



In collaboration with



National Foundation for  
Educational Research

# Investigating the potential use of long-term school and college destination measures

## Final report

Jenna Julius  
Jude Hillary  
Henry Faulkner-Ellis

**February 2022**



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## Foreword – Alice Barnard



So often, educational success is measured using short-term metrics like exam results and league tables. While these offer snapshots of a moment in time, they also provide an incomplete and therefore potentially misleading picture. Success is about more than short-term achievements – it's also about individuals' long-term goals, career success and personal fulfilment.

A key purpose of education is to set young people on a path to success in work and in life. But how this looks depends on a number of factors, ranging from their personal attainment scores to their future earnings and even socio-economic background. Since any system is geared towards the outputs we measure, isn't it time to think more deeply about how longer-term destination measures can supplement the data we currently rely on?

Edge helped to found the Rethinking Assessment movement, which aims to revolutionise our assessment system, moving away from a one-size-fits-all approach to assessment, towards a model that values each learner's individual strengths. A significant part of this includes a push for more comprehensive destination measures.

The House of Lords Committee on Youth Unemployment, which Edge has also been supporting, also called directly for the better use of long-term destination measures to help drive better preparations for young people's careers.

Already, the Department for Education (DfE) produces data on young people's destinations across institutions in the year after completing their education. While this is certainly useful, it tells us nothing about where young people end up five or even ten years after they have left an institution. DfE have worked with other Departments including the Department for Work and Pensions (DWP) to develop the detailed and powerful Longitudinal Education Outcomes (LEO) dataset. Compiling data on young people's activities and earnings from a period of over a decade, it provides precious insights into young people's longer-term prospects and trajectories.

These could provide a much better and more relevant reflection on success, yet at present government is using and publishing just the tip of the iceberg from this unparalleled dataset. Supplementing existing short-term information with even a handful of these longer-term outcomes could help schools and colleges grasp far better what their learners go on to do. Most importantly it could help them to identify, reflect on and address strengths and challenges in their practice. This might include fresh approaches to teaching and learning, new curricula, improved careers provision and targeted learning support.

We recognise that economic measures such as earnings and employment status are not the only ways of evaluating longer term success. Other factors such as value to society, individual



fulfilment and well-being are also important, but cannot currently be measured, so there is scope for further development of other destination measures, but this is a step in the right direction.

That is why we asked colleagues at the National Foundation for Educational Research (NFER) to undertake an independent in depth analysis of the LEO dataset to understand how the data can be improved and used to construct helpful and supportive information for schools and colleges about the longer term destinations of their former students.

This report contains invaluable reflections on how best to understand and apply the existing LEO data and recommendations for moving forward. It is imperative for the government to use this data to drive policy and develop a more robust framework of destination information supporting young people to achieve their best for the longer term.

For schools and colleges, the change can begin right now. Your institution's data is readily available in a clear explanatory report from NFER. Why not get hold of it by emailing [destinations@nfer.ac.uk](mailto:destinations@nfer.ac.uk) and focus your next SLT meeting on any lessons and insight, considering how a focus on destinations could help deliver even better long-term outcomes for your pupils? No more focusing on exam results alone. No more relying on instinct where the data are incomplete. The LEO data provide a unique opportunity to transform the educational landscape for your institution and to create highly-fulfilled young people who can truly thrive.

**Alice Barnard**

Chief Executive, Edge Foundation



# Executive Summary

One of the key purposes of education is to enable young people to gain knowledge and develop the skills and behaviours to support their progression to further study, training, and employment. This enriches the young person's experience by making education meaningful and demonstrating its relevance to their current and future life experience (Edge Foundation, 2018; OECD; 2018). However, the main focus of schools and colleges has historically been on attainment outcomes and less on specific measures of future labour market success or the wider benefits to society and individuals.

Over the last decade, there has been an increasing focus on looking at what young people move on to after they leave the education system and the vital role schools and colleges play in supporting a young person's journey towards the labour market. New destination measures have been developed and published by the Department for Education (DfE). These provide information about what young people were doing in the 12 months after leaving compulsory education. While the development of these destination measures has been important, they only provide a snapshot of what is happening in the short term, when many young people are still transitioning into a sustained education or employment destination. Information about longer term destination outcomes could potentially provide greater insights for schools and colleges. This could help improve young peoples' labour market outcomes.

The purpose of this exploratory study is to investigate the potential for using DfE's new Longitudinal Educational Outcomes (LEO) dataset to track the labour market outcomes of young people (up to age 30) who completed their education in the English education system. It also seeks to provide information about the value that schools and colleges can add to young people's destinations. While there are many factors which impact a young person's labour market outcomes up to age 16 (e.g. their family circumstances, etc.), and after post-16 qualification (e.g. the institution where they complete any subsequent qualifications, etc.), we focus on where young people study their post-16 qualifications. Specifically, this study considers to what extent destination measures can provide information about the 'value-added' by schools and colleges in supporting young people to progress onto high quality destinations. In other words, by 'value-added', we focus on isolating the impact of the institution where they studied their main 16-18 qualification, over and above their prior attainment and wider contextual factors (including socio-economic background, region and qualification studied).

By their very nature, one of the limitations of looking at longer term destinations is the length of time needed to link a young person age 16 to 18 to their labour market outcomes over a decade later. Throughout this report, we focus on describing the trends in the cohort who started their post-16 qualifications in 2003/04 in mainstream schools and colleges as their labour market history can be tracked for the longest in the LEO dataset (up until 2016/17). As such, our findings will not reflect the significant changes in post-16 education since 2003/04. These include raising the education participation age to 18, a raft of reforms to apprenticeships and the introduction of new T-Level qualifications. Full details of our methodology, as well as specific data-related recommendations, can be found in the accompanying technical report.

A further limitation is that the LEO data only allows us to analyse destination measures across limited economic measures such as earnings and employment status. It is not possible to measure other factors that might be deemed important for a successful destination such as value to society, civic participation, individual fulfilment and well-being. Ideally, we would use a range of measures to assess the wider value-added of schools and colleges, but this data is not currently available in a form which can be linked to individual schools and colleges. This should be borne in mind when considering the implications of our analysis.

School and college leaders who are interested in accessing information about their longer-term destination measures can contact us at [destinations@nfer.ac.uk](mailto:destinations@nfer.ac.uk) to access a mini-report of their institution (subject to minimum sample sizes and availability of information). An example of an institutional report can be found in the Appendix of this report.

## Context is crucial for understanding and interpreting destination measures

In order to understand the impact that post-16 institutions have on young people's labour market outcomes, we first outline when and via which routes young people enter the labour market.

### ***Most young people are not in sustained employment until their mid-20s***

By tracking the destination trajectories of the 2003/04 cohort up to the age of 30, we observe large year-on-year increases between the ages of 21 and 25 in the number of young people who were in sustained employment (in employment at least one day in each of the 12 months of that year). This is from less than a quarter of the cohort (24 per cent) in sustained employment at age 21 to just over half of the cohort (53 per cent) at age 25. This share may be lower than might have been anticipated, due to the fact that many young people are still moving between education and employment or between employers at this age.

As such, evaluating the outcomes of institutions based on the employment or earnings of young people during their early 20s could produce misleading results. This suggests that, until young people reach their mid-20s, institutions should focus more on the cohorts' main activities, such as a composite measure of whether they are in either sustained education or employment. It also suggests a need to draw on longer-term destination measures to assess young people's earnings outcomes.

### ***Background characteristics are strongly related to destination outcomes***

Young people's progression pathways systematically differ based on their background characteristics, such as gender, ethnicity, special educational needs, prior attainment, eligibility for free school meals (FSM) and region. For example, for the 2003/04 post-16 cohort, young people who achieved five A\*-C in their GCSEs were a third more likely to be in sustained employment and over five times less likely to be on benefits at age 25 compared to young people who did not achieve five A\*-C in their GCSEs. These young people were also more likely to take an academic route.

Further, young people who were eligible for FSM at age 16 are less likely to be in sustained education or employment, and more likely to be on benefits at all ages up to 30. For example, at age 25, 40 per cent of young people who are eligible for free school meals in the 2003/04 post-16 cohort are in sustained employment and 24 per cent are in receipt of benefits, compared to 55 and eight per cent of non-disadvantaged young people, respectively.

Further, earnings vary by subject interests. By age 29, young people who have undertaken at least one science or maths qualifications between the ages of 16 and 18 earn over a third more on average than those who have not. Similarly, we find that the region within which a young person grows up is strongly related to their earnings. On average, a young person who finishes their KS4 in London at age 16 earns over twice as much by age 29 than somebody based in the North East.

## Measuring the value-added of post-16 schools and colleges

We draw on the insights outlined above to explore the association between the type of institution where a young person studies their main post-16 qualification and their destination outcomes. We also explore the value-added of different schools and colleges to assess a school's or college's contribution to a young person's labour market outcomes – over and above their prior attainment and wider contextual factors.

### ***Most of the differences in earnings and employment outcomes across schools and colleges can be explained by differences in cohort characteristics and region***

While there is a large amount of variability in average earnings and employment outcomes across schools and colleges, most of the differences can be explained by differences in cohort characteristics, prior attainment and region (disadvantage, GCSEs at age 16, ethnic background of learners, first language of learners and region of the learner). Indeed, these factors account for over two-thirds of the variation in average earnings outcomes across post-16 schools and colleges.

### ***Post-16 institutions only account for a small proportion of the variation in earnings and employment outcomes***

We find that the institution where a young person studies their post-16 qualifications is associated with a small but not insignificant role in explaining their earnings and employment outcomes. This is evidenced by our finding that, on average, an individual attending a school or college in the top quarter of institutions (in terms of value-added) is earning over a thousand pounds more by their late 20s compared to a similar individual studying their post-16 qualification in the bottom quarter of institutions.<sup>1</sup>

Similarly, a one standard deviation increase in institutional value added at post-16 is associated with an almost two-percentage point increase in the probability of being in sustained employment, self-employment, or education at age 29 accounting for cohort characteristics, prior attainment and qualification characteristics.

While our analysis shows that post-16 institutions only account for a small proportion of the variation in earnings and employment outcomes, it is important to recognise that our analysis uses data from a period where there was much less emphasis on schools and colleges preparing young people for the labour market compared to today. We may expect to see more differentiation between schools and colleges in the labour market outcomes of the cohorts of young people who are currently progressing through the education system. Furthermore, given that our estimates are averages, it is important to recognise that they disguise substantial differences in outcomes across institutions with the highest and lowest value-added.

It is important to note that, as with many measures of school- or college-level outcomes (e.g. attainment), there may be substantial differences between the ability, aspirations and family circumstances of young people who choose to attend different institutions. We are not able to account for all these factors using the LEO data. This may lead to bias in our estimates.

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<sup>1</sup> Using a fixed effects econometric model, we identify that a one standard deviation increase in institutional value-added at post-16 is associated with a 4.4 per cent increase in average earnings between the ages of 28 and 29 once pupil and qualification characteristics are accounted for (e.g. GCSE attainment, type of qualification, region, and subject mix studied).

### ***There is a case for increasing the use of destination measures, as part of a broad basket of measures, to inform school and college practice***

Notwithstanding the fact that longer-term destination measures necessarily have a long time delay and refer to a cohort which left the institution a number of years earlier, our estimates for post-16 school and college value-added suggest that destination measures have the potential to provide these institutions with additional insights. In particular, they can help develop their understanding of how the labour market outcomes of young people from their institution compare to the outcomes of institutions with similar cohorts, and how outcomes are changing across cohorts of young people. While this information cannot be used to judge the “quality” of an institution and should not be used in that way, it can help schools and colleges to think about how they can improve the outcomes of young people.

However, our analysis also suggests that schools and colleges need to employ a basket of measures to analyse the destination outcomes of their young people rather than one single measure. This basket might include a range of different outcome measures (earnings and whether they are in a sustained employment or education destination (which we refer to as activity)), which could be used across different points in time. Moreover, it is important that context is taken into account when interpreting destination measures given that qualification, individual background and geographic factors all play a role in determining destination outcomes.

In general, activity measures (such as whether cohorts progress into sustained education or employment) provide more information about pupils' outcomes than earnings measures until young people have reached their mid-20s. After this point, there are much greater differences across institutions in average earnings than in activity so earnings measures can more readily be compared across institutions. Further, as activity and earnings outcomes change as young people progress through the labour market, there is also a need to track these at different points in time.

There is still more to be done in understanding how useful destination measures can be for school and college leaders in practice, and in ensuring that measures are provided in a readily interpretable and constructive way.

## Conclusions and recommendations

Schools and colleges act as an important stepping-stone along young people's journey through the education system and onwards into the labour market. There are many ways in which the school or college that a young person attends might influence their destination outcomes from quality of teaching, to their ability to motivate pupils and to the wider support which they provide their pupils to progress onto a successful destination. They could also invest in better careers guidance and support, which other research has suggested is variable across schools and colleges (Parker, 2021).

Our analysis finds that, while a large amount of the variation in destination outcomes can be accounted for by the characteristics of young people before they start their post-16 qualifications (e.g. prior attainment, eligibility for free school meals, special educational needs, ethnic background and region), the schools and colleges where young people study their post-16 qualifications do have a role to play in supporting young people to achieve good destination outcomes beyond the qualification. In turn, despite the challenges associated with using destination measures, they could potentially be used as part of a range of measures to provide schools and colleges with information to celebrate success, inform approaches and potentially develop targeted support.

The case for providing schools and colleges with more information on destination measures to support young people's outcomes is only set to increase going forward as data sources improve. Indeed, potential extensions to the LEO dataset, and recently introduced information about geographical mobility in LEO could provide

schools and colleges with increasingly nuanced and detailed information about their cohorts' progression pathways. Given that our analysis uses data from a period where there was much less emphasis on schools and colleges preparing young people for the labour market compared to today, we may see more differentiation in destination outcomes for future cohorts.

However, context is important. That is, as far as possible, school and college destination measures would need to be considered within the context of their cohorts, the regions within which they are located (as employment opportunities vary by area), and the qualifications which they are offering.

Finally, there is still more to be done in understanding how useful destination measures can be for school and college leaders in practice, and in ensuring that measures are provided in a readily interpretable and constructive way, as set out in our recommendations below. However, given the current lack of readily available and interpretable data on long-term destination measures, the starting point is for schools and colleges to be given access to the appropriate data for them to better interpret and understand their destination measures.

### **Policy recommendations**

#### **Recommendation 1: Work with schools and colleges to develop best practice for using destination measures to help young people achieve better labour market outcomes**

Our research suggests that destination measures could provide additional information to schools and colleges, over and above the currently available measures, to inform approaches and develop targeted support in preparing young people to flourish in further education, higher education, training and employment. However, we need to develop our understanding of how schools and colleges could be using these measures in practice and share this more widely.

<b>Actions for the Edge Foundation</b>	Set up a group of trailblazing schools and colleges to develop best practice in using destination measures.
<b>Actions for schools and colleges</b>	<p>Schools and colleges can contact us at <a href="mailto:destinations@nfer.ac.uk">destinations@nfer.ac.uk</a> to access a mini-report of their institution's information (subject to minimum sample sizes and availability of information).</p> <p>Contact the Edge Foundation if you would be interested in being involved in the Edge Foundation's group of trailblazing schools and colleges.</p>
<b>Actions for researchers</b>	Undertake further research to better understand what school and college practice is associated with institutions adding greater value to young people's destination outcomes.

