colleges Admissions Service (UCAS) collects data from each annual cycle of university and college applicants to full-time undergraduate course to higher education providers in the UK. The UCAS dataset has only limited coverage of applications to part-time courses or to postgraduate courses. There are around 700,000 applicants each year. The data contains mostly demographic (age; previous school type; domicile; ethnicity; gender; and social class) and application and offer information (individuals can make up to five choices of course, or six choices up to 2008). The data held by UCAS provides a huge potential to understand the trajectories of those entering HE but only some data are made publically available. Data on applications to HE courses between 2007 and 2015 are now available through the Administrative Data Research Network. Instead, UCAS offers data services for 'specialised analysis and data needs', for which a fee will be charged. This imposes limitations on the potential usefulness of these data.

- An example of paid for service is **Strobe**, a new service offered by UCAS. It is a data linking service whereby organisations with details of the population of interest can provide lists of individuals to UCAS and UCAS will provide aggregated information for this population about the numbers applying to university, offers received, and places taken up. The key advantage of STROBE is that it allows tracking of specific individuals through the university application process, although results are presented in aggregate rather than at an individual level. The service costs a fee per individual tracked/matched, or a fixed fee for very large orders. The cost of access can therefore be a major limitation to its use.

Futuretrack was a single cohort longitudinal study which ran from 2005 to 2013 and aimed to explore the link between HE, career decision-making, and labour market opportunities. It was jointly commissioned by HECSU and UCAS, and undertaken by Warwick University's Institute for Employment Research. These data were collected by tracking the 2005/2006 cohort of HE applicants (a starting sample of over 130,000 individuals), who were then surveyed four times in the six years which followed. It consists of both quantitative and qualitative data. A range of relevant topics were covered, with each wave taking a slightly different focus as individuals moved through and out of higher education. Wave one at the time of making an application to HE captured choices (and the factors that influenced them), attitudes, and demographic information, and information about secondary education. This wave also captured data on career implications of post-16 exam subject choices; relationship between course and employment options; classroom career and life planning; HE alternatives; careers guidance; career opportunities from employers; and involvement in careers fairs. Subsequent waves covered attitudes towards (and reflections on) the HE course; perceived career prospects; engagement in voluntary or paid work alongside studies; experience of careers and employment services whilst in HE; perceived competency; labour market knowledge; interaction with employers; job search activities; goals and plans; and HE outcomes. [Although this covers a narrow population \(those interested in HE\) and does not capture school-based careers and employer interventions, it has relevance as it captures a great deal of data about HE-based careers interventions and employer engagement, and the impact this has on outcomes.](#)

2.2.4 School and pupil administrative data

A further category of potentially useful data is sources of administrative data focused on school-aged individuals. The key source here is really the **National Pupil Database (NPD)**.

National Pupil Database

This is an administrative database containing detailed information about all pupils in schools and colleges in England. Similar data are available for Northern Ireland (Schools Census), Scotland (Pupil Census) and Wales (Schools Census). The NPD consists of several data sources which are collected separately and then integrated into the overall dataset. It was developed to provide evidence for the education sector and to support accountability and school improvement, and is the source for a wide range of analysis and statistics including the DfE's Statistical First Releases on National Curriculum Assessment and GCSE attainment by pupil characteristics. It mainly covers the state-maintained sector but has some limited data on non-maintained provision and independent schools. Data are collected directly from schools/education providers. The data captured covers education and attainment at different phases, pupil characteristics (including gender; ethnicity; first language; eligibility for free school meals; awarding of bursary funding; whether SEN; and absence and exclusions) and school-level information. It draws data from a number of sources, including the Pupil Level Annual School Census (PLASC, now known as the School Census), covering pupils aged 2 to 19 plus and Key Stages' 1 to 5

results. Data has been collected in the current format since 2002. It does not capture destinations data per se but the power of NPD is that it can be linked to other national level data in order to track outcomes at an individual level. It can be linked to Individualised Learner Record data and HESA student data and destinations data using the anonymised Pupil Matching Reference (aPMR) to track progression and outcomes. Indeed, in 2016, work was undertaken to improve the destination measures at Key Stage 5 to include additional data on employment. NPD can also be linked to UCAS data to take account of deferred HE offers, and to the National Client Caseload Information System (NCCIS) which records the activity of students, including employment, training and NEET (not in education, employment or training) status.

Other administrative data of less relevance include:

- **School Performance Data.** These are a set of aggregated tables showing the attainment and progress at Key Stage 2, Key Stage 4 and at ages 16 to 18, and for those aged between 16 and 18 (from 2016) destinations data are available. Data are available from 1991/1992 onwards. Data are drawn from various sources including schools, local authorities and qualification awarding bodies. Tables can be shown for individual school/colleges, local authorities, or for England as a whole. *This has little relevance as data are not available at the individual pupil level. Instead, school or college is the smallest data unit. As this is a set of tables, the degree of manipulation/interrogation permitted is very limited.* Similar data are available of the other UK countries: Annual Examination Results (AER, Northern Ireland), Curriculum for Excellence Levels (Scotland), My Local School (Wales).
- **Local Authority Interactive Tool (LAIT)** is an interactive Excel spreadsheet tool containing linked administrative data regarding services and outcomes for young people aged up to 19 years, living in England, available by local authority and region. This includes information regarding health, educational attainment, engagement with children's services and destinations at 19. Data availability varies, but some variables include data from 2007 onwards. Data sources include: Local Authorities (LAs); DfE; OFSTED; and the Department of Health. It can be used to compare numbers and some basic percentages for a selected local authority and other local authorities (LAs), at a regional level, and statistically similar LAs. *This has little relevance as data are not available at individual pupil level and the degree of interrogation permitted is limited. However, it provides groupings of 'statistically similar' local authorities for comparisons. These could be used to compare outcomes between local authorities, to identify areas where careers interventions may be particularly beneficial or to identifying comparator groups for testing careers interventions.*

2.2.5 Linked administrative data

A further nuanced category is that of linked administrative data. This is a relatively new development for social research but is important as it allows for different datasets – each containing information about a specific part of an individual's journey from full-time compulsory education to employment (and through further or higher education or training, if relevant) – to be joined and thus fully map transitions from school to work.