### **Recommendation 2: Improve the destination measures information made available to schools and colleges at post-16 to help inform practice in supporting young people to achieve better future outcomes**

While the Government has taken significant strides in developing destination measures in recent years, availability and access to long-term destinations information (measured at least a year after qualification completion) could be improved. It has the potential to support schools and colleges in using destination measures, as part of a basket of measures, to inform their approaches, develop targeted support and as another measure of the contribution they make. In an ideal world, destination measures would be broadened to cover a wider set of outcomes.

#### **Actions for policy makers**

Make long-term destination measures available to the institutions where young people study their post-16 qualifications.

Develop a benchmarking tool to support schools and colleges to better contextualise and interpret their destination measures (e.g. by enabling comparisons across schools or colleges with similar intakes).

### **Recommendation 3: Target additional transitional support to schools and colleges with high densities of young people who are at risk of falling out of the labour market**

Young people who are Not in Education, Employment or Training (NEET) tend to have worse long-term social and labour market outcomes (Gadsby, 2019). Recent data developments allow for the identification of schools and colleges with particularly high rates of young people becoming NEET. While high NEET rates are often driven by a complex set of factors, this information could be used to target interventions towards at-risk young people who are currently in schools and colleges with high NEET rates, to help them support young people to achieve better employment destinations.

#### **Actions for policy makers**

Develop a data-driven pilot programme to target support towards institutions with high rates of young people who are at-risk of becoming NEET.

# 1 Making the case for destination measures

One of the key purposes of education is to enable young people to gain knowledge and develop the skills and behaviours to support their progression to further study, training, and employment. This enriches the young person's experience by making education meaningful and demonstrating its relevance to their current and future life experience (Edge Foundation, 2018; OECD, 2018).

While there are many factors that determine the ultimate destination outcomes of a young person (for example, a young person's motivation), schools and colleges play a vital role in supporting young people into the labour market – both in terms of the qualifications they obtain and their wider skills. Despite this, schools and colleges only have limited information to enable them to assess the role that broader teaching, skills development, enrichment and careers guidance play in supporting young people to secure a successful and fulfilling career after they leave their institution.

This is an exploratory study which investigates the potential for the new Longitudinal Educational Outcomes (LEO) dataset, that can be used to track the labour market outcomes of young people (up to age 30) who completed their education in the English education system, to provide information about the value that schools and colleges can add to young people's destinations. It explores how destination measures could be interpreted and used within schools and colleges to help them improve young peoples' labour market outcomes.

Specifically, it considers to what extent destination measures can provide information about the 'value-added' by schools and colleges in supporting young people to progress onto high quality destinations. By 'value-added', we refer to a metric which can be used to assess a school's or college's contribution to a young person's labour market outcome – over and above their prior attainment and wider contextual factors. While we recognise that there are many factors which impact a young person's labour market outcomes both up to post-16 (where they grow up, their GCSEs etc.) and after post-16 (the institution where they complete any subsequent qualifications, the support and training offered by their employer, etc.), we focus on identifying the impact of the institution where they studied their main 16-18 qualification as it is a key milestone during a young person's development.

By their very nature, one of the limitations of looking at longer term destinations is the length of time needed to link a young person age 16 to 18 to their labour market outcomes over a decade later. Throughout this report, we focus on describing the trends in the cohort who started their post-16 qualifications in 2003/04 in mainstream schools and colleges as their labour market history can be tracked for the longest in the LEO dataset (up until 2016/17). In turn, our findings will not reflect the significant changes in post-16 education since 2003/04, including an increase in age of participation in education up to age 18, a raft of reforms to apprenticeships and the introduction of new T-Level qualifications. Further details on our methodology, as well as specific data-related recommendations, can be found in the accompanying technical report.

Our research explores the potential value of destination measures by investigating the association between a young person's labour market outcomes and the institution where that young person studied their main qualification gained between 16-18. More specifically, it considers to what extent destination measures can provide information about the 'value-added' of schools and colleges in supporting young people to progress onto high quality destinations, beyond the qualifications they achieve. Value-added refers to a commonly used metric which tries to identify a school's or college's contribution to a young person's labour market outcome over and above their prior attainment and wider contextual factors. In other words, the value-added of a school or

college provides a measure of the contribution which a school or college makes to pupil outcomes, over and above characteristics which can be measured. Value-added measures are already widely used by policymakers and schools to track and understand their performance.

The datasets available for this kind of analysis are limited in scope, and only provide information on specific labour market outcomes such as earnings and employment. Other factors that might be deemed important for a successful destination such as value to society, individual fulfilment and well-being are not available in the data and so are excluded from our analysis. There are many careers in sectors such as health and social care, the third sector and the creative arts, which have lower economic returns but are argued to have higher societal returns. This should be borne in mind when considering the implications of our analysis.

### 1.1 Understanding the impact of institutions in contributing to young people's destinations

While there are numerous studies that have investigated the association between where a young person studies and their outcomes, these have generally focused on exam attainment rather than on labour market outcomes. Most of these studies have concluded that the school or college that a young person attends can only explain a relatively small proportion of their exam performance.

Wilkinson *et al.* (2018) find that roughly ten per cent of the variation in Key Stage 4 (KS4) attainment outcomes can be accounted for by the institution where a young person studied. Differences in the contextual value-added and progress measures between most schools are generally small<sup>2</sup>, and vary significantly across cohorts (Thompson, 2019; Perry, 2018).

For post-16 qualifications, Tuckett *et al.* (2021) estimate that the school or college attended post-16 also accounts for around ten per cent of the variation in young people's Key Stage 5 (KS5) attainment outcomes. Crawford *et al.* (2011) draw on detailed survey information to explore the association between the type of institution an individual attends, their KS5 attainment and university participation. Their analysis finds that young people attending a general further education (FE) college do systematically less well in their post-16 qualifications while those attending a sixth form college perform significantly better compared to those attending a school, even when a wide range of background characteristics are accounted for.

There are also a small number of studies that have looked more specifically at the association between where a young person studies and their labour market outcomes. For higher education qualifications, Britton *et al.* (2018) have investigated the association between degree institution, subject and labour market outcomes. Their analysis finds significant variation at both the institution and the subject level, demonstrating that both where and which qualification is studied at university is an important factor which influences a young person's destination.

More recently, Aucejo *et al.* (2020) find, in their analysis of the value-added of general FE colleges, that a one standard deviation increase in institutional value-added leads to a three percentage point increase in daily earnings and a 1.7 percentage point increase in the likelihood of being employed for at least 90 days for 16-20 year old learners. Our analysis extends this research by focusing more specifically on young people, and by analysing value-added outcomes across both schools and colleges.

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<sup>2</sup> Progress scores are value-added scores where only prior attainment is accounted for, while contextual value-added are value-added scores which account for a much wider range of characteristics.

## 1.2 Data

Our analysis uses the LEO dataset that combines school, further and higher education information with earnings and benefits data, as shown by Figure 1. As the LEO dataset is based on administrative data, it can be used to track the labour market outcomes of whole cohorts of young people who completed their education in the English education system. This enables us to identify the association between their labour market outcomes and the post-16 schools and colleges within which they studied. Further, the LEO data contains a rich set of contextual information that can be used to investigate a range of other factors which affect young people's labour market outcomes alongside their qualification level and the institution they attended.

**Figure 1:** The components of the LEO data



### **Cohorts**

We analyse the labour market trajectories until 2016/17<sup>3</sup> of all the cohorts of young people who started their post-16 qualifications in mainstream schools and colleges in England between 2003/04 and 2012/13. In this report, we mainly focus on describing the trends within the 2003/04 cohort as we are able to track their labour market histories for the longest.

Although our analysis is only based on data available up to 2016/17, it nonetheless provides an important starting point for exploring how destination measures could be used by schools and colleges as more timely data becomes available in future. It is worth noting that, at any point in time, labour market outcomes can only be tracked for individuals who are in employment in Great Britain.

### **Earnings information**

The LEO data does not include information on hours worked. Therefore, we are not able to observe whether an employee earns less because they work fewer hours or because they are doing a job that is less well remunerated. This means that our analysis under-estimates the earnings of part-time workers compared to full-

<sup>3</sup> This is the latest data available to researchers at the time which data access was granted.

time workers. As such, our analysis implicitly assumes that individuals who attend a specific school or college are a priori no more likely to subsequently work part-time than those at other institutions. If this assumption is incorrect, then our analysis will tend to under-estimate the earnings of institutions where individuals are more likely to work part-time. This is a particular concern for women, who are more likely than men to work part-time as they progress in their careers. This will underestimate the value-added of institutions where women are systematically more likely to choose to work part-time once they enter the labour market, even once background characteristics are taken into consideration.

Further, we are only able to identify self-employed workers in our data from the 2014/15 financial year onwards. In earlier years, these workers are not identified as being in employment or having earnings. This is problematic as the share of young people who are self-employed is not insubstantial. The latest ONS statistics show that the UK self-employment rates among 16-24 year olds and 25-34 year olds are 4.0 and 15.9 per cent respectively (ONS, 2020).

In turn, where our analysis relates to data from earlier years, we may be penalising young people who are more likely to be working in sectors with high self-employment such as skilled trades or the creative industries.

### ***School and college value-added***

As historical information for schools, colleges and other providers has not been consistently collected, this information was drawn from a number of sources and imputed where necessary (see the accompanying technical report for further details). For all institutional analyses, we restrict our analysis to institutions with at least 30 learners.

Our value-added estimates account for the wide-range of background information on young people which is available in the LEO data, including GCSE attainment, eligibility for free school meals at age 16, deprivation associated with a young person's local area at age 16 (measured by the Income Deprivation Affecting Children (IDACI) index), special educational needs at age 16, ethnic group, whether English is a young person's first language and region at age 16.

Our value-added estimates also account for the qualification type and subject undertaken by each young person. This means that our analysis is identifying the impact of attending a certain type of institution over and above the fact that pupils may be more or less likely to study a given qualification at one institution, compared to another. Given that there is already a relatively large literature looking at the returns associated with studying different qualifications, this enables us to focus on the extent to which outcomes vary across institutions, once differences in qualifications are accounted for.

It is important to note that, as with many measures of school- or college-level outcomes (e.g. attainment), there may be substantial differences between the ability, aspirations and family circumstances of young people who choose to attend different institutions, and we are not able to account for all these factors using the LEO data. This may lead to bias in our estimates. For example, if ambitious young people are more likely to attend a given institution, then our analysis will tend to over-estimate the value-added associated with that institution. Similarly, where a school pressures less ambitious young people to move institutions at KS4 or before, this will tend to over-estimate the value-added associated with that institution.

Further, while our data enables us to identify the socio-economic background of learners using eligibility for free school meals (FSM) at age 16 and the deprivation associated with a learner's home postcode at age 16 (based on the IDACI score), these are relatively crude measures of a young person's socio-economic background. Additionally, our analysis may not capture the complex interactions between different socio-economic characteristics which may be related to a young person's outcomes. Again, this may lead to bias in our estimates.

For example, these measures do not capture a young person's social class, which could be related to both a young person's institution, and their future destinations.

Finally, due to the age at which we are observing young people's outcomes, our earnings analysis will tend to understate the differences between the most educated and the least. This is because more educated pupils will be at an earlier point in their career and, as such, their salary will reflect their lower current level of experience. This will tend to under-estimate the value-added of institutions with young people who enter the labour market at older ages.

A more detailed overview of the data and limitations associated with our analysis can be found in section 2 of the accompanying technical report.

### ***Mechanisms***

There are a range of mechanisms through which post-16 institutions can help young people to achieve better destinations. These include helping them to attain better grades in their qualifications, assisting their progress onto higher or further education, and supporting them to progress onto a better quality employer who provides additional support or training.

Our main value-added estimates capture the value associated with studying at a given institution associated with each of these mechanisms<sup>4</sup>. As such, an institution could have higher value-added for a large number of reasons. For example, it may be that the institution is better at supporting young people progress onto higher education, which may then improve their labour market prospects. Or, the institution could be supporting young people to progress onto higher quality destinations by providing high-quality careers guidance and support.

In turn, given that many of these mechanisms are of interest in their own right, our analysis also investigates to what extent different mechanisms explain the variation in our value-added estimates across institutions.

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<sup>4</sup> It is important to note that our value-added estimates do capture differences in qualifications undertaken across institutions.

## 2 Progression from education to employment

### Summary

- There are a range of factors that affect young people's employment and earnings destinations alongside the institution they studied at between 16-18.
- Prior attainment, socio-economic background, the type of qualification studied, subject and region all affect their outcomes.
- This suggests that a nuanced approach is required to analyse and interpret destination measures and these different factors need to be accounted for.
- The earnings and employment outcomes for young people also vary considerably over the course of their 20s – most young people are not in sustained employment until their mid-20s.
- This suggests that care needs to be taken in which destination measures are used, and at what point in young people's careers.
- Activity measures (capturing sustained education or employment outcomes) should be used if looking at young people under the age of 25

To understand the impact that institutions have on young people's labour market outcomes, it is important to first understand when and via which routes young people enter the labour market.

This section explores the main routes through which young people progress from education to employment and to what extent this depends on the main Level 2 and above<sup>5</sup> qualification studied between the ages of 16-18. We draw on these insights to explore the implications for analysing the value-added of post-16 schools and colleges on young people's destination outcomes.

### 2.1 When do most young people enter employment?

Figure 2 presents the destination trajectories of young people up to the age of 30 for the 2003/04 post-16 cohort. At each age, every young person in the cohort is identified as being in one of the following categories<sup>6</sup>:

- **Sustained education:** In education at least one day in each of the 12 months of that year.
- **Sustained employment:** In employment at least one day in each of the 12 months of that year, and not identified as being in sustained education.

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<sup>5</sup> This includes GCSE and A-level equivalent level qualifications.

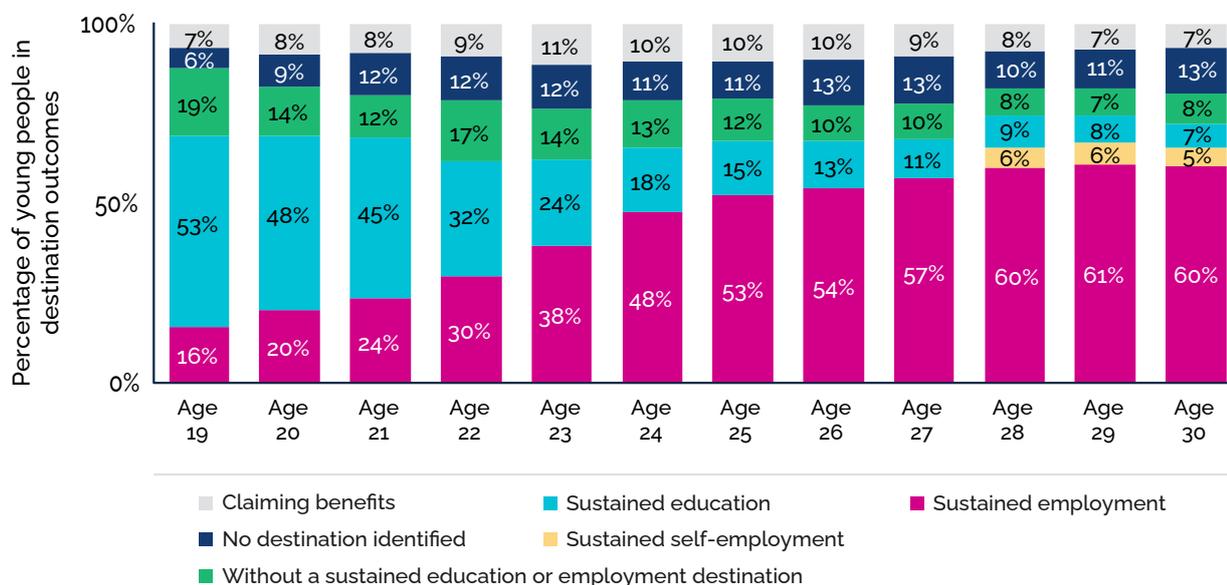
<sup>6</sup> Note that these categories are based on definitions developed by the Department for Education (DfE) (see Anderson and Nelson, 2021).

- **Sustained self-employment:** Self-employed at least one day in each of the 12 months of that year, and not identified as being in sustained education or employment. This information is only available for the last three years of data.
- **Claiming benefits:** On benefits at least one day in each of the 12 months of that year<sup>7</sup>.
- **Without a sustained education or employment destination:** In education, employment or on benefits which was not sustained in the previous 12 consecutive months. This category would, for example, include young people who had just transitioned from education to employment.
- **No destination identified:** Not identified as being in any of the categories above. This group includes those who are not in education or employment or claiming benefits, who have moved overseas and those who are deceased.

Figure 2 shows that around half (45 per cent) of young people at age 21 were identified as being in sustained education, 24 per cent of young people were in sustained employment, eight per cent were claiming benefits, a further 12 per cent were not identified as having a sustained education or employment destination and the remaining 12 per cent of young people had no destination identified.

Between the ages of 21 and 25, there was a large increase in the number of young people who were in sustained employment, from 24 per cent of the cohort to just over half of the cohort (53 per cent). Given that half of all young people were not in sustained employment until age 25, evaluating the value-added of institutions on earnings outcomes before then may lead to results that are unrepresentative of the wider cohort. As shown by Figures 3 and 4 in the accompanying technical report, patterns are similar for more recent cohorts, albeit the proportion of pupils progressing onto sustained educational destinations has increased.

**Figure 2:** Destination outcomes up to age 30, 2003/04 post-16 cohort 3.2 Comparing across educational pathways



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records

<sup>7</sup> Without being identified as being in sustained education or employment.

## 2.2 Comparing across educational pathways

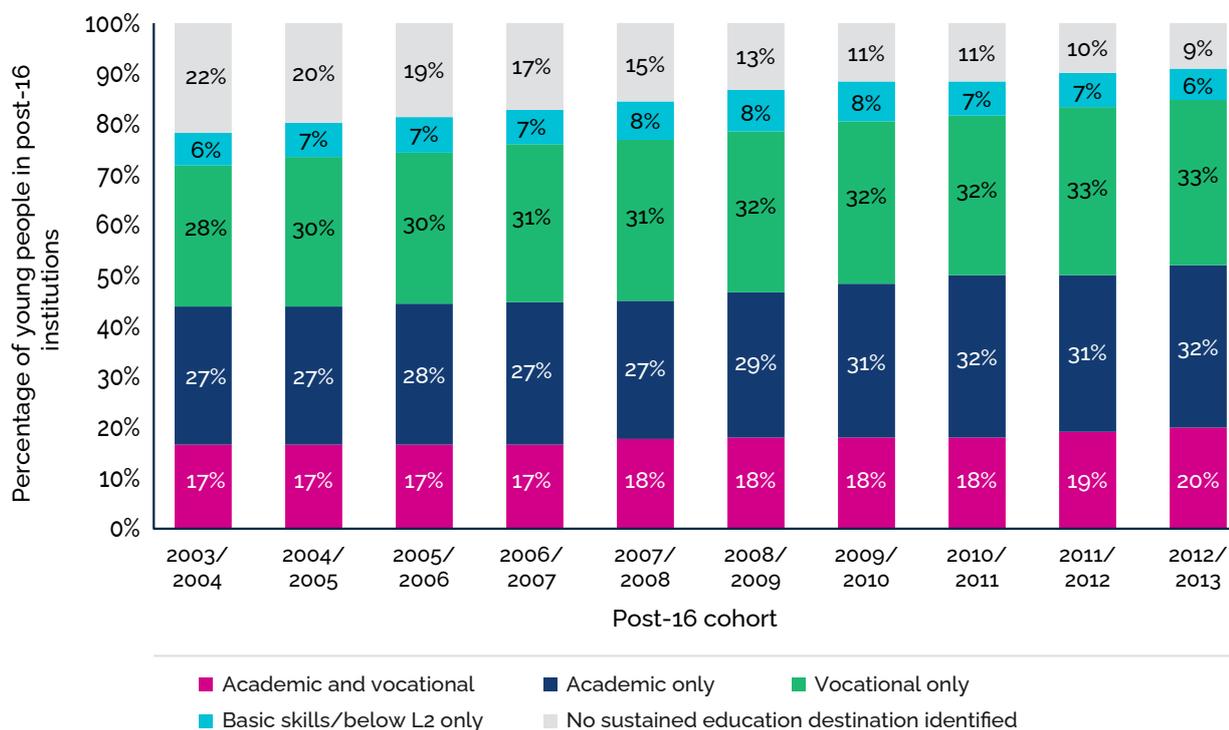
### 2.2.1 What do young people study at post-16?

Our post-16 analysis focuses on the main qualifications studied by young people between the ages of 16 and 18, as this facilitates comparison across different types of institutions. More specifically, we focus on completed qualifications<sup>8</sup> (see section 2 in the accompanying technical report for further details).

Figure 3 presents the cohorts who started their post-16 qualifications between 2003/04 and 2012/13 by the type of qualifications undertaken between the ages of 16 and 18.

The figure shows that the breakdown of the types of qualifications undertaken by young people remained relatively stable between the 2003/04 and 2012/13 cohorts with roughly equal shares of young people taking academic and vocational qualifications (see the accompanying technical report for further details). It also shows that a significant share of young people (roughly one in five) mix both academic and vocational qualifications. Between the 2003/04 and 2012/13 post-16 cohorts, the number of young people who were not identified as having a sustained education destination also fell. It is worth noting that this decline was taking place even before the compulsory schooling age increased to age 17 in 2013 and age 18 in 2015.

**Figure 3:** Type of post-16 qualification, by post-16 cohort



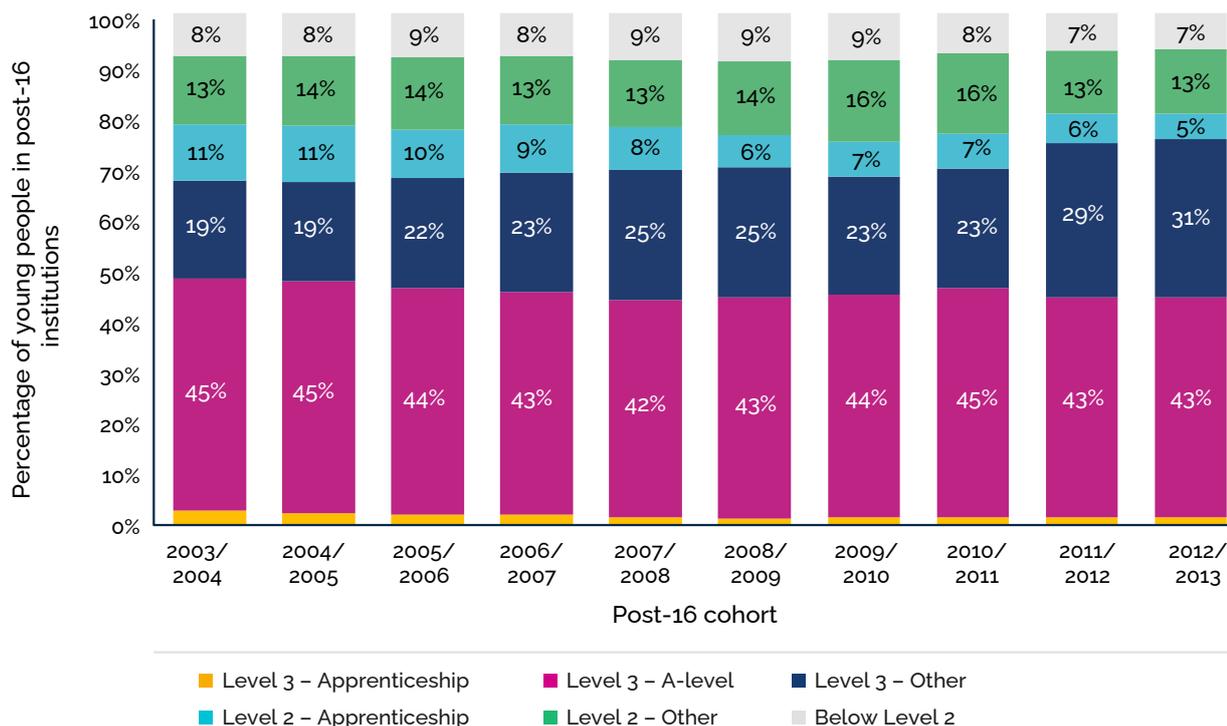
**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records

<sup>8</sup> Qualifications did not have to be completed by a set point. For example, if a young person did not complete their qualification until age 19, then this was still counted as a completed qualification in our analysis.

Figure 4 presents the main qualification undertaken by the young people in each of these cohorts. It shows that the most common qualification for young people at post-16 institutions was A-levels, with over two fifths of each cohort taking these as their main qualification. Around 20 per cent of young people took Level 2 and below qualifications at this age, and roughly 20 to 30 per cent of learners were undertaking other Level 3 qualifications at this age. Apprenticeships at both Level 2 and level 3 accounted for only a small share of the qualifications undertaken between the ages of 16 and 18<sup>9</sup>.

**Figure 4:** Main qualification undertaken by young people, by post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records

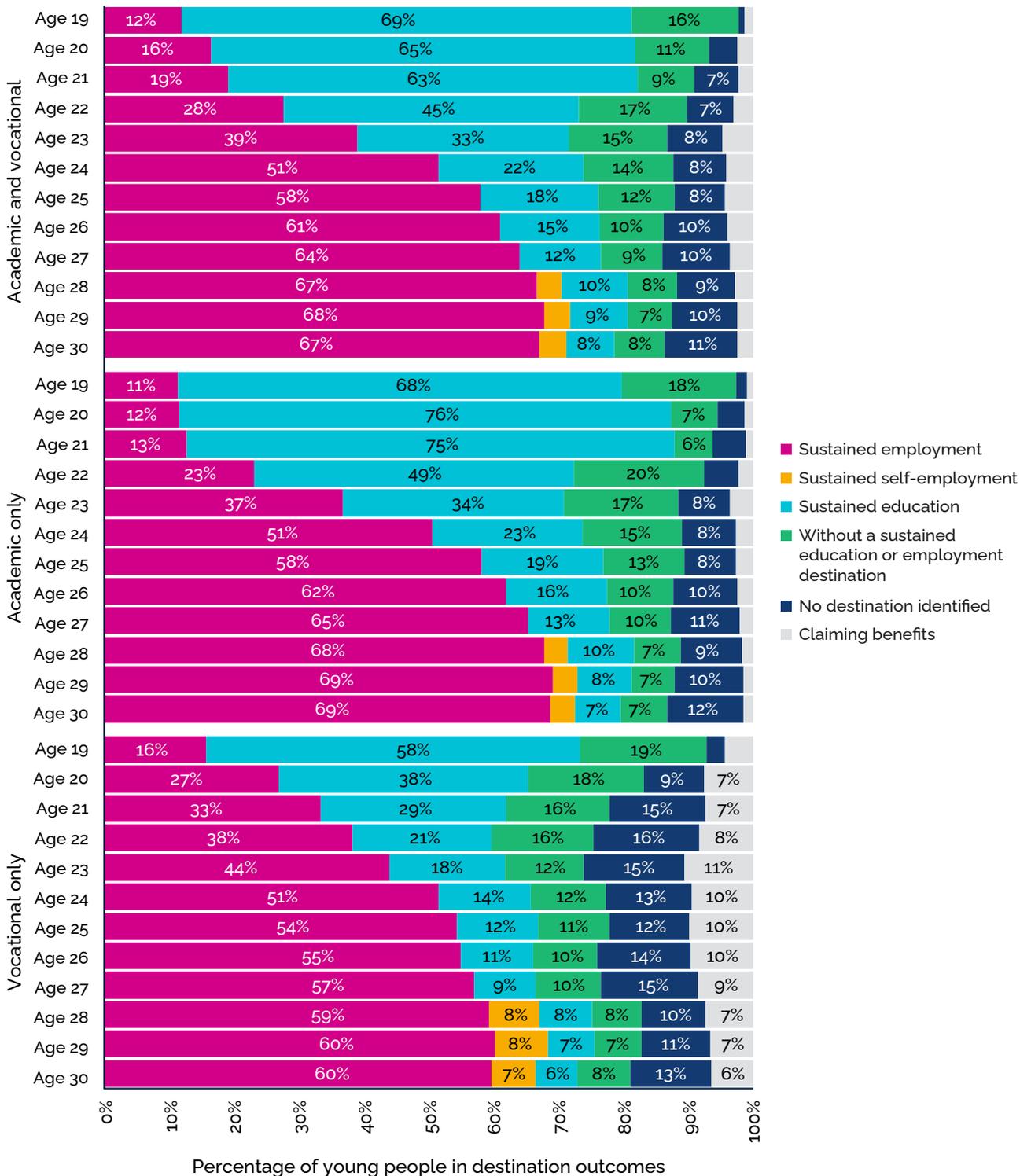
### 2.2.2 To what extent does employment progression differ by educational pathway?

Figure 5 presents destination trajectories for all young people between the ages of 16-17 undertaking at least one non-functional skills qualification at Level 2 and above, based on the main type of qualification undertaken by those young people.

Comparing across these different groups of young people, those taking vocational qualifications are more likely to be in sustained employment than those taking academic qualifications until the age of 24. After age 24, this pattern reverses and those taking academic qualifications are more likely to be in sustained employment. This illustrates the difficulty of comparing the employment outcomes of young people who progress through different routes until their late 20s.

<sup>9</sup> It is worth noting that some of the observed changes across qualifications in Figure 4 do vary based on the methodology used for selecting the main post-16 qualification undertaken by a young person.