Longitudinal Education Outcomes

The key data source here is the **Longitudinal Education Outcomes** (LEO) project which was launched in 2015. It has resulted in an experimental dataset using matched administrative data from different government departments (DfE, HMRC and DWP) to follow individuals through their education and into the labour market. It reflects the policy direction of improving data to support student decision-making and academic research on the impact of educational choices. It will be used to inform the TEF (Teaching Excellence Framework), a new performance measure in the higher education sector. The dataset is still in development and Government are engaging with the sector to understand the data and how best to use it. By late 2017, Government plans to have established a regular cycle of publications drawn from the LEO data. LEO comprises experimental datasets exploring employment and earnings of graduates (with data matched for those completing their higher education in 1995 or later); and employment and education outcomes of young people after Key Stage 5. To date, published work using LEO has tracked a cohort of UK-domiciled first degree higher education students who graduated from English HEIs in 2003/2004 (and graduates from each year afterwards) with outcomes assessed at 1, 3, 5 and 10 years after graduation. It has also tracked a cohort of 16-18-year-olds who were entered for A-levels (or equivalent level 3 qualifications) during the 2012/2013 year and were reported in school and college performance tables; following them one year after completing Key Stage 5 when the majority were aged 19. Relevant areas available in LEO datasets include: personal characteristics (age, gender, ethnic group, household income, eligibility for free school meals, special educational needs); education (schools/colleges/universities attended, courses taken and qualifications achieved); any careers advice and training offered by the Government; economic activity; employment and income; and benefits claimed. [In future, it may be possible to access the LEO dataset or order bespoke analyses. However, as the dataset's content and use are still in the process of being developed, it is recommended that the Careers & Enterprise Company follow developments regarding the LEO dataset in order to identify research opportunities and relevant information.](#)

2.2.6 Others

There are a range of other miscellaneous data sources which may provide some insights into the transitions of young people. These include surveys of individuals in employment; regular large-scale employer surveys; census data and neighbourhood statistics; and broader international surveys. These tend to be very large surveys which capture a range of information that does not specifically explore education, progress and outcomes. They can be cross-sectional rather than longitudinal (although work has been undertaken to develop tracking capacity) and may not capture or present data at the individual person level. In general, these other sources have only limited use in tracking school-to-work transitions of young people at an individual level.

- **Labour Force Survey** (LFS) is a survey of individuals and households in the UK and is owned by the Office for National Statistics (ONS). It is conducted quarterly with a rolling panel of approximately 41,000 households, and each household is surveyed for

five successive waves before they are replaced. It provides weighted estimates for the entire population, aged 16 years and over. It covers a range of topics including education, employment and training and captures details, such as occupation and hours of work, along with personal and household characteristics. It is possible to identify education leavers (such as new graduates, those obtaining an undergraduate qualification within the previous 12 months) and explore their backgrounds and employment outcomes.

- **Annual Population Survey (APS)** is an annualised version of the LFS created by combining four quarters of LFS data into one annual dataset. Datasets are produced quarterly covering the most recent four quarters. However the datasets are purely cross-sectional and each individual is only represented in one quarter within each APS dataset. Around 40 per cent of the individuals in each LFS quarter are included in the APS dataset. As with the main LFS, the data are not longitudinal, only cross-sectional, and there are very few and limited retrospective questions ie circumstances one year ago. Therefore, the potential to investigate the education to work transition is very limited. However, the large sample size means that the labour market circumstance of individuals by single year of age (eg 16-year-olds, 17-year-olds etc) can be investigated.
- **LFS Longitudinal Datasets** add a longitudinal dimension to the Labour Force Survey. Respondents in the LFS are interviewed five times at quarterly intervals, and the longitudinal datasets link responses for the same individuals between the different quarters. This allows an investigation of changes over time for individuals. There are two datasets – a 2Q dataset which links responses between two successive quarters, and the 5Q dataset which links responses across all 5 quarters. The longitudinal element allows an examination of the sizes and characteristics of the flows of young people from education and employment/unemployment/inactivity between the different quarters. These data source do not provide any historical information about pre-16 status or activities and the sample size of young people in transition may be small and so allows for only limited analysis.
- **Annual Survey of Hours and Earnings (ASHE, formerly known as the New Earnings Survey)** is a longitudinal study tracking pay, hours worked and pensions for a sample of adults aged 16 and older, who are paid through PAYE in the UK since the 1970s. Data are collected from the employer about the employee, and information includes details of employment, pay/financial benefits, and some demographic variables (such as age and gender). Within the dataset, it is possible to track an individual across job roles but not necessarily the initial transition from education to work (unless an apprentice), and the dataset has no information about individuals' qualifications or education.
- The **Employer Perspectives Survey** is a large-scale (repeated) cross-sectional study of employing establishments across private, public and non-profit sectors. It has been undertaken every two years – with surveys in 2010, 2012, 2014 and 2016. It has a sample size of approximately 15,000 UK establishments (with two or more individuals working in them) and is representative of all UK establishments. The survey collects employer views on methods of recruitment, skills initiatives and training currently on offer in the UK, and decisions to use them, or not. The survey findings are designed to inform skills supply policies, and to help ensure these meet the needs of business.

Pertinently, EPS is concerned with work experience; apprenticeships; employer skills sourcing; employer interaction with training providers; and recruitment of young people and education leavers. It was commissioned and managed by the UK Commission for Employment and Skills (UKCES, which has now been closed). However, responsibility for EPS has been moved to DfE¹¹. A related study is the **Employer Skills Survey (ESS)**. This is a slightly larger survey involving approximately 70,000 UK establishments (including sole traders) and is conducted every two years, in alternate years to the EPS. There have been surveys in 2007, 2009, 2011, 2013 and 2015. This focuses on employers' recruitment and training practices and their perceived skills deficits. The 2017 survey is currently in the field, and results will be available in summer 2018.