**Figure 5:** Destination outcomes by type of qualification studied at ages 16-17, 2003/04 post-16 cohort



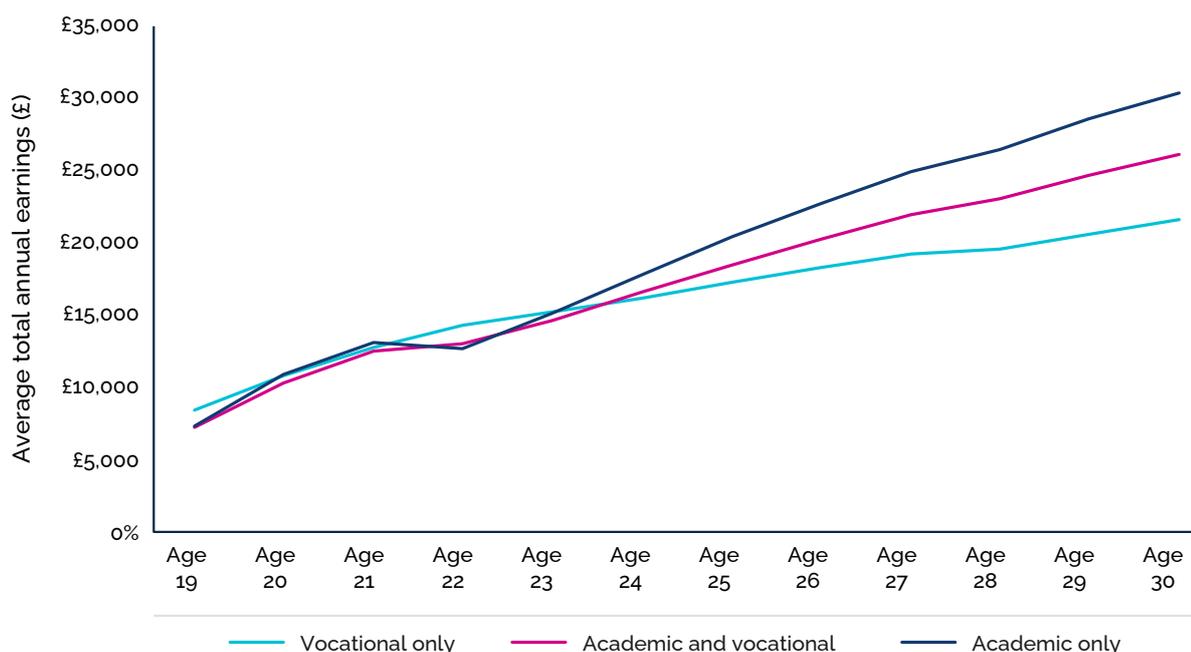
**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records and with a completed non-basic skills post-16 qualification

Figure 6 shows another key difference in labour market outcomes between these groups of young people. Up to age 23, young people who undertook vocational qualifications are more likely to earn similar or more than those who took an academic qualification. However, from their mid-20s onwards, the average earnings for the academic qualification group becomes greater, and the earnings gap between the two groups increases year-on-year. It is worth noting that, as shown by Figure 5, the groups of young people who enter the labour market at different points may not be representative of the wider cohort. This is especially true at younger ages.

The changing pattern of earnings by qualification type highlights the challenges in looking at a simple measure of earnings as a destination measure at a single point in time. It is important to note that this analysis does not suggest that vocational routes have lower earnings returns than academic routes for individual learners. A full analysis of the returns to different types of qualifications needs to take account of the circumstances and skills of individual learners. Other research has shown very positive returns for certain types of vocational or technical qualifications (Patrignani *et al.*, 2017) and there is a wide distribution of outcomes within both academic and vocational routes. The following charts take no account of the wider factors that determine young people's choice of qualification route and, as noted in the next section, there are systematic differences in the characteristics of those pursuing different routes.

**Figure 6:** Average total annual earnings by type of qualification studied at age 16-17, 2003/04 post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Average total earnings includes employment and self-employment earnings for all individuals who are in sustained employment, but not in sustained education. Includes all individuals in a mainstream state-funded school in England at KS4 with a non-missing KS4 attainment record.

## 2.3 Comparing across individual characteristics

Young people choose different qualifications and progression pathways based on their characteristics, ability, interests and background. This means that context should be considered when comparing their labour market outcomes.

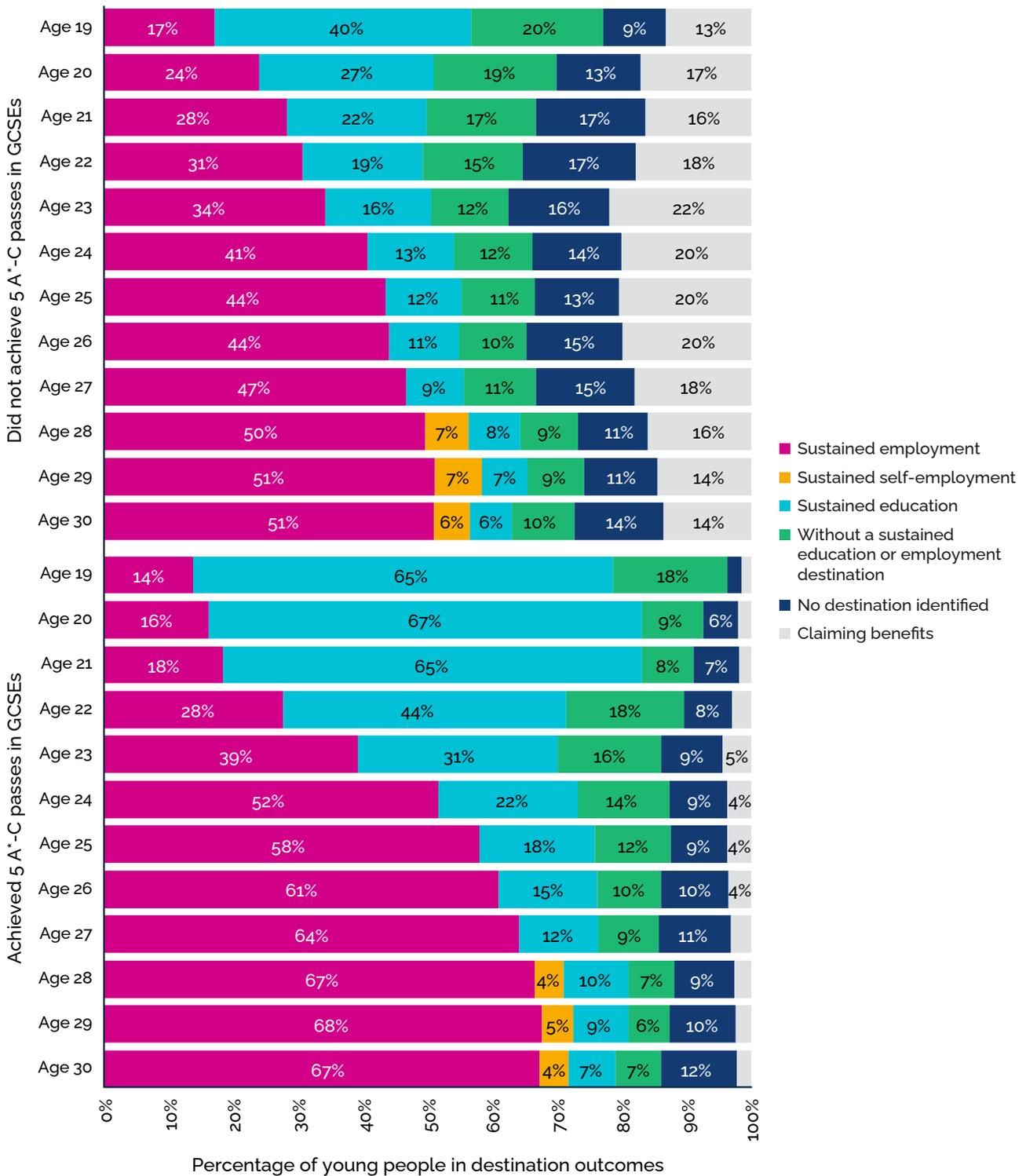
For example, during the time period we are investigating, there are significant differences in attainment between the groups of young people taking academic qualifications compared to those taking vocational qualifications. In the 2003/04 post-16 cohort, 93 per cent of young people taking academic qualifications post-16 had achieved five A\*-C grades at KS4, whilst for the group taking vocational qualifications at post-16 the proportion was only 34 per cent. Figure 7 illustrates the substantial differences in destination outcomes between the young people who did and did not achieve five A\*-C passes at KS4. It shows that, for the 2003/04 post-16 cohort, young people who achieved five A\*-C in their GCSEs were a third more likely to be in sustained employment and over five times less likely to be on benefits at age 25 compared to young people who did not achieve five A\*-C in their GCSEs.

Destination outcomes also vary significantly by a young person's socio-economic background. Figure 7 shows that young people from a disadvantaged background are significantly less likely to be in sustained employment or education at all ages. For example, at age 25, 40 per cent of disadvantaged young people in the 2003/04 post-16 cohort were in sustained employment and 24 per cent were in receipt of benefits, compared to 55 and eight per cent of non-disadvantaged young people, respectively.

As shown by previous analysis (Battiston *et al.*, 2019; Aucejo *et al.*, 2020), earnings also vary significantly by post-16 subject choices. For example, by age 29, young people who have undertaken at least one science or maths qualification post-16 earn over a third more on average than those who have not. Finally, the region where a young person grows up is also an important determinant of their subsequent earnings. On average, a young person who finishes their KS4 in London at age 16 earns over twice as much by age 29 than somebody based in the North East.

This highlights a potential pitfall in placing too much emphasis on simple destination measures. If a school or college wanted to improve young people's earnings outcomes, they could place a greater emphasis on maths and science qualifications or limit their intake to particular types of young people. Whilst this might improve destination outcomes, it would not be in the best interests of either young people or wider society. This demonstrates the importance of context when comparing the destination outcomes of young people across schools and colleges.

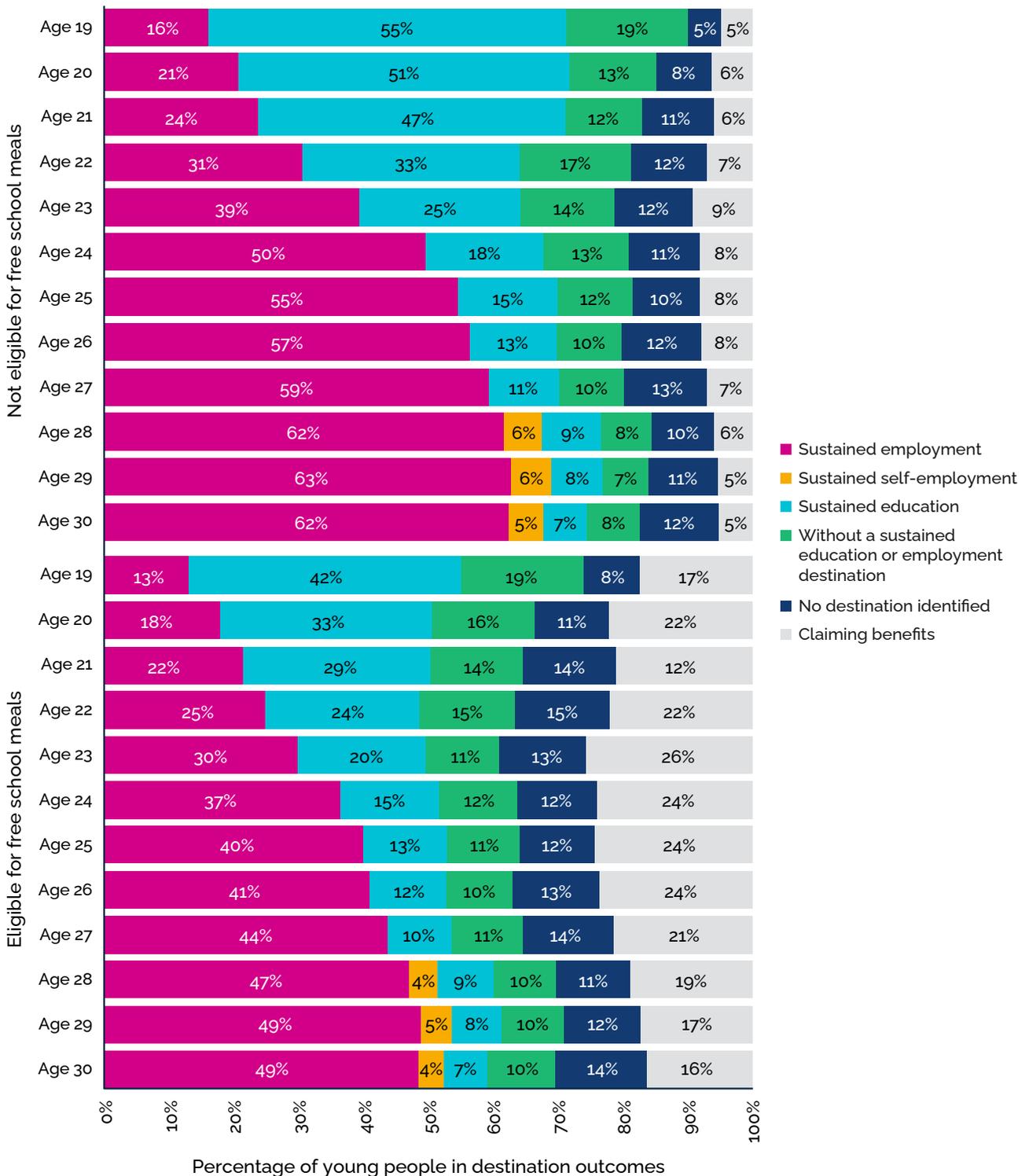
**Figure 7:** Destination outcomes up to age 30 by KS4 prior attainment, 2003/04 post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records

**Figure 8:** Destination outcomes up to age 30 by socioeconomic background, 2003/04 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 with non-missing KS4 attainment records

## 3 Measuring the value-added of post-16 schools and colleges

### Summary

- Most young people study their post-16 qualifications at either a school or general FE college. Schools tend to be smaller and have fewer young people with low prior attainment or from a disadvantaged background compared to general FE colleges.
- Destination outcomes differ significantly by post-16 institution type. However, these differences can largely be accounted for by the differences in the qualifications undertaken by young people who attend schools and FE colleges.
- Young people who attend a general FE college have lower earnings on average in their late 20s compared to a school once regional, cohort and qualification characteristics are accounted for. However, there is considerable variation within institution types.
- Our analysis finds that the school or college where a young person studies their main post-16 qualification only accounts for a small proportion of the variation in their earnings and employment outcomes.
- There is less variation in employment outcomes (e.g. proportion of cohort in work) compared to earnings outcomes across schools and colleges, particularly as young people get older. However, earnings measures need to be interpreted with care as they vary across regions, and subject areas.
- This analysis is focused on the cohort starting their 16-18 qualifications in 2003/04.

This section explores the association between the institution where a young person studies their main post-16 qualification and their destination outcomes. It looks at where young people study their main post-16 qualification, the implications of where young people study on their destination outcomes and identifies which characteristics (from those available in our data set) are associated with an institution having better destination outcomes.