■ UK Population Census data

- The main data source here is the **UK Census data** which covers the entire UK population regardless of age. This is collected every 10 years (since 1801), with the most recent taking place on 27 March 2011. Its purpose is to collect population and other statistics to support the planning and allocation of resources. The census is the most complete source of information about the population. As the same questions are asked of all households at the same point in time, it is particularly useful for making comparisons across different parts of the country. However as the census is only conducted every ten years it is a relatively coarse longitudinal measure. General census data are provided at aggregate level but access can be provided under secure conditions to a random 10 per cent sample of individual and household level data for 1991, 2001 and 2011 records (microdata samples sometimes referred to as Sample of Anonymised Records or SARS). However, these samples cannot be combined to create longitudinal records.
- Another set of data available are the **Neighbourhood statistics**. The Neighbourhood Statistics Service (NeSS) was established in 2001 by the UK's Office for National Statistics (ONS) and the Neighbourhood Renewal Unit (NRU). Neighbourhood Statistics contains over 300 datasets drawn from the 2001 and 2011 Census data. These cover: health; housing; education (including highest level of education); economic activity/employment status; deprivation; age; and ethnicity. Data for England and Wales are provided at neighbourhood level for a range of administrative areas such as local authority. Data for Scotland is available from Scottish Neighbourhood Statistics (SNS). Data for Northern Ireland is available from the Northern Ireland Neighbourhood Information Service (NINIS).
- A further related data source is the **ONS Longitudinal Study** which provides a complete set of census records for individuals, linked between successive censuses (1971 to 2011), together with data for various events. It relates to a sample of the population of England and Wales (born on a specified date) and it now includes records for over 950,000 study members (representing one per cent of the population). This dataset includes demographic information and also educational qualifications, economic activity and occupation. It has restricted access and so can

¹¹ See for example <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2016-07-21/HCWS121/>

only be analysed at the ONS Virtual Microdata Laboratory. A similar study in Scotland is the Scottish Longitudinal Study (SLS) and a longitudinal study in Northern Ireland links Census data with health records – the Northern Ireland Longitudinal Study (NILS).

- Data collated and published by **Eurostat**. Eurostat is the statistical office of the European Union which collects data and publishes statistics at a European level to enable comparisons between countries and regions. Data are collated from national administrative data and surveys. Eurostat's role is to consolidate the data and ensure they are comparable, using harmonised methodologies according to the European statistics Code of Practice. These data are then made available via an online database. Statistics are available for a wide range of themes including economy and finance; population and social conditions (which includes education and training, labour market and youth); industry trade and services; and several other areas. Labour market statistics include individuals aged 15 years and above, whilst education data covers all stages of education from early years to higher education and captures educational outcomes; information on transitions from education to work; and information about participation in volunteering activities. Eurostat holds some quite detailed information on employment and education and can be used to identify trends at country level for the UK and other European countries. However, it does not hold individual level data and so cannot be used to track individuals over time through transitions. Another repository of European data is provided by the European Spatial Planning Observation Network (**ESPON**). This also provides regional and local information within participating countries.
- Data collected and published by the **Organisation for Economic Cooperation and Development (OECD)**. OECD collects national level data submitted from national surveys and administrative data to create datasets on a range of topics. This allows for results to be compared between countries. OECD datasets include those focused on education and employment and provide a number of key indicators (typically at an aggregated level) so that data can easily and reliably be compared across countries, eg ISCED categories for education level. OECD Employment and Labour Market statistics and datasets cover: earnings; hours worked; job quality (risk, training, progression opportunities, autonomy, work/life balance and satisfaction); job tenure; engagement in labour market programmes; qualifications mismatch and skills use; and unemployment. OECD education statistics and datasets (Education at a Glance and UOE Education Database) cover: profiles of graduates and entrants for ISCED levels three to eight; type/mode of study; type of institution (and institution population profiles); transition from school to work for various age groups; and educational attainment by labour force status. Historical data from 1997 onwards is available for: learning outputs and destination outcomes for different generations, and proportion of youth that are NEET.

3 Use of longitudinal data sources

The search for materials – research papers and academic journal articles – identified numerous researchers and numerous studies that have utilised longitudinal data sources in order to explore school-to-work transitions. A brief review (not an exhaustive literature review) indicates several emerging themes in the focus of the research:

- the role of socio-economic background in shaping outcomes (often through influencing aspirations);
- the impact of geography on outcomes;
- categorising transition pathways and the factors associated with NEET (not in education, employment or training) status and/or other unsuccessful or problematic transitions; and
- (unequal) access to careers information, advice and guidance and the impact of such interventions.

3.1 Themes

3.1.1 Factors influencing outcomes

There is a body of research that seeks to explore the impact of a wide range of individual demographic and educational factors and also family factors – including most commonly socio-economic group/status – on key measures for young people, including attitudes and aspirations as well as outcomes (including NEET status). These studies also try to understand how these factors intersect to potentially create multiple disadvantage or risk factors and poor(er) outcomes (Bynner and Parsons, 2002; Croll, 2008; Ashby and Schoon, 2010; Patrignani and Conlon, 2011; Schoon, 2012; Berrington, Roberts and Tamms, 2016; Symonds, Schoon and Salmela-Aro, 2016). Many find a relationship between background factors, and aspirations, ambitions, engagement with schoolwork and educational attainment (intermediate factors), and then to labour market outcomes. Outcomes can be measured in various ways including successfully completing education/learning; labour market status; and earnings (or even more specific outcomes such as following a science career, (Schoon, Ross and Martin, 2007)). Some then attempt to understand how those from disadvantaged socio-economic backgrounds can achieve positive outcomes or ‘beat the odds’ by identifying potential ‘protective’ factors not just ‘risk’ factors (eg Duckworth and Schoon, 2012; Schoon, 2012; Schoon and Lyons-Amos,

2017). Papers can focus only on part of this relationship (rather than attempt to model or explain the whole picture), such as background characteristics and their influence on attitudes and aspirations (Dewitt et al, 2011); or educational attainment and its influence on outcomes (Patrignani and Conlon, 2011); or ambitions and its influence on outcomes (Sabates, Harris and Staff, 2011).