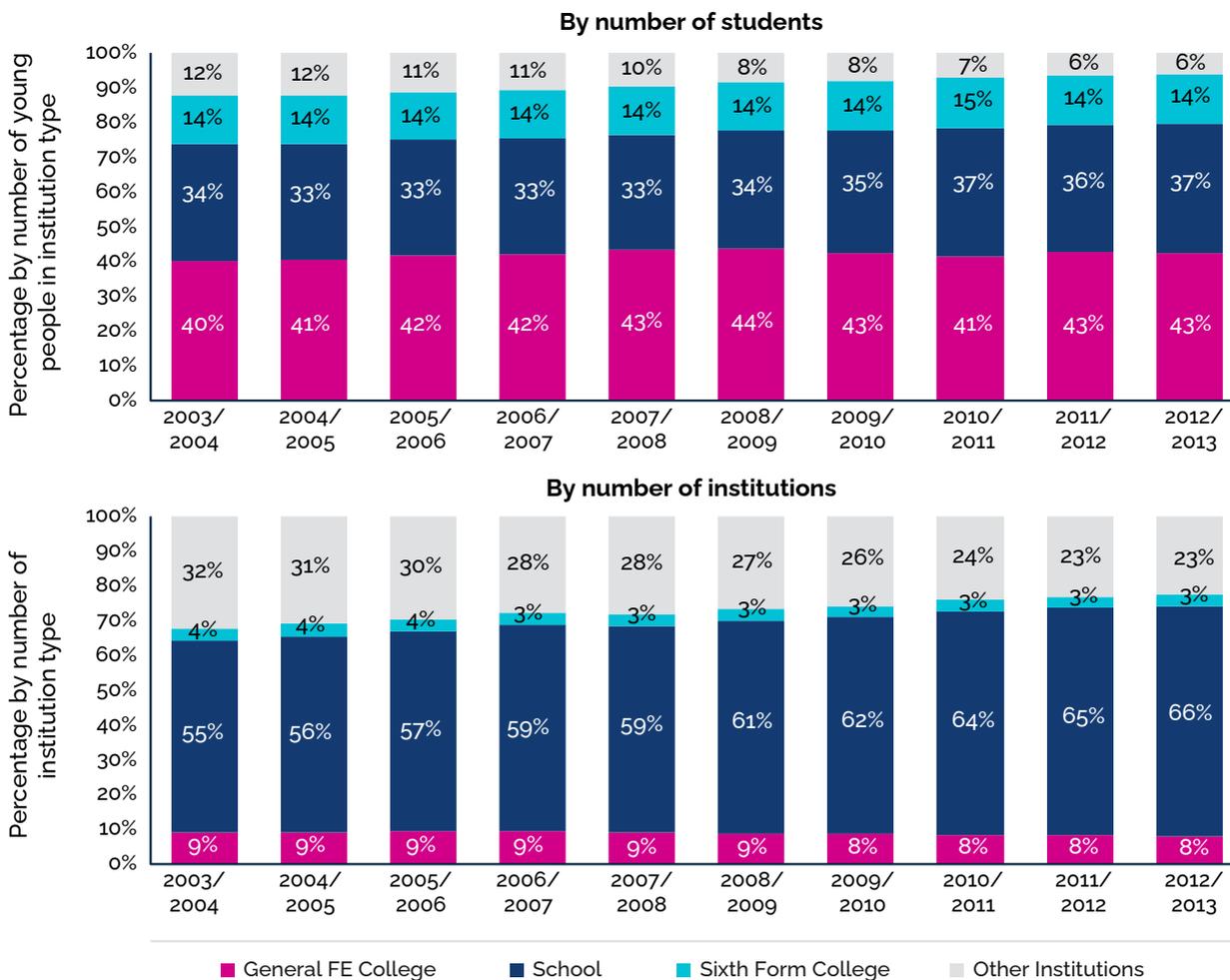
The purpose of constructing a value-added measure is both to consider their value as a measure in themselves and to establish the value of considering the appropriateness of considering other destination measures.

### 3.1 Where do young people study post-16 qualifications?

Young people who study post-16 qualifications have a number of different options for where to study. Figure 9 shows that most young people study in either schools or general FE colleges<sup>10</sup>.

For the cohort of young people starting their post-16 qualifications in 2003/04, around two-fifths of all young people were in general FE colleges. However, FE colleges only made up less than a tenth of all post-16 providers. In other words, a large proportion of young people study in a relatively small number of general FE colleges, which on average accommodate larger cohorts of young people.

**Figure 9:** Types of institutions offering post-16 qualifications, by post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 and in a mainstream institution for their post-16 qualifications with at least one completed post-16 qualification.

<sup>10</sup> Tertiary and land-based colleges have also been included in the general FE college category.

In comparison, over a third of young people in the 2003/04 post-16 cohort studied their main post-16 qualification in a school, with schools making up the majority (55 per cent) of all post-16 providers. A further 14 per cent of young people were studying in sixth form colleges, and 12 per cent studied their main post-16 qualification at other types of post-16 institution. This includes private providers, employers, universities, and other forms of provision (see Hupkau and Ventura, 2017 for a comprehensive overview of the English FE institutional landscape).

Aside from differences in size, there are considerable differences in the qualifications that are undertaken across the different types of institutions. FE colleges offer a wide range of both academic and vocational qualifications. For example, for the 2003/04 post-16 cohort, among the young people who did their main qualification in a general FE college, six per cent of young people were doing academic qualifications, 59 per cent of young people were doing vocational qualifications, 20 per cent were doing both academic and vocational qualifications and 15 per cent were studying below Level 2 qualifications. In comparison, the vast majority of young people at schools and sixth form colleges were doing at least one Level 3 academic qualification. These differences are reflected in the substantial differences in funding requirements, teaching qualification requirements and pupil characteristics across different institutions.

## 3.2 How do destination outcomes vary by post-16 institution type?

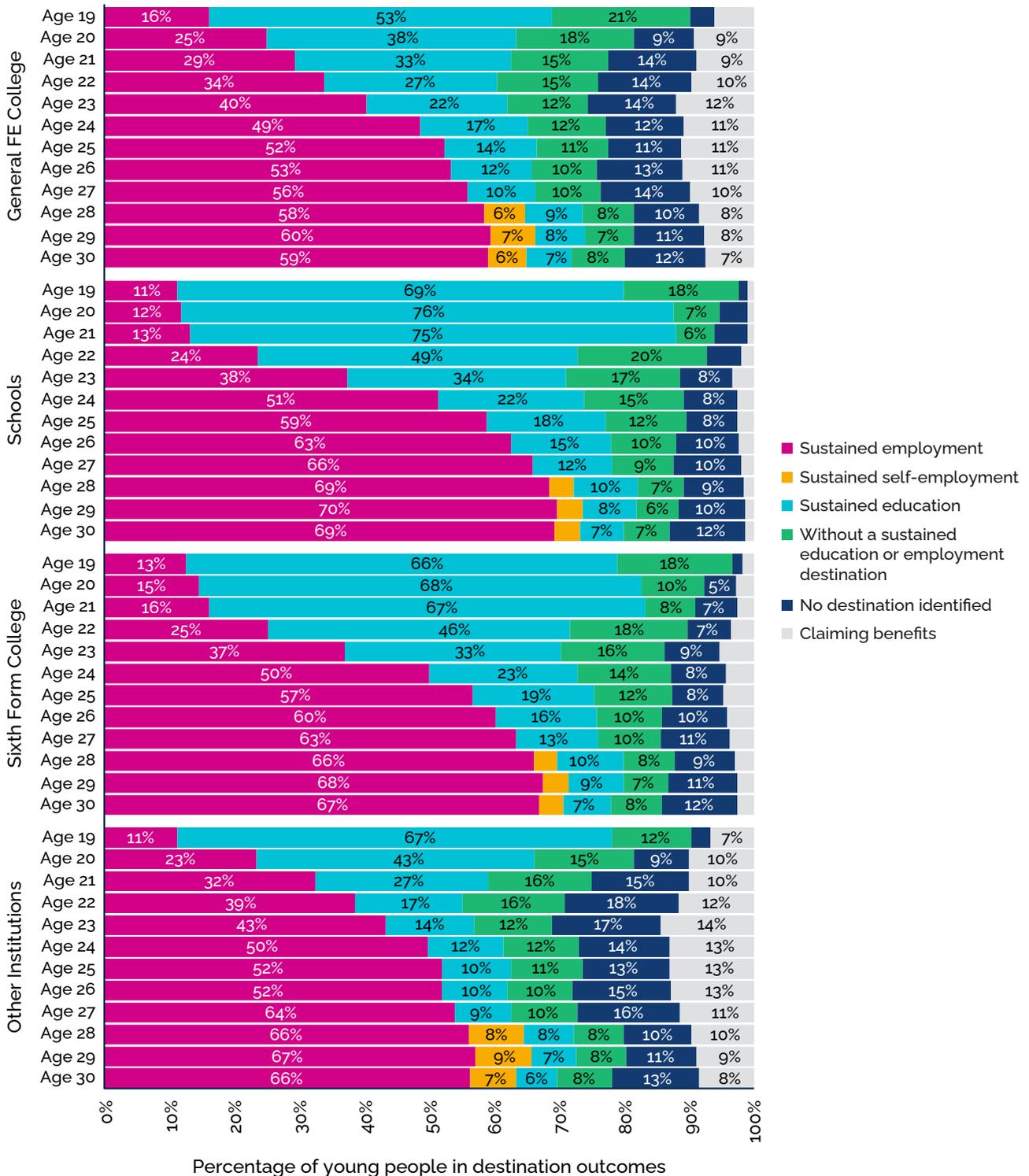
Figure 10 shows that destination outcomes differ significantly by post-16 institution. Up until age 25, young people who attended general FE colleges for their post-16 qualifications are more likely to be in sustained employment than young people who attended schools or sixth forms, who are more likely to be in sustained education in their early twenties. After age 25, schools and sixth forms have a greater proportion of young people in sustained employment compared to general FE colleges. At all ages, young people who attended general FE colleges are more likely to be on benefits than young people from schools or sixth forms. In comparison, young people who were not identified as having a main qualification completed between 16-18 were less likely to be in education or employment at all ages.

These outcomes largely reflect the differences in pupil characteristics and qualification choices between schools, sixth form colleges and general FE colleges. Young people who attend schools and sixth forms are much more likely to study academic qualifications (as outlined in section 3.1), and they also tend to have much higher prior attainment than those who attend general FE colleges. For example, in the 2003/04 post-16 cohort, 92 per cent of young people undertaking qualifications in schools or colleges achieved five A\*-C grades at KS4, compared to 39 per cent of young people in general FE colleges. Similarly, young people who study at general FE colleges are much more likely to be from a disadvantaged background<sup>11</sup> compared to those who study at a school or college.

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<sup>11</sup> As measured by both eligibility for free school meals and geographical disadvantage measured by the Income Deprivation Affecting Children (IDACI) index.

**Figure 10:** Destination outcomes up to age 30 by post-16 institution type, 2003/04 post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 and in a mainstream institution for their post-16 qualifications with non-missing KS4 attainment records and at least one completed post-16 qualification

This highlights the importance of taking these factors into account in interpreting destination measures. Comparing outcomes across similar types of institutions would address this to some degree, although would not enable comparisons of labour market outcomes for otherwise similar students taking the same courses in different types of institution where there are differences in intakes across institutions. There have been significant changes in post-16 education since 2003/04, including the increase in the participation age to 18, a raft of reforms to apprenticeships and the introduction of new T-Level qualifications. In turn, the intake of students to different types of institution may be quite varied, and these differences should be taken into account when making comparisons.

Similarly, there is an earnings differential between young people attending general FE colleges compared to schools or sixth form colleges<sup>12</sup>. Figure 11 presents the share of young people in each earnings quintile at the age of 22, 26 and 29 by post-16 institution type. If the distribution of earnings across all institution types was even, then we would expect there to be an even distribution of young people across each earnings quintile (e.g., 20 per cent of young people would be in each quintile in each institution). Where there are more (less) than 20 per cent of young people from a given institution type in a quintile, then that earnings quintile is over (under) represented among young people from that institution type.

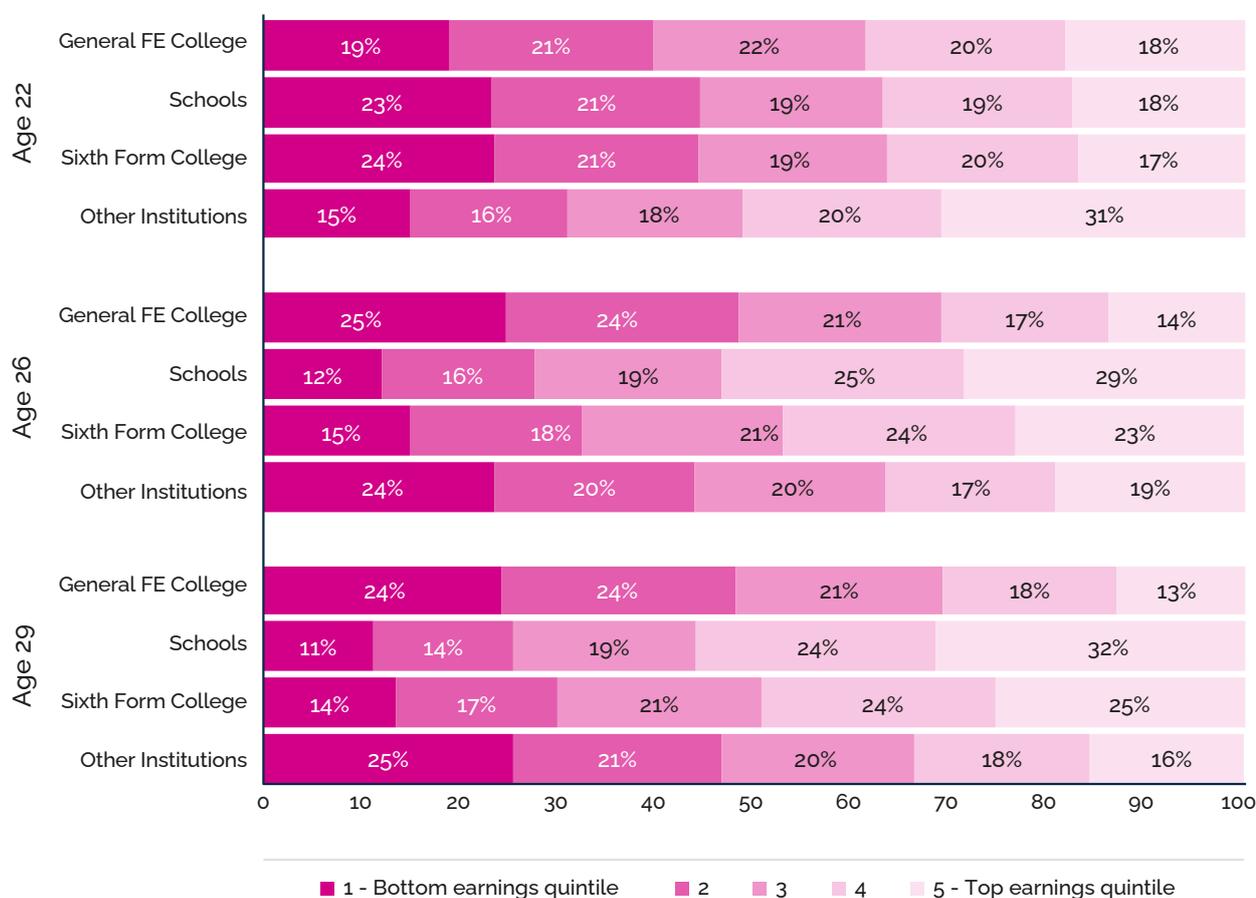
At age 22, the figure shows that young people who attend schools are under-represented in the top earnings quintile, and young people attending other types of institutions are overrepresented<sup>13</sup>. However, at ages 26 and 29, young people from schools become increasingly overrepresented in the top earnings quintile, and young people who attend general FE colleges become increasingly under-represented in the top earning quintile. This result is consistent with the findings presented in section 2.2.2 that young people from academic routes tend to have higher earnings compared to those undertaking vocational routes from their mid-20s onwards.

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<sup>12</sup> As highlighted in section 1.2, we are not able to observe whether an employee earns less because they work fewer hours or because they are doing a job that is less well remunerated. This means that our analysis under-estimates the earnings of part-time workers compared to full-time workers. This could affect our comparisons between institution types if individuals in certain types of institutions are systematically more likely to work part-time.

<sup>13</sup> This is driven by the fact that a large proportion of the individuals from 'other institutions' have progressed from apprenticeships at age 22.

**Figure 11:** Distribution of earnings by post-16 institution type, 2003/04 post-16 cohort



**Source:** NFER analysis of LEO data

**Note:** Analysis includes all individuals in a mainstream state-funded school in England at KS4 and in a mainstream institution for their post-16 qualifications with non-missing KS4 attainment records and at least one completed post-16 qualification

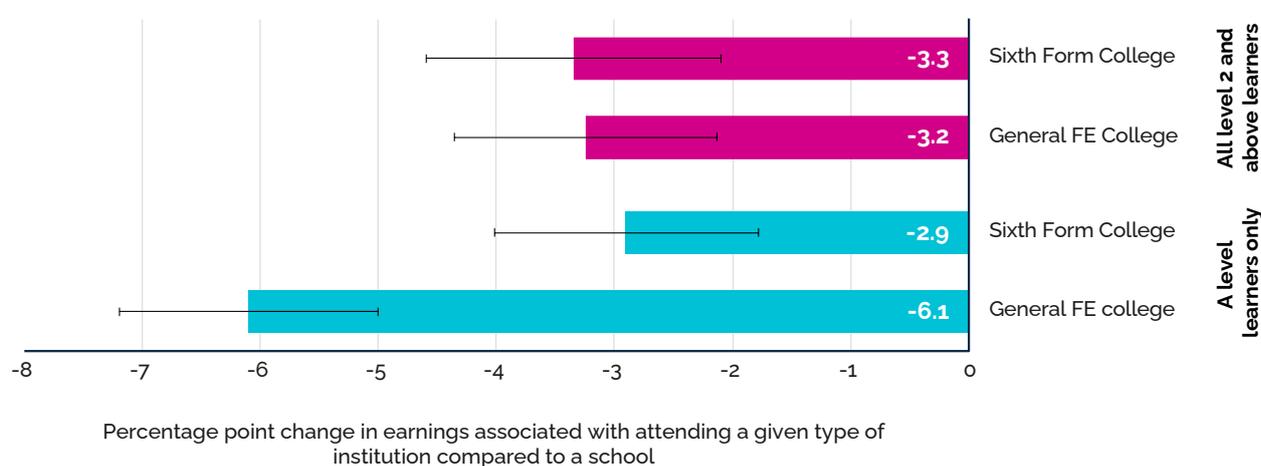
As previously noted, there are substantial differences in the types of young people who attend different types of institutions that help explain these patterns. A more appropriate way to compare across institutions is to use statistical techniques to measure the impact of attending a specific type of institution over and above geographical factors, young people’s backgrounds, qualifications, and subject choices. This includes GCSE attainment, learner region at age 16, eligibility for FSM, ethnicity, overall post-16 qualification type and subject (see section 3.1 in the accompanying technical report for further details)<sup>14</sup>.

<sup>14</sup> It is important to note that we do not account for any intermediate outcome measures, such as KS5 attainment or higher education progression, in our statistical models. This is because these are all mechanisms through which studying at different types of institutions could impact pupil outcomes.

Using these techniques, we find that attending a general FE college is associated with a small reduction in earnings compared to attending a school for both men and women<sup>15</sup>. However, observed effects are smaller for more recent cohorts, and observed effects vary considerably between cohorts<sup>16</sup>. We also find evidence to suggest that young people who attend sixth form colleges earn significantly less than those who attend schools, albeit our findings are not replicated for all sub-samples and across all cohorts<sup>17</sup>.

For example, our baseline specification, as shown by Figure 12 suggests that men who attend either a general FE college or a sixth form college earn three percent less in the post-16 2003/04 and 2004/05 cohorts on average by their late 20s compared to those individuals who attend a school, once individual, qualification-level and characteristics of KS4 institution are accounted for (see Table 3 in the accompanying technical report). Comparing only across pupils whose main qualification is A-levels, we find that the differences between general FE colleges and other types of institutions larger.

**Figure 12:** Earning differentials associated with attending a sixth form college and general FE college



**Source:** NFER analysis of LEO data

However, we do not find consistent evidence of significant differences between attending a school and general FE college of being in sustained education, employment or self-employment once we account for differences in the types of qualifications being undertaken across different types of institutions and other key characteristics (see Table 4 in the accompanying technical report).

<sup>15</sup> This effect is statistically significant.

<sup>16</sup> This finding is consistent across the 2003/04 to 2005/06 cohorts but depends on the factors which we account for and the sub-sample which we consider for the 2006/07 cohort. For the 2006/07 cohort, while attending a general FE college is consistently associated with a negative earnings return, we do not find that differences are statistically significant across all sub-samples.

<sup>17</sup> This is despite the fact that young people who attend sixth form colleges tend to have higher KS5 attainment, compared to those who attend either schools or general FE colleges.

## 3.3 To what extent can post-16 institutions explain young people's long-term labour market destinations?

This sub-section considers the extent to which analysis of destination measures can be used to identify the value, beyond qualifications, that post-16 institutions add to young people's longer-term labour market outcomes. To do so, we first analyse to what extent the variation in destination outcomes is accounted for by the main institution studied at post-16 once cohort characteristics, prior attainment and qualification are accounted for.

Unless otherwise stated, the results reported in this section focus on the average earnings of young people across the ages of 28 and 29 completing their post-16 qualifications in 2003/04 and 2004/05<sup>18</sup>.

Outcomes are analysed separately by sex, and we focus on describing estimates for men<sup>19</sup>. This is due to the fact that, as we are unable to observe part-time work in our analysis and women are more likely to work part-time (UK Parliament, 2021), our estimates for women are less robust<sup>20</sup>.

### 3.3.1 How important is where you study in determining your destination outcomes?

Our analysis in section 3.2 demonstrates that there are large differences in the average earnings and employment outcomes across post-16 schools and colleges. However, a large proportion of that variability can be explained by differences in cohort characteristics (disadvantage, prior attainment at age 16, ethnic background of learners, first language of learners and region). These characteristics account for over two-thirds of the variation in average earnings outcomes across institutions, and are all important predictors of longer-term labour market success<sup>21</sup>. Comparing outcomes across institutions without accounting for these differences would be misleading.

To explore this further, we constructed value-added measures for schools and colleges. Our main objective is to identify the impact of studying at a specific type of school or college on later life earnings or future employment status, over and above the potential outcome from going to an alternative (but realistic for a young person with such characteristics) institution. Our analysis uses a two-stage fixed effects model<sup>22</sup>, following Aucejo *et al.* 2020, which measures the difference in outcomes associated with attending a specific institution once detailed learner characteristics and qualification characteristics (level, type and subject) are accounted for. In other words, our analysis measures the differences in outcomes for a young person associated with attending a given institution, compared to the outcomes of similar individuals who attend different institutions. Further detail can be found in section 3.2 of the accompanying technical report.

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<sup>18</sup> Outcomes are averaged across the 2003/04 and 2004/05 cohorts to increase the power of our analysis. We focus mainly on reporting outcomes for men as our estimates for women are more likely to suffer from bias. This is because, as highlighted in section 1.2, our analysis under-estimates the earnings of part-time workers compared to full-time workers, which is more likely to affect our estimates for women than for men.

<sup>19</sup> Estimates for women are still reported in footnotes and in the technical report.

<sup>20</sup> In particular, our estimates for women will tend to underestimate the value-added associated with institutions where women are more likely to choose to work part-time.

<sup>21</sup> The share for our male and female estimations is 69 per cent and 84 per cent respectively. However, the result for females should be treated with caution for the reasons flagged in footnote 18.

<sup>22</sup> The rationale for using a two-stage fixed effects model was twofold. First, a two-stage model will tend to underestimate institutional value-added, while a one-stage model will tend to overestimate it. Second, it was computationally less intensive given the large number of institutional fixed-effects.

We find that the institution where a young person studies their post-16 qualification is associated with a small but not insignificant role in explaining their earnings and employment outcomes.

Once cohort characteristics, prior attainment and qualification characteristics (subject, type and level) are accounted for, a one standard deviation increase in institutional value-added at post-16 is associated with a 4.4 per cent increase in average earnings for a young man by their late 20s and a 1.8 percentage point increase in their probability of being in education, employment, or self-employment<sup>23</sup> (or in their *activity* rate). In other words, on average, we find that an individual attending a school or college in the top quarter of institutions (in terms of value-added) is earning over a thousand pounds more by their late 20s compared to a similar individual studying their post-16 qualification in the bottom quarter of institutions.

The fact that there are larger differences in institutional value-added in earnings compared to activity suggests that average earnings may be a better differentiator across institutions compared to activity by the time a young person reaches their later 20s. It remains the case, as demonstrated in section 2.3, that wider contextual factors, including subject, need to be taken into account in comparing earnings across institutions, as these have a much stronger association with earnings than the institution alone.

It is also important to note that our analysis uses data from a period where there was much less emphasis on schools and colleges preparing young people for the labour market compared to today. We may see more differentiation between schools and colleges in the labour market outcomes of the cohorts of young people who are currently progressing through the education system, albeit this depends on the extent there are differences in the extent to which different schools and colleges place a greater weight on destination measures.

As part of our sensitivity checks, we also constructed value-added estimates of earnings and employment outcomes at earlier ages. We find that our value-added estimates become increasingly stable as cohorts get older. This confirms that our value-added estimates are not simply measuring "random" noise, and suggests that it is preferable to use older age groups when constructing institutional value-added measures.

#### 3.3.2 To what extent are value-added estimates mediated by young people's progression trajectories post-18?

There are a range of mechanisms through which post-16 institutions can support young people to have better destinations. These include helping them to attain better grades in their qualifications, assisting their progress onto higher or further education, and supporting them to progress onto a better quality employer who provides additional support or training.

Our main value-added estimates capture the value associated with studying at a given institution associated with all of these mechanisms. As such, an institution could have higher value-added for a large number of reasons.

Given these mechanisms are of interest in their own right, we also investigate to what extent different progression pathways explain the variation in our value-added estimates across institutions. This analysis is focused on earnings rather than employment value-added, given the greater differentiation across institutions in earnings outcomes compared to employment outcomes.

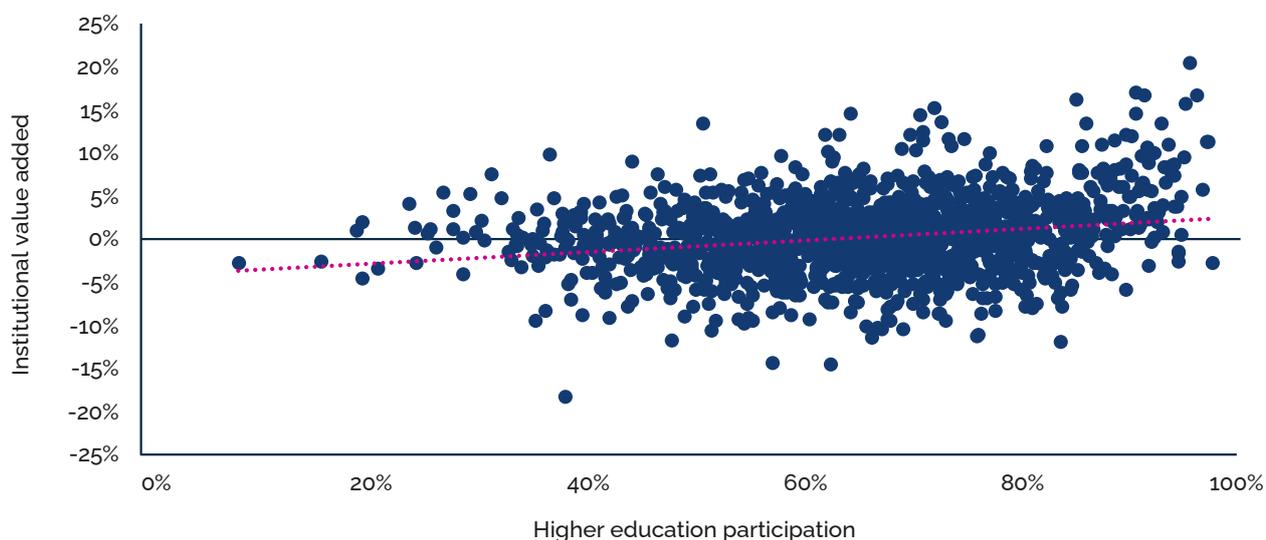
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<sup>23</sup> The equivalent estimates for women at 4.3 per cent and 1.7 percentage points respectively.

We find that around a tenth of the variation in value-added outcomes across schools and colleges in male outcomes is explained by progression onto higher education<sup>24</sup> (see Table 7 in the accompanying technical report). Our analysis shows that the type of university which a school or college's pupils move on to is an important mediator for this effect, where university type is measured by UCAS tariff entry requirements or university alliances (such as the Russell Group and Million Plus). We also find that institutions whose pupils achieve higher KS5 point scores are associated with having higher value-added, with around five per cent of the variation in value-added scores accounted for by differences in attainment across schools or colleges (although some of this impact will be driven by pupils progressing onto higher education).

This demonstrates that supporting pupils to access better outcomes and to progress onto higher education are important ways in which institutions can support destination outcomes. However, these are by no means the only ways in which schools and colleges can support young people to achieve better destinations. It also shows that there is a need to consider a wider set of destination measures beyond higher education participation which, as shown by Figure 13, is only weakly associated with higher institutional value-added.

**Figure 13:** Relationship between institutional value-added and higher education participation, by institution



**Source:** NFER analysis of LEO data

**Note:** Higher education participation is defined by whether a young person is identified as participating in higher education at any point between the ages of 18 and 21.

<sup>24</sup> The comparable estimate for female learners is lower at seven per cent. This is further evidenced by the fact that if we account for higher education participation (including higher education institution type, subject and degree class) in the construction of our estimates for institutional value-added then we find that a one standard deviation increase in associated with a 4.2 per cent increase in average earnings for men. This demonstrates that our value-added estimates are not simply being mediated by differences in higher education participation across institutions.

### 3.3.3 What school and college characteristics are associated with institutions having higher value-added?

Table 1 below presents the extent to which different school and college characteristics are associated with differences in value-added across institutions (see section 3.2 of the accompanying technical report). It is important to note that, as learner-level characteristics (e.g. region, prior attainment) are accounted for in the construction of our value-added estimates, this analysis only considers institutional characteristics which could not be accounted for at that level. It should be noted that institutional-level characteristics are based on those recorded in the LEO dataset for their 16-18 cohorts which are included in the analysis, rather than the full cohort in each institution.