There doesn't appear to be a standard set of factors that are measured in each of these studies, but they can include: age; gender; ethnicity; disability; caring status; household income; parents' education; parental worklessness; socio-economic status; living in social housing; prior educational attainment (sometimes in specific subjects such as maths); their own aspirations; parents' aspirations; self-confidence; learning achieved (level and type); school engagement; type and make-up of school population. Geography is the focus of some papers (Dickerson and McIntosh, 2010; Culliney, 2014; and Tomaszewski and Cebulla, 2014) and here researchers look to understand the role of location on aspirations, learning decisions and/or labour market outcomes (or indeed location can be found to be an influencing factor eg Schoon and Lyons-Amos, 2016). The lack of standardisation in the factors explored in the research is likely to be driven by pragmatism – what is measured across different data sources.

3.1.2 Tracking studies identifying pathways

Some of the research identified tracks transitions of young people using the regular observations (often monthly) provided by some of the longitudinal studies in order to understand the sequences and length of transitions over time from school to work (Brzinsky-fay, 2007; Quintini, Martin and Martin, 2007; Schoon and Lyons-Amos, 2016; Anders and Dorsett, 2017). These studies allow for comparisons to be made either across cohorts (at different periods in time) or across geographies, by utilising more than one longitudinal dataset or meta-datasets such as the European Community Household Survey. Comparison across time periods is helpful as it seeks to confirm the generalisability of findings across different backdrops or contexts (Duckworth and Schoon, 2012). The studies can also involve categorisations of young people and/or their transitions. The categories devised in these studies could be useful in further research.

Within this group of tracking studies are those that focus on more problematic categories of transition – particularly involving NEET status; 'churn' between states; unstable outcomes/precarious work; or worklessness – to identify characteristics and (risky) behaviours associated with individuals on unsuccessful pathways (Furlong, 2006; Bynner and Parsons, 2007; Quintini, Martin and Martin, 2007; Yates et al, 2011; Duckworth and School, 2012; Dorsett and Lucchino, 2014). Problematic pathways and NEET status are not universally accepted in the research area. It is interesting to note that Furlong (2006) argues that NEET status can be transitory and is too broad. Furlong prefers instead to focus on specific sub-categories (carers, disabled young people and those long-term unemployed) to identify barriers and design support policies. Also, Schoon and Lyons-Amos (2016) argue that creating a dichotomy between 'problematic' and 'successful' transitions is unhelpful as individuals following pathways along this continuum may then be neglected by policymakers (see also Tomaszewski and Cebulla (2014) who focus on those with ordinary pathways). Interestingly, Dorsett and Lucchino (2014) find

unsuccessful outcomes can be linked to sub-optimal decision-making at key transition points which highlights the importance of effective support for decision-making.

There are also studies which categorise pathways into academic and vocation (or vocational education and training (VET)) pathways and then contrast the impact of these on outcomes (Patrignani and Conlon, 2011; also Hayward and Hoelscher, 2011).

3.1.3 Focusing on specific transition points

Other papers focus on one particular aspect of the school-to-work transition, such as the pathway into higher education or the move through higher education and into the labour market (Hayward and Hoelscher, 2011; Broecke, 2012;), or the initial or first destination after compulsory education and the factors associated with different destinations (Lenton, 2005). The studies looking at the role of HE explore factors affecting successful pathways to HE and/or the effect of HE institution attended on labour market outcomes.

3.1.4 Impacts of specific events or activities

A few papers explored the impact of a particular intervention (Archer, Dewitt and Dillon, 2014) and could combine longitudinal survey data with other forms of data collection such as focus groups and observations. A few studies specifically focused on careers education, exploring perceptions and experiences of schools careers education (Moote and Archer, 2017); factors influencing perceived access to information and advice to support HE decisions (Purcell et al, 2008); and the impact of careers support on longer-term labour market outcomes (of HE-based careers services and work experience on outcomes after HE (Purcell et al, 2012); and of school-based careers education on earnings among those in full-time work at age 26 (Kashefpakdel and Percy, 2016)). Purcell et al (2012) found that work experience during HE was associated with securing suitable jobs after graduation (in terms of matching their skills and experience). The Kashefpakdel and Percy study found positive associations between engagement with school-based careers education and also perceptions of its helpfulness and later earnings, but the BCS data utilised meant the careers interventions measured took place some time ago, in 1986.

3.2 Methods and data sources used

A range of analysis methods are utilised in these studies. At one end are descriptive analysis and cross-tabulations (bi-variate analysis) with some statistical tests of association. However, some do involve more complex and multivariate analysis (this was noted as a gap in earlier work by IES, in that the number of research studies focusing on longer-term outcomes which move beyond purely descriptive analysis is limited). These studies with more involved methodologies include regression modelling, eg logistic regression, or difference in difference to identify the relative strength of potential explanatory factors on outcomes. They also include cluster analysis to develop typologies of young people, sequence analysis (eg optimal matching) to study trajectories and identify standard and non-standard pathways, and propensity score matching to create

comparison groups. It was rare for studies to describe using event history/survival analysis to focus on one specific event/occurrence in a trajectory.

Some papers focused on one data source as this was able to provide them with sufficient data for their investigations, these were often research papers specifically linked to or resulting from key studies, such as Aspires or Futuretrack. Others combined several data sources through linking, to enable tracking of individual journeys – either forwards into careers, adolescence and adulthood, or backwards into earlier educational or childhood experiences. Others explored multiple datasets to allow for comparison over time – most commonly researchers used either the birth cohort studies (MCS, BCS or NCDS), the large panel surveys (BHPS, ECHP and Understanding Society), or used the large-scale youth tracking studies (LYSPE and YCS). It was rare for researchers to use combinations of the birth cohort studies, youth tracking studies and panel surveys in the same paper – the exception here is the use of LSYPE and MCS. It was also rare for researchers to use administration data (such as ILR, UCAS applicant data or NPD) in isolation. Instead, these were linked to the richer data offered by commissioned surveys. Finally, there were no real examples of researchers using the LFS (or APS) in their work exploring youth transitions.

4 Areas for further enquiry

4.1 Ways to utilise longitudinal data opportunities

The longitudinal data scoped in this report present **three different avenues** for further research which may be of interest to the Careers & Enterprise Company.