**Table 1:** Association between institutional value-added (based on earnings) and other factors

Characteristic of 16-18 analysis cohort	Schools and sixth forms	General FE colleges
A larger share of disadvantaged students	Associated with lower value-added	Associated with lower value-added
Higher share of young people with English as an additional language	Associated with higher value-added	Not associated
Higher average KS4 score of the intake	Associated with higher value-added	Associated with lower value-added
Higher Ofsted rating	Associated with higher value-added	Not associated
Higher average KS5 attainment	Associated with higher value-added	Not associated
Grammar school	Associated with higher value-added	-
Religious school	Associated with higher value-added	-

**Source:** NFER analysis of LEO data

We find that schools and sixth form colleges with greater concentrations of disadvantaged young people tend to have lower value-added, while those with greater concentrations of young people with English as an additional language tend to have higher value-added. This is consistent with the large literature that has shown that a young person's peers play an important role in their outcomes (e.g. Lavy *et al.*, 2012). It suggests that there is a need for interventions to be targeted towards both disadvantaged young people and towards institutions with higher concentrations of disadvantage. For general FE colleges, we also find that colleges with more disadvantaged young people tend to have lower value-added. However, we do not observe the same association with the proportion of pupils who have English as an additional language<sup>26</sup>. This may be explained by the fact that FE colleges tend to have more heterogeneous students, compared to schools and sixth-forms.

<sup>25</sup> For example, region of institution is accounted for in our estimates.

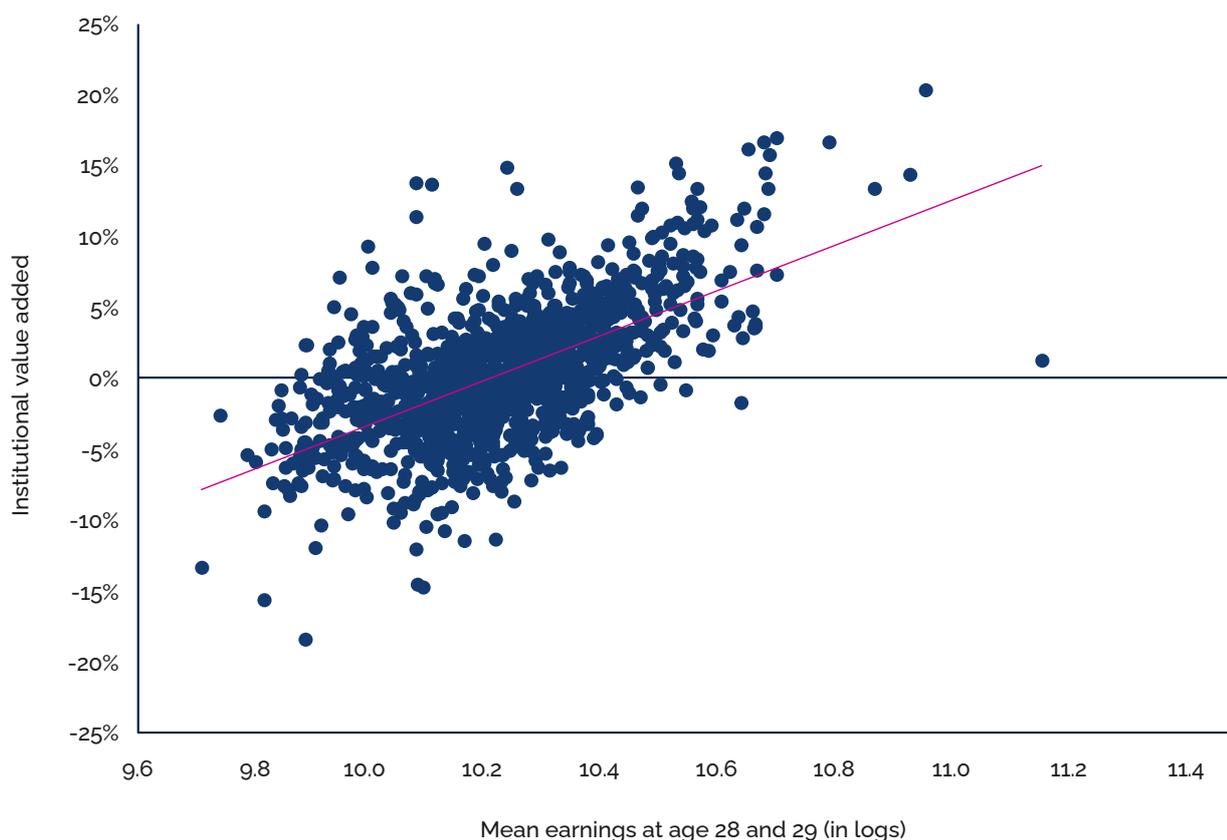
We also find that within schools and sixth form colleges, Ofsted ratings, KS5 attainment and attending a grammar school are significantly associated with higher value-added in terms of earnings. For general FE colleges, we do not find any evidence that Ofsted rating and KS5 attainment are associated with higher institutional value-added. This is in line with the findings of Aucejo *et al.* (2020)<sup>27</sup>.

### 3.3.4 How do average earnings relate to institutional value-added?

In practice, average earnings at the institution-level are much easier to construct than institutional value-added measures. However, how closely do these measures relate? Figure 14 presents a scatter plot of average earnings and value-added at the institution-level (based on earnings). We find that there is some association between average earnings and institutional value-added, however there is still substantial variation around the trend line (correlation of 0.6).

This shows that naively comparing earnings estimates across institutions would be misleading. Nevertheless, this does not mean that making comparisons in averages across institutions with similar intakes would not be meaningful, as this takes into account some of the differences captured by value-added.

**Figure 14:** Relationship between institutional value-added and mean earnings at age 28 and 29, by institution



**Source:** NFER analysis of LEO data

<sup>26</sup> We do, however, observe a counterintuitive result that higher KS4 attainment is associated with worse outcomes. We conjecture that this may be because our cohort proxies are not good proxies for the overall cohort characteristics.

<sup>27</sup> It is worth noting that Aucejo *et al.*, 2020 have a more detailed set of controls available for their analysis and show that number of learning hours and study intensity are significantly associated with higher institutional value-added in general FE colleges.

#### 3.4 Comparison with the value-added of schools at KS4

The above section considered the association between where a young person studied their main post-16 qualification and their destination outcomes. This section explores how far the conclusions for the previous sub-sections can be extended to the institution where a young person studied their main KS4 qualifications.

Repeating our analysis presented in section 3.3, we find that a small but statistically significant amount of the variation in earnings and employment destinations by age 28 and 29 can be accounted for by the institution where an individual studied their main KS4 qualification.

A one standard deviation increase in KS4 institutional quality (where quality is measured by our estimated value-added) is associated with male learners earning 4.7 per cent more by their late 20s and having a two-percentage point higher likelihood of being in sustained employment, self-employment, or education. On average, there is a similar amount of variation across the institutions where young people study their main KS4 qualifications, compared to where they study their main post-16 qualification. This highlights the extent to which attainment at GCSE influences later outcomes.

Higher value-added at KS4 is associated with schools having higher Ofsted ratings, higher KS4 attainment, higher progression onto higher education and being a grammar school. It confirms that a range of measures should be used to gather insights on how schools might be preparing young people for their long-term outcomes.

#### 3.5 How could schools and colleges be using destination measures?

Although destination measures only become available after a time delay and cannot be used to judge the "quality" of an institution (and should not be used in that way<sup>28</sup>), our estimates for post-16 school and college value-added suggest that destination measures have the potential to provide post-16 institutions with additional insights of their contribution over and above the information provided by existing attainment measures and Ofsted inspections. Further, our analysis shows that there is no single destination measure that schools and colleges should be focusing on. Instead, a range of measures should be used. We find that value-added measures do provide additional insights to average measures. However, given that there are costs associated with constructing value-added measures and that ideally a range of measures would be used, a practical alternative is for schools and colleges to compare their destination outcomes with institutions that have similar intakes, as this would take into account some of the differences in context which are captured by value-added measures.

In general, activity measures (such as whether cohorts progress into sustained education or employment) provide more information about pupils' ultimate outcomes than earnings measures until young people have reached their mid-20s. After this point, earnings measures start to be more useful for differentiating across institutions than activity measures – as there are much greater differences across institutions in average earnings than in activity. Further, as activity and earnings outcomes change as young people progress through the labour market, there is also need to track these at different points in time.

The claiming of benefits may also be relevant destination measures for schools and colleges, particularly those serving more disadvantaged or lower attaining cohorts of young people who face greater barriers to entering the labour market. These measures also have the potential to target interventions towards future cohorts who are at the greatest risk of becoming unemployed.

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<sup>28</sup> For example, if these measures were used to hold institutions to account, they might increase the incentives on institutions to select for young people with a higher likelihood of achieving better destination outcomes.

Across all measures, it is key that destination outcomes are interpreted within the particular circumstances and context of each school or college. Where possible, schools and colleges should focus on making comparisons across institutions with similar intakes, learners taking similar qualifications and previous cohorts from the same institution where they are comparable in order to make meaningful assessments of their value-added.

While our analysis shows that destination measures have the potential to provide schools and colleges with novel insights and information (without needing to construct value-added measures), there is still more to be done in understanding how destination measures might be used by school and college leaders in practice, and in ensuring that post-16 institutions are provided with this information in a readily interpretable and constructive way. As part of this research, we have constructed institution-level mini reports to support schools and colleges in accessing and understanding their own destination measures. An exemplar version can be found in the Appendix to this report.

It is, nevertheless, important to recognise that there are many potential pitfalls which might arise from using destination measures in the wrong way. Given that there are many factors other than institution which might affect a young person's ultimate destination, placing too much weight on destination measures could lead to schools being held "account" for things outside their control. As outlined by Dearden and Vignoles (2011), this risks creating perverse incentives for schools to be more selective in the pupils they enrol.

## 4 Conclusions and recommendations

Schools and colleges act as an important stepping-stone along young people's journeys into the labour market. In turn, there are many ways in which the school or college where a young person attends might influence their destination outcomes from quality of teaching, to their ability to motivate pupils and to the wider support which they provide their pupils to progress onto a successful destination.

In turn, there may be scope for some schools and colleges to do more to provide young people with additional support to achieve better destination outcomes. For example, the quality of careers guidance and support across schools and colleges remains variable (Parker, 2021). This is despite the national rollout of the Gatsby Benchmarks (Hanson *et al.*, 2021), which set out a framework for high quality careers guidance and support, and the introduction of the Baker Clause in 2017. The latter stipulated that schools have to provide their young people with guidance and support about technical and vocational routes. However, there is currently no enforcement of the clause (Whieldon, 2021).

While the Government have taken significant strides in developing destination measures in recent years (i.e. publishing longer-term destination measures for KS4 qualifications), there is still a lack of readily available and interpretable data on long-term destination measures (measured more than a year after qualification completion). This is despite the fact that destination measures have the potential to help schools and colleges demonstrate the value they are having on young people's outcomes, and on supporting the mobility of young people from disadvantaged backgrounds. These measures could also equip schools and colleges with the information required to inform and evaluate how they can best prepare young people for longer-term success, over and above helping them to succeed in their qualifications.

Our analysis demonstrates that a large amount of the variation in destination outcomes can be accounted for by the characteristics of young people before they start their post-16 qualifications (e.g. prior attainment, socio-economic status, ethnic background and region). In turn, it is important to recognise that a comprehensive and holistic approach to improving young people's outcomes is needed, particularly for those from disadvantaged backgrounds. This will not only involve targeting the appropriate support throughout education, but also through assisting their families, communities, wider local authority services and local employment opportunities.

Nevertheless, our analysis also shows that the institutions where people study their post-16 qualifications have a role to play in supporting young people to achieve good destination outcomes. While there are challenges and pitfalls associated with using destination measures, these measures could be used, as part of a wider set of measures, to provide schools and colleges with information to celebrate success, inform approaches and develop targeted support. However, context is crucial and destination measures of schools and colleges need to be considered as far as possible within the context of their cohorts, the regions they are located (as employment opportunities vary by area), and the qualifications which they are offering.

Potential extensions to the LEO dataset, and recently introduced information about geographical mobility have the potential to provide schools and colleges with increasingly nuanced and detailed information about their cohorts' progression pathways. However, there is still more to be done in making long-term destination information available to school and college leaders, and understanding how useful destination measures can be for school and college leaders in practice.

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# Appendix: Example institution-level report



## Exploring the destination measures of your institution

Institution name: Example

NFER Analysis ID: - / URN: - / UKPRN: -

Institution type: School

### Overview

The Edge Foundation, in partnership with the National Foundation for Educational Research (NFER), has recently published a report which explores the potential for developing new longer-term destination measures which track where young people move on to a decade after leaving formal education. These new destination measures can inform future policy making and help schools and colleges support their students with their long-term career plans.

This mini-report presents short- and long-term school- and college- destination information which provide insights into how young people progress after undertaking their main post-16 qualification at your institution. School leaders can use this new information to identify potential areas for improvement and areas of strength in how their institution has historically prepared young people for their future outcomes. This mini-report might also provide a useful basis for a discussion in a senior leadership team or governors meeting around your school or college strategies (such as your Careers Education, Information, Advice and Guidance (CEIAG) strategy) which are supporting young people to flourish, not only while at school or college, but throughout their lives.

Users of this mini-report should note that there are a wider range of factors than those presented here which are likely to be important when considering the value of what young people achieve in the labour market. The data source that these measures are based on only enables us to analyse destination measures across limited economic indicators such as earnings and employment status. It is not possible to measure other factors that might be deemed important for a successful destination such as value to

society, individual fulfilment and well-being. Ideally, we would use a range of measures to assess the wider value added of schools and colleges, but this data is not currently available in a form which can be linked to individual schools and colleges.

Alongside destination measures for your institution, this mini-report also presents destination measures for institutions in England which are similar to yours. Further, given there are trade-offs associated with using destination measures at different points in time, we present a range of measures across cohorts and over time.

Please note that this mini-report is only being made available to members of your institutional group and data is not being shared publicly or with other institutional groups. Further, please note that some of the data included in this mini-report is historical and should be interpreted within that context. More up-to-date data should become available in the future as current data sources improve.