1. Use existing data sources for further exploration (in isolation or linked) of key research questions. Linked data allows for individuals to be tracked backwards to understand earlier educational experiences and to be tracked forwards in order to follow an individual further into a career. This extends the range of data sources and allows for new questions to be examined with older data sources. For example, linking employment and wage data from other data sources to YCS and LSYPE (Next Steps) allows for outcomes to be tracked beyond age 19/20. Linking also results in a richer range of covariates than are available from individual data sources. This therefore makes it possible to explore a wider range of research questions. Also new data are being collected in several ongoing surveys – with younger people moving into and through the target age range for the Careers & Enterprise Company (LSYPE 2, MCS, Aspires 2), and adolescents moving further into their careers (Understanding Society) – and this will allow for earlier research to be updated and to take account of the changed economic, educational and political context such as the raised participation age, new educational structures and movement into and out of recession. Furthermore, developments with other data sources such as LFS and LEO now present new opportunities for tracking individuals (and tracking them for much longer periods than is possible with existing surveys popular with researchers).
2. Overlay new management information (MI), (eg on specific interventions) onto existing data sources to explore impact as this allows for the development of treatment and control groups. However, this will depend on whether there are any constraints on identifying individuals. If the data sources can only be analysed in anonymised form, linking to MI will not be possible,. Alternately linking may need to take place under controlled conditions (eg secure datalab) or by the data controllers.
3. Add new questions to existing surveys (with a planned roll-out) to generate new and very focused data (eg OPN).

4.2 Potential research questions/themes

Longitudinal data present opportunities to investigate a range of questions to probe into transitions from school to work: what transitions or outcomes are deemed as success; what factors are associated with successful transitions or outcomes (barriers and

facilitators); which students make the 'best' transitions; and how have patterns changed over time as the educational and labour market context changes. More specifically potential themes to explore include:

- Exploring the linkages of attitudes (and aspirations) to outcomes.
 - To what extent are attitudes and aspirations at KS4 (such as importance of a well-paid job) associated with outcomes (educational outcomes, further study choices and labour market outcomes)? How (if at all) have attitudes and aspirations changed over time at the individual level and what has influenced (or could influence) these changes?
 - What factors moderate these attitudes/aspirations eg family background (socio-economic status), school type, and awareness of careers, employment and learning opportunities? For example, do those from lower socio-economic backgrounds have poorer attitudes to school, work, and/or careers (or conversely do those from higher socio-economic groups have better attitudes)?
 - Which groups have uncertain or misaligned ambitions and what impact does this have on outcomes (and, does it matter)?
- Measuring the length of transitions.
 - How long does it take for young people to settle into a career or gain positive outcomes?
 - How does this differ by educational pathway (perhaps contrasting VET and academic pathways)? There are long-held arguments in the HE sector that the six-month destination of leavers from higher education (DLHE) survey is not long enough to capture 'full' transitions and this has led to the development of the longitudinal DLHE, and now to the NewDLHE.
 - How long young people should be tracked? When (if at all) do early school-based experiences cease to have an influence?
- Exploring the quality of labour market outcomes. This provides the opportunity to segment outcomes and develop a typology of outcomes (or revisit those used in published research). It might be interesting to explore aspects such as contract status, occupational level, pay (objective measures) and also self-reported/perceived job quality and satisfaction (subjective measures) and see how these interact. Quality could be relative, so labour market outcomes in terms of distance travelled could also be explored.
- Understanding the role of the parents. To what extent do parents influence the pathway and outcomes of young people, either:
 - indirectly through background and home environment (measured via free school meals status etc), or
 - directly through parents expectations and aspirations for their children (and how these interact with the young person's own aspirations), encouragement etc?

This has been explored before but with older cohort studies, and LSYPE Our Future will provide a good opportunity to revisit this question and compare to older findings (eg comparison with BCS data or findings drawn from BCS data).

- Understanding potential inequalities in access to education (to help with segmentation of the young population and with targeting of support).
 - Do young people have the same access to education regardless of where they live such as rural vs urban vs metropolitan areas, or coastal areas (geographical barriers)?
 - Do young people have the same access to education regardless of their family circumstances such as family income, socio-economic group, eligibility for financial or other means tested support, (social and cultural barriers)?
 - Do young people have the same access to education regardless of their individual characteristics such as ethnicity, disability (also social barriers)?
 - Does poverty act as a greater or lesser barrier to education compared to other factors, and compared to findings from earlier cohorts?
 - What have been the trends in access over time and how (and why) have they changed, and what can be extrapolated/predicted moving forwards? For example, in the past there were clear gender-based access issues with females being relatively disadvantaged, but there are indications that the pattern has reversed and now males are disadvantaged.
 - How do background factors interact to create advantage or disadvantaged groups?
- Understanding educational choices. Using cohort data to explore the type of education young people are engaged in and choices of academic and vocational pathways (and different pathways within these broad routes eg apprenticeships vs full-time FE (eg NVQ/BTEC/C&G. This will be reformed with new technical routes from 2019/2020)). Do different educational pathways and choices lead to better transitions to work?
- Examining the 'problematic' trajectories and asking is this still a useful concept.
 - Which young people have 'problematic trajectories' (eg NEET; looked after children; special educational needs; disabilities) and what factors are associated with such experiences (such as parental influences, household make-up or labour market characteristics)?
 - How has this changed over time? Are there now relatively more young people with problematic trajectories than before?
 - Some of these 'states'(eg NEET) can be transitory, so longitudinal data provides the opportunity to explore the fluidity of the NEET status (and which groups are long-term NEET).
- Exploring the impact of the changes in the education landscape.

- What is the impact on attainment, outcomes and transitions of young people with the shift to academy schools¹², and are there differences between outcomes from individual academies and academy chains?
 - Were there differential outcomes for young people from grammar schools/selective schools (compared comprehensive schools etc) and, if so, what implications will this have for the movement to introduce more grammar/selective schools?
 - The data sources scoped may provide the potential to monitor outcomes for young people from new forms of educational institutions – schools supported by independent schools; schools supported by universities; free schools; and University Technical Colleges (some of which will depend on government policy, currently ‘Creating More Good School Places’ consultation responses being assessed).
- Impact of careers and employability-based interventions on transitions at school level.
- There appears to have been little systematic recording of IAG, and what has been done is dated by the rapidly changing context, so it will be important to explore what new primary data can be collected by the Enterprise Advisers (Network) and/or school surveys, or via existing longitudinal surveys such as LSYPE, and how this can be linked to existing data sources such as NPD.
 - It would be interesting to explore the feasibility of developing a typology of interventions to be able to test which interventions work, in terms of having a positive impact on aspirations and then on actual transitions/outcomes. A potential typology could be based on who provides the support/advice; the nature of the activity; the aims of the activity; and/or the degree of targeting involved (ie whether delivered to an entire cohort or to selected individuals). It will then be possible to explore who these interventions work best for and when (in an educational journey) they work best.

4.3 Recommendations

It is therefore recommended that further work in this area:

1. prioritises additional analysis of LSYPE 1 (Next Steps, including the new Age 25 wave), as this has a large sample, tracks individuals across the key transition period, is readily accessible and includes the most appropriate variables for the Careers & Enterprise Company;
2. tracks the development and outcomes of the MCS and LSYPE (Our Future) datasets, as these two longitudinal data sources look to provide an update on the transitions of young people set against the current context, and will provide data on both transitions in the coming sweeps and the cohorts age; and

¹² There may be an issue in identifying and tracking individuals from Academy Schools in some years due to a lack of unique identifier.

3. explores the potential to add questions to key longitudinal studies, most notably Understanding Society, to focus on the impact of specific school- and college-based careers and employer interventions on outcomes.

Bibliography

Sources marked ** are included in the separate annotated bibliography. Data source used is noted in square brackets.

1. ALCOTT, B. 2017. 'Does Teacher Encouragement Influence Students' Educational Progress? A Propensity-Score Matching Analysis'. *Research in Higher Education*, 1-32. [LSYPE]
2. ANDERS, J. & DORSETT, R. 2017. 'What young English people do once they reach school-leaving age: A cross-cohort comparison for the last 30 years' . *Longitudinal and Life Course Studies*, 8, 75-103. [NCDS; BCS; YCS; LSYPE] **
3. ARCHER, L., & MOOTE, J. 2016. Year 11 students' views of careers education and work experience, ASPIRES 2 Project Spotlight Report, Department of Education and Professional Services, Kings College London [Aspires]
4. ARCHER, L., DEWITT, J. & DILLON, J. 2014. 'It didn't really change my opinion': exploring what works, what doesn't and why in a school science, technology, engineering and mathematics careers intervention'. *Research in Science & Technological Education*, 32, 35-55. [Aspires] **
5. ARTESS, J., BALL, C., FORBES, P. & HUGHES, T. 2014. *Taught postgraduate employability and employer engagement: Masters with a purpose*, Higher Education Careers Services Unit, Universities UK. [DLHE]
6. ASHBY, J. S. & SCHOON, I. 2010. 'Career success: The role of teenage career aspirations, ambition value and gender in predicting adult social status and earnings'. *Journal of Vocational Behaviour*, 77, 350-360. [BCS] **
7. ATFIELD, G & PURCELL, K (2010). Graduate Labour Market Supply and Demand: Final Year Students' Perceptions of the Skills They Have to Offer and the Skills Employers Seek. Institute for Employment Research, University of Warwick. . [Futuretrack]
8. ATFIELD, G AND PURCELL, K (2010). *Job Search Strategies and Employment Preferences of Higher Education Students*. Institute for Employment Research, University of Warwick. [Futuretrack]
9. BAKER, W., SAMMONS, P., SIRAJ-BLATCHFORD, I., SYLVA, K., MELHUIISH, E. C. & TAGGART, B. 2014. 'Aspirations, education and inequality in England: Insights from the Effective Provision of Pre-school, Primary and Secondary Education Project'. *Oxford Review of Education*, 1-18. [EPPSE]
10. BARHAM, C., WALLING, A., CLANCY, G., HICKS, S. & CONN, S. 2009. 'Young people and the labour market'. *Economic & Labour Market Review*, 3 (4), 17-29. [LFS]

-
11. BEHLE, H. 2014. 'European Mobility of United Kingdom Educated Graduates. Who Stays, Who Goes?' *Higher Education Quarterly*, 68, 288-304. [DLHE]
 12. BERRINGTON, A., ROBERTS, S. & TAMMES, P. 2016. 'Educational aspirations among UK Young Teenagers: Exploring the role of gender, class and ethnicity'. *British Educational Research Journal*, 42, 729-755. [United Kingdom Household Longitudinal Survey, UKHLS] **
 13. BRADLEY, S. & LENTON, P. 2007. 'Dropping out of post-compulsory education in the UK: an analysis of determinants and outcomes'. *Journal of Population Economics*, 20, 299-328. [YCS]
 14. BRADLEY, S. & MIGALI, G. 2014. 'The effects of the specialist schools education policy on school and post-school outcomes in England'. *Labour [Italy]*, 28, 449-465. [YCS]
 15. BRADLEY, S. & TAYLOR, J. 2004. 'Ethnicity, educational attainment and the transition from school'. *The Manchester School*, 72, 317-346. [YCS]
 16. BRATTI, M., MCKNIGHT, A., NAYLOR, R. & SMITH, J. 2004. 'Higher education outcomes, graduate employment and university performance indicators'. *Journal of the Royal Statistical Society*, 167, 475-500. [DLHE]
 17. BROECKE, S. 2012. 'University selectivity and earnings: Evidence from UK data on applications and admissions to university'. *Economics of Education Review*, 31(3), pp.96-107. [UCAS] **
 18. BROOKS, R. & YOUNGSON, P. L. 2016. 'Undergraduate work placements: an analysis of the effects on career progression'. *Studies in Higher Education*, 41, 1563-1578. [DLHE]
 19. BROWN, S., ORTIZ-NUÑEZ, A. & TAYLOR, K. 2011. 'What will I be when I grow up? An analysis of childhood expectations and career outcomes'. *Economics of Education Review*, 30, 493-506. [NCDS]
 20. BRZINSKY-FAY, C. 2007. 'Lost in transition? Labour market entry sequences of school leavers in Europe'. *European Sociological Review*, 23, 409-422. [European Household Panel, ECHP] **
 21. BYNNER, J. & PARSONS, S. 2002. 'Social exclusion and the transition from school to work: The case of young people not in education, employment, or training (NEET)'. *Journal of vocational behavior*, 60, 289-309. [British Birth Cohort Study, 1970] **
 22. CRAWFORD, C., DUCKWORTH, K., VIGNOLES, A. & WYNESS, G. 2011a. *Young people's education and labour market choices aged 16/17 to 18/19*. Research Report DFE-RR182, Department for Education. [LSYPE]
 23. CRAWFORD, C., GREAVES, E., JIN, W., SWAFFIELD, J. & VIGNOLES, A. 2011b. *The impact of the minimum wage regime on the education and labour market choices of young people: a report to the Low Pay Commission*. [LFS, BHPS, and LSYPE]