## **Data for your institution**

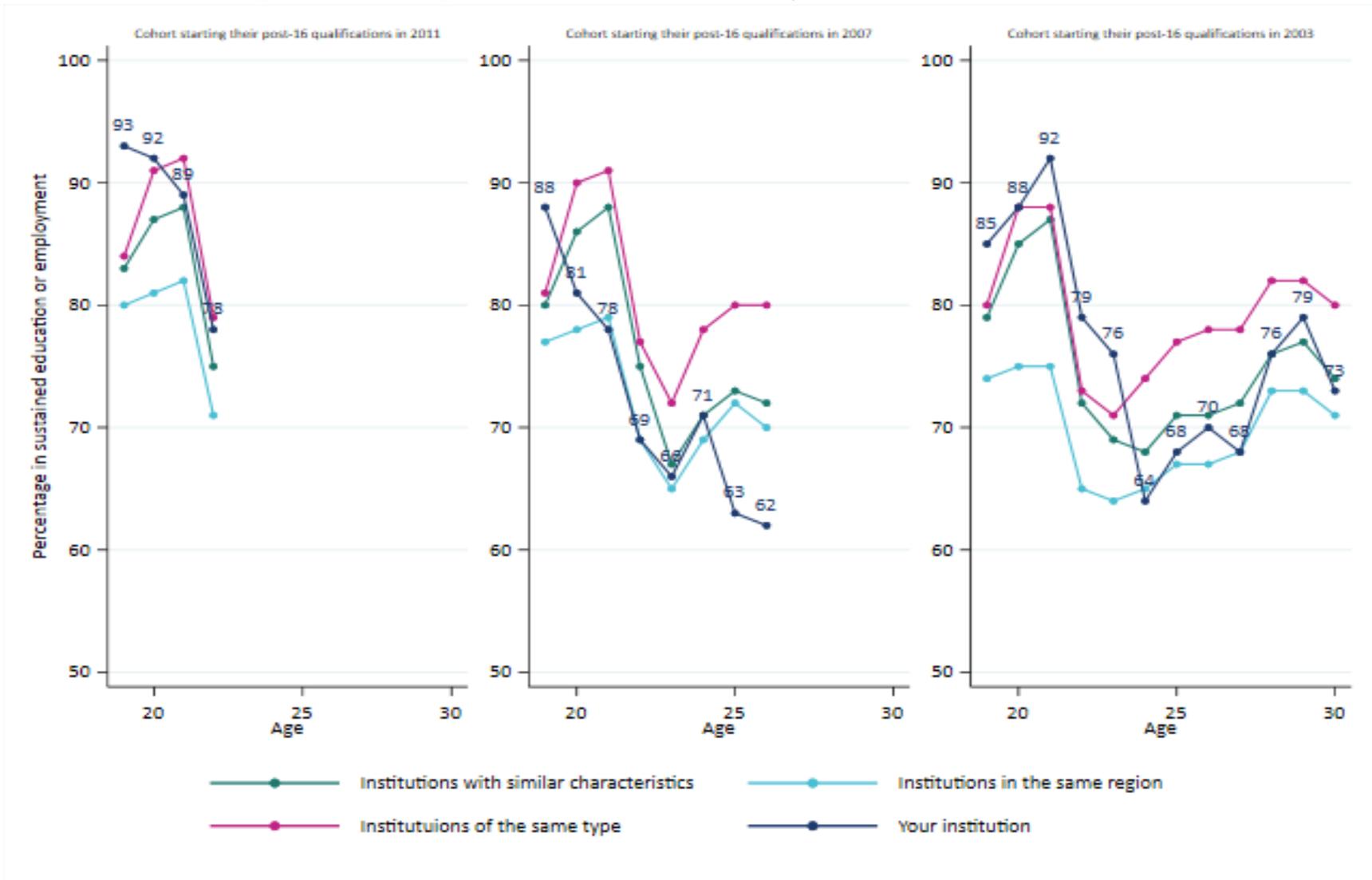
### **Long-term destination measures: Progression onto sustained employment and education**

Figure 1 presents the share of young people progressing onto sustained education or employment destinations in your institution split by age (from age 19 onwards), and across a number of cohorts who started their post-16 qualifications in different years. In order to facilitate the benchmarking of destination outcomes, Figure 1 also presents the destination outcomes of:

- (a) Institutions which are similar across a number of characteristics (which are identified through region, proportion of the pupils in the cohort eligible for free school meals and type of institution)
- (b) All institutions in the same region (e.g. London, South East, South West, etc.)
- (c) All institutions of the same type (e.g. school, sixth-form college, general FE college, etc.)

Figure 1 shows that the destination outcomes of your institution have historically been better than those of other institutions in the same region, but this pattern is less clear when comparing to institutions with similar characteristics or institutions of the same type. Figure 1 also suggests that while the destination outcomes of your institution are relatively strong at younger ages, the share of the cohort in a sustained employment or education destination declines as the cohorts age relatively more than other comparator groups. The data also shows that the destination outcomes of your institution have been improving for more recent cohorts.

Figure 1: Percentage of cohort in sustained employment or education destination



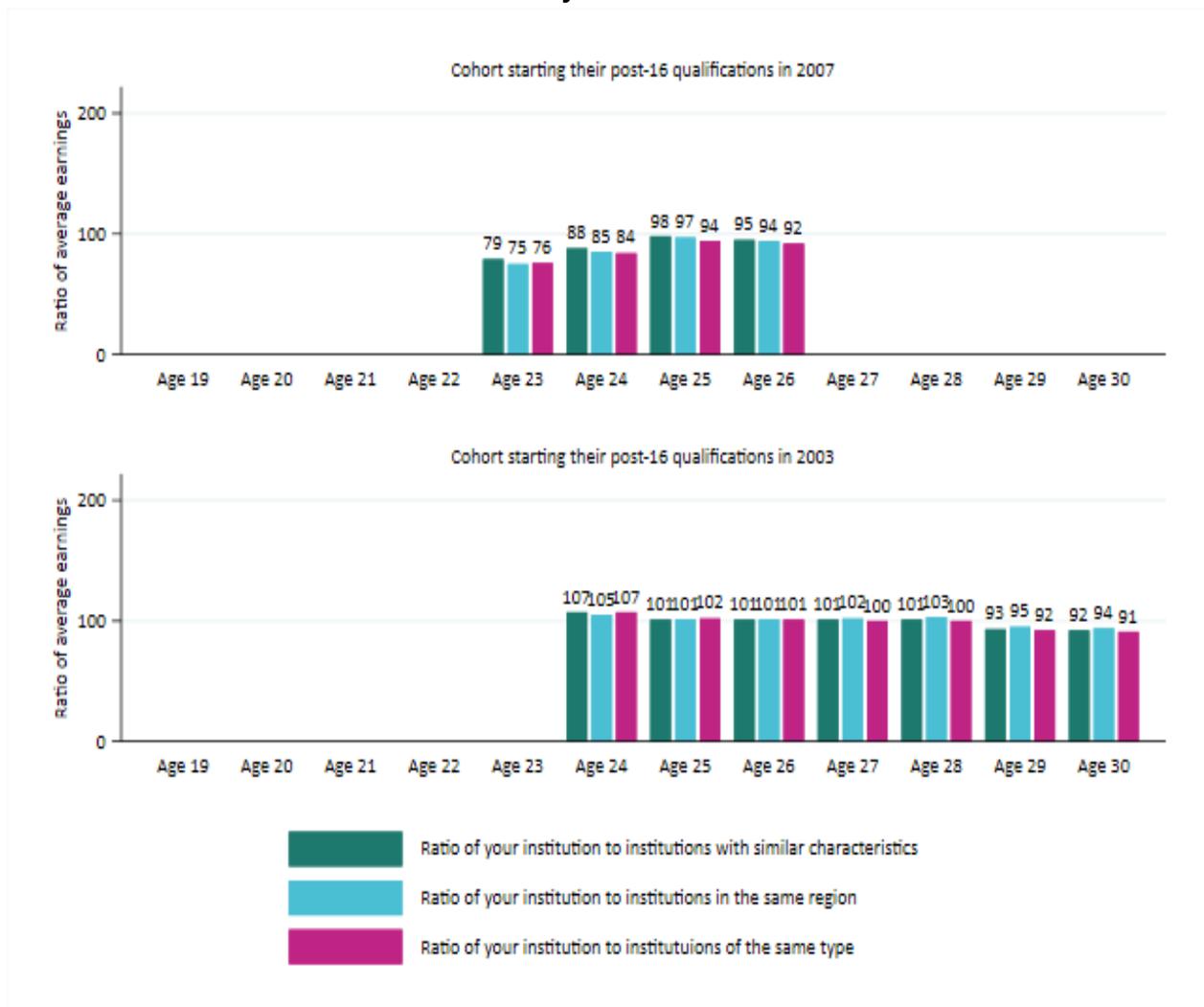
Source: NFER analysis of the Longitudinal Education Outcomes (LEO) dataset

## Long-term destination measures: Earnings

Figure 2 presents the ratio of average earnings for cohorts completing their post-16 qualifications in your institution to (a) institutions with similar characteristics, (b) institutions in the same region and (c) institutions of the same type. Where the ratio is higher than 100, young people from your institution earn more on average compared to their peers in each of the comparison groups. Where it is lower, they earn less on average compared to young people who attended other institutions in the comparison groups.

Figure 2 shows that young people who attended your institution tend to earn comparable amounts to those from other institutions.

**Figure 2: Ratio of average earnings in institution to average earnings in group, by cohort**



Source: NFER analysis of LEO data

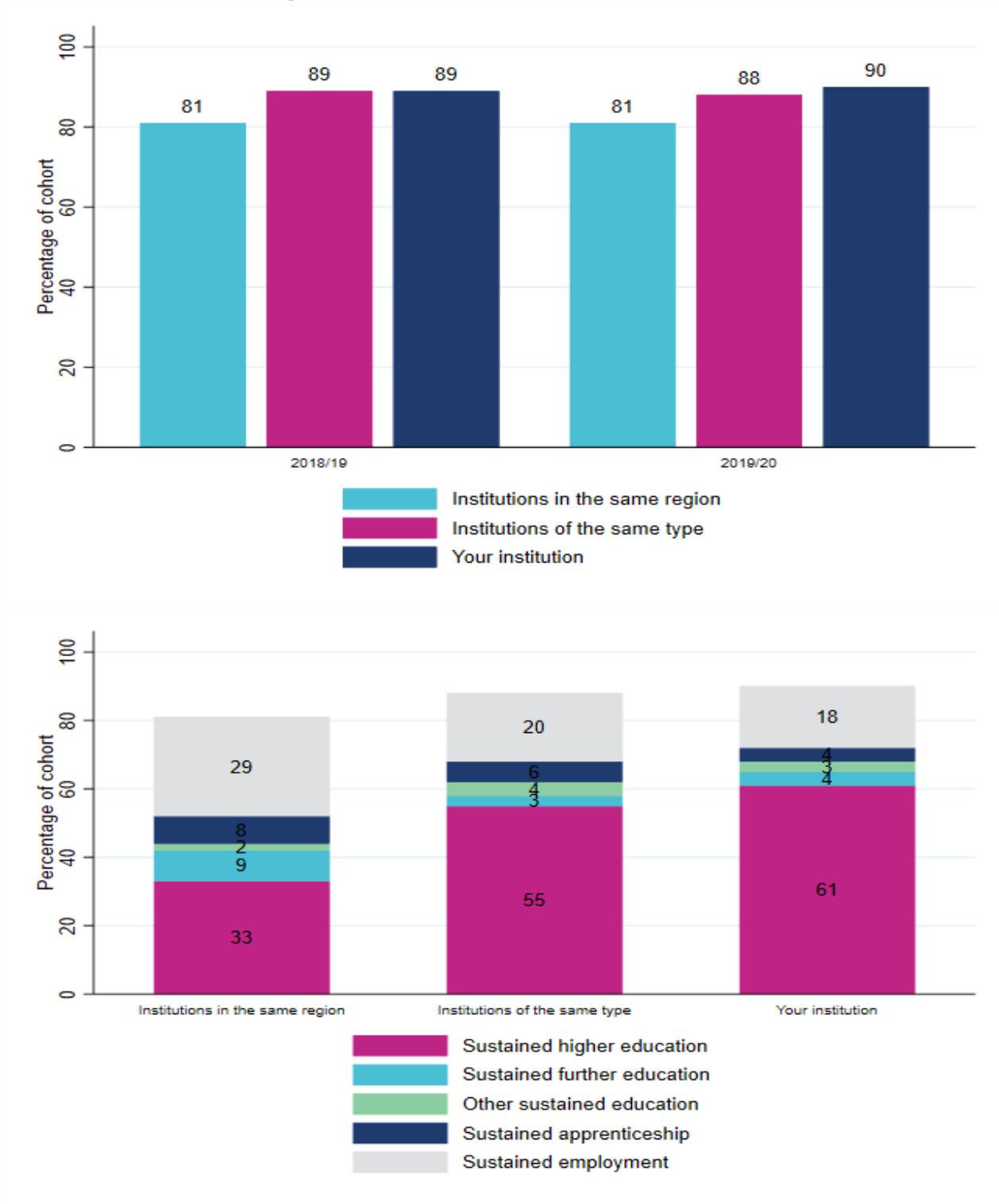
## **Short term destination measures**

For comparison to your long-term destination measures, Figure 3 below presents the sustained destination outcomes for cohorts completing their post-16 qualifications at your institution six months after completion for the latest available cohorts, compared to institutions of the same type and in the same region.

Figure 3 shows that pupils from your institution are more likely to progress onto a sustained higher education destination, compared to other institutions. Figure 3 also suggests that the share of pupils in your cohort progressing onto a sustained destination has remained stable between the 2018/19 and 2019/20 cohorts.

These shorter-term destination measures are published Department for Education and can be accessed online at this link: <https://explore-education-statistics.service.gov.uk/find-statistics/16-18-destination-measures>.

**Figure 3: Short-term destination outcomes**



Source: Department for Education Destination statistics

Note: There are a number of methodological differences between the construction of these destination measures and the longer-term destination measures presented earlier in this note.

## **Background**

One of the key purposes of education is to enable young people to gain knowledge and develop the skills and behaviours to support their progression to further study, training, and employment. This enriches the young person's experience by making education meaningful and demonstrating its relevance to their current and future life experience (Edge Foundation, 2018; OECD; 2018).

Over the last decade, there has been an increasing focus on looking at what young people move on to after they leave the education system and the vital role schools and colleges play in supporting a young person's journey towards the labour market. New destination measures have been developed and published by the Department for Education (DfE), which provide information about what young people were doing in the 12 months after leaving their post-16 school or college.

While these destination measures have been an important development, they only provide a view of what is happening in the short term, when many young people are still in a transitional state. Information about longer-term destination (destinations measured at least a year after qualification completion) outcomes could potentially provide greater insights for schools and colleges, who could potentially use them to help improve young peoples' labour market outcomes.

While long-term destination measures have recently become available for KS4 institutions from the Department for Education, these measures are not yet available for 16-18 qualifications. This mini-report presents novel long-term school- and college-destination information for 16-18 qualifications, to enable school and college leaders to gain a better understanding of the destinations of their young people.

## **Your feedback**

The Edge Foundation are looking to work with schools and colleges to identify ways in which destination measures can be best used by practitioners and identify additional resources or training required for schools and colleges to be able to maximise value from their destination measures.

If you have any feedback on this report or would be interested in working with us to better understand how schools and colleges could be using their destination measures, please contact [destinations@nfer.ac.uk](mailto:destinations@nfer.ac.uk).

## **Disclaimer**

The data presented in this mini-report is estimated by the National Foundation for Educational Research (NFER). Historical data on institutions may not be consistently collected and data processing may have amended or excluded a small amount of data.

## Notes

Our analysis uses the Longitudinal Educational Outcomes (LEO) dataset – which combines school, further and higher education information with earnings and benefits data. As the LEO dataset is drawn from administrative data, it can be used to track the labour market outcomes of whole cohorts of young people who completed their education in the English education system. This enables us to identify the association between their labour market outcomes and the post-16 schools and colleges within which they studied.

It should be noted that the LEO data does not include information on hours worked so we are not able to observe whether an employee earns less because they work fewer hours or because they are doing a job which is less-well remunerated. This means that our analysis under-estimates the earnings of part-time workers compared to full-time workers. This is a particular concern for women – who are more likely than men to work part-time as their career progresses. Further, the data analysed in this mini-report does not include self-employed workers. In turn, we may be penalising young people who are more likely to be working in sectors with high self-employment such as skilled trades or the creative industries.

All comparison groups presented are based on a comparison group of at least ten other institutions, and the size of the comparison group may vary over time. Institutions are only included where they have a minimum of 30 learners. For further details on our methodology, please refer to our research report.

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