24. CROLL, P. 2008. 'Occupational choice, socio- economic status and educational attainment: a study of the occupational choices and destinations of young people in the British Household Panel Survey'. *Research papers in Education*, 23, 243-268. [BHPS] **
25. CROLL, P. 2009. 'Educational participation post-16: a longitudinal analysis of intentions and outcomes'. *British journal of educational studies*, 57, 400-416. [BHPS]
26. CULLINEY, M. 2014. 'The rural pay penalty: youth earnings and social capital in Britain'. *Journal of youth studies*, 17, 148-165. [BHPS] **
27. D'AGUIAR, S. & HARRISON, N. 2016. 'Returning from earning: UK graduates returning to postgraduate study, with particular respect to STEM subjects, gender and ethnicity'. *Journal of Education & Work*, 29, 584-613. [DLHE]
28. DEWITT, J., ARCHER, L., OSBORNE, J., DILLON, J., WILLIS, B. & WONG, B. 2011. 'High aspirations but low progression: the science aspirations–careers paradox amongst minority ethnic students'. *International Journal of Science and Mathematics Education*, 9, 243-271. [Aspires] **
29. DICKERSON, A. & MCINTOSH, S. 2010. *The impact of distance to nearest education institution on the post-compulsory education participation decision*. [LSYPE; YCS, Cohort 12] **
30. DISMORE, H., HICKS, H. & LINTERN, M. 2010. 'The destinations of Foundation degree graduates in the South West of England'. *Journal of Education and Work*, 23, 451-470. [DLHE]
31. DORSETT, R. & LUCCHINO, P. 2013. *Visualising the school-to-work transition: an analysis using optimal matching*. NIESR Discussion Paper, 414. [BHPS]
32. DORSETT, R. & LUCCHINO, P. 2014a. *Young people's labour market transitions: the role of early experiences*. NIESR Discussion Paper, 419. [BHPS]
33. DORSETT, R. & LUCCHINO, P. 2014b. 'Explaining patterns in the school-to-work transition: An analysis using optimal matching'. *Advances in Life Course Research*, 22, 1-14. [BHPS] **
34. DUCKWORTH, K. & SCHOON, I. 2012. 'Beating the odds: exploring the impact of social risk on young people's school-to-work transitions during recession in the UK'. *National Institute Economic Review*, 222, R38-R51. [BCS; LSYPE] **
35. ELIAS, P AND PURCELL (2013). *Classifying Graduate Occupations for the Knowledge Society*. Institute for Employment Research, University of Warwick. [Futuretrack]
36. FAGGIAN, A., COMUNIAN, R. & LI, Q. C. 2014. 'Inter-regional migration of human creative capital: the case of 'Bohemian graduates' '. *Geoforum*, 55, 33-42. [DLHE]
37. FURLONG, A. 2006. 'Not a very NEET solution: representing problematic labour market transitions among early school-leavers'. *Work, employment and society*, 20, 553-569. [SSLS] **

38. GAMBIN, L. & HOGARTH, T. 2016. 'Factors affecting completion of apprenticeship training in England'. *Journal of Education and Work*, 29, 470-493. [Individualised Learner Record ILR]
39. GAYLE, V., MURRAY, S. & CONNELLY, R. 2016. 'Young people and school General Certificate of Secondary Education attainment: looking for the 'missing middle' '. *British Journal of Sociology of Education*, 37, 350-370. [YCS]
40. GUTMAN, L. M. & SCHOON, I. 2012. 'Correlates and consequences of uncertainty in career aspirations: Gender differences among adolescents in England'. *Journal of Vocational Behavior*, 80, 608-618. [LSYPE]
41. GUTMAN, L. M., SCHOON, I. & SABATES, R. 2012. 'Uncertain aspirations for continuing in education: Antecedents and associated outcomes'. *Developmental Psychology*, 48, 1707. [LSYPE]
42. HAYWARD, G. & HOELSCHER, M. 2011. 'The use of large-scale administrative data sets to monitor progression from vocational education and training into higher education in the UK: possibilities and methodological challenges'. *Research in Comparative and International Education*, 6, 316-329. [HESA; UCAS applicant data] **
43. HORDOSY, R. 2014. 'Who knows what school leavers and graduates are doing? Comparing information systems within Europe'. *Comparative Education*, 50, 448-473. [YCS; LSYPE; Careers Wales Destinations; DLHE]
44. HU, S. & WOLNIAK, G. C. 2010. 'Initial Evidence on the Influence of College Student Engagement on Early Career Earnings'. *Research in Higher Education*, 51, 750-766. [Millennium Cohort Study]
45. JACQUELINE, S., NOLAN, J., SCHOON, I., ROSS, A. & MARTIN, P. 2007. 'Science related careers: aspirations and outcomes in two British cohort studies'. *Equal Opportunities International*, 26, 129-143. [NCDS; BCS]
46. KASHEFPAKDEL, E. T. & PERCY, C. 2016. 'Career education that works: an economic analysis using the British Cohort Study'. *Journal of Education and Work*, 1-18. [BCS] **
47. KHATTAB, N. 2014. 'How and when do educational aspirations, expectations and achievement align?' *Sociological Research Online*, 19. [LSYPE; NPD]
48. KHATTAB, N. 2015. 'Students' aspirations, expectations and school achievement: What really matters?' *British Educational Research Journal*, 41, 731-748. [LSYPE]
49. LENTON, P. 2005. 'The school-to-work transition in England and Wales'. *Journal of economic studies*, 32, 88-113. [YCS] **
50. LENTON, P. & MCINTOSH, S. 2008. *Achievement, Progression and Labour Market Impact of BTEC Qualifications: An analysis using the eleventh Youth Cohort Study*. Sheffield: Department of Economics, University of Sheffield. [YCS]

51. MOORES, E. & REDDY, P. 2012. 'No regrets? Measuring the career benefits of a psychology placement year'. *Assessment and Evaluation in Higher Education*, 37, 535-554. [DLHE]
52. MOOTE, J. & ARCHER, L. 2017. *Failing to deliver? Exploring the current status of career education provision in England*. Research Papers in Education, 1-29. [Aspires 2] **
53. PATRIGNANI, P. and CONLON, G. 2011. *The long term effect of vocational qualifications on labour market outcomes*. [ILR] **
54. PERCY, C. 2009. *Exploring the impact of formal work experience and term-time paid employment using longitudinal data from England (2003–2007)*. London: Education and Employers Taskforce. [LSYPE]
55. PURCELL, K., ELIAS, P., ATFIELD, G., BEHLE, H., ELLISON, R., LUCHINSKAYA, D., SNAPE, J., CONAGHAN, L. & TZANAKOU, C. 2012. *Futuretrack Stage 4: transitions into employment, further study and other outcomes*. Warwick Institute for Employment Research, Warwick. [Futuretrack] **
56. PURCELL, K; ELIAS, P; ATFIELD, G; BEHLE, H; ELLISON, R; HUGHES, C; LIVANOS, I; TZANAKOU, C (2009). *Plans, Aspirations and Realities: Taking Stock of Higher Education and Career Choices One Year on*. Institute for Employment Research, University of Warwick. [Futuretrack]
57. PURCELL, K., ELIAS, P., ELLISON, R., ATFIELD, G., ADAM, D. & LIVANOS, I. 2008. *Applying for Higher Education—the diversity of career choices, plans and expectations*. IER Report. [Futuretrack] **
58. QUINTINI, G., MARTIN, J. P. & MARTIN, S. 2007. *The changing nature of the school-to-work transition process in OECD countries*. [ECHP] **
59. REISS, M. J. & MUJTABA, T. 2017. 'Should we embed careers education in STEM lessons?' *Curriculum Journal*, 28, 137-150. [Aspires; UPMAP (Understanding Participation rates in post-16 Mathematics And Physics)]
60. SABATES, R., HARRIS, A. L. & STAFF, J. 2011. 'Ambition Gone Awry: The Long-Term Socioeconomic Consequences of Misaligned and Uncertain Ambitions in Adolescence'. *Social science quarterly*, 92, 959-977. [BCS] **
61. SCHMELZER, P. 2011. 'Unemployment in early career in the UK: A trap or a stepping stone?' *Acta Sociologica*, 54, 251-265. [BHPS]
62. SCHOON, I. 2012. *Intergenerational transmission of worklessness: Evidence from the Millennium Cohort and the Longitudinal Study of Young People in England*. [LSYPE; MCS] **
63. SCHOON, I. 2014. 'Parental worklessness and the experience of NEET among their offspring. Evidence from the Longitudinal Study of Young People in England (LSYPE)'. *LLCS*, 5. [LSYPE]

64. SCHOON, I. & LYONS-AMOS, M. 2016. *Diverse pathways in becoming an adult: The role of structure, agency and context*. Research in Social Stratification and Mobility. [BHPS; UK-HLS] **
65. SCHOON, I. & LYONS-AMOS, M. 2017. 'A socio-ecological model of agency: The role of structure and agency in shaping education and employment transitions in England' *Longitudinal and Life Course Studies*, 8, 35-56. [LSYPE] **
66. SCHOON, I., ROSS, A. & MARTIN, P. 2007. 'Science related careers: aspirations and outcomes in two British cohort studies'. *Equal Opportunities International*, 26, 129-143. [NCDS; BCS] **
67. SMITH, K. 2015. 'Measuring the Impact of Enterprise Education and Entrepreneurship Support in Higher Education: Can Routinely Collected Data Be of Use?' *Industry and Higher Education*, 29, 493-503. [DLHE & HE-BCI]
68. SPECKESSER, S., ANDERS, J. & COULON, A. 2015. *Empirical research on youth transitions to, and within the labour market: findings of descriptive and econometric analyses*. [LFS; EULFS; NCDS; BCS; YCS; NPD]
69. SYMONDS, J., SCHOON, I. & SALMELA-ARO, K. 2016. 'Developmental trajectories of emotional disengagement from schoolwork and their longitudinal associations in England'. *British educational research journal*, 42, 993-1022. [LSYPE] **
70. TAYLOR, A. R. & HOOLEY, T. 2014. 'Evaluating the impact of career management skills module and internship programme within a university business school'. *British Journal of Guidance & Counselling*, 42, 487-499. [DLHE]
71. TAYLOR, M. P. 2013. *The labour market impacts of leaving education when unemployment is high: Evidence from Britain*. ISER Working Paper Series, 2013-12. [BHPS]
72. TOMASZEWSKI, W. & CEBULLA, A. 2014. 'Jumping off the track: comparing the experiences of first jobs of young people living in disadvantaged and non-disadvantaged neighbourhoods in Britain'. *Journal of youth studies*, 17, 1029-1045. [BHPS] **
73. TUMINO, A. & TAYLOR, M. P. 2015. *The impact of local labour market conditions on school leaving decisions*. ISER Working Paper Series. [BHPS]
74. WOLBERS, M. H. 2007. 'Patterns of labour market entry: a comparative perspective on school-to-work transitions in 11 European countries'. *Acta sociologica*, 50, 189-210. [European Union LFS 2000 ad hoc module on school-to-work transitions provided by EUROSTAT.]
75. YATES, S., HARRIS, A., SABATES, R. & STAFF, J. 2011. Early occupational aspirations and fractured transitions: a study of entry into 'NEET' status in the UK. *Journal of social policy*, 40, 513-534. [YCS] **