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A comparison of commonly used socioeconomic indicators: Their relationship to educational disadvantage and relevance to teach first

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A comparison of commonly used socio-economic indicators: their relationship to educational disadvantage and relevance to Teach First

IFS Report R79

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Foreword

A comparison of commonly used socioeconomic indicators: their relationship to educational disadvantage and relevance to Teach First

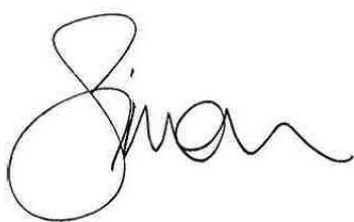
Socioeconomic measures are regularly used in official statistics to illustrate patterns of behaviour and outcomes and to support and develop policies affecting children and young people. What is not always easy to discern is the extent to which the most frequently encountered of these relate to each other (for example POLAR1, free school meals (FSM) eligibility (and variants such as FSM6), and the income deprivation affecting children index (IDACI).

Teach First currently uses the latter (IDACI) to determine which schools it should work in. However, it is currently difficult to compare data across sectors where IDACI data is not available. Equally, it is always possible that one measure becomes predominant (for example FSM) and the basis on which Teach first decides which schools to work in has to change.

In May 2012, Teach First asked the Institute for Fiscal Studies (IFS) to look at the relationships between the various popular socioeconomic measures to help the organisation gauge the extent to which it could achieve its goals if it became necessary to switch to a new indicator of deprivation. In the course of developing these 'ready reckoners', the researchers also looked at whether the socioeconomic measures were also well-related to the real issue which Teach First is working upon: tackling educational disadvantage.

The results of this excellent study have given Teach First an excellent set of tools to work with in determining which schools to work with in the future and in ways which may better reflect the disadvantages it wishes to help children and young people overcome. It also offers a view of educational rather than socioeconomic disadvantage – reflecting a lack of educational resources in the home – as a better way identifying schools to work with.

The outcomes of this work – using the measure of FSM eligibility in the past three years, a definition of disadvantage and the capacity to look across datasets based on different socioeconomic measures – will help Teach First determine where it can best deploy its expertise.



Dr Simon Gallacher

Associate Director, Data and Impact – Teach First

¹ From the Higher Education Funding Council for England - HEFCE

Preface

This work was funded by Teach First, a charity that aims to address educational disadvantage by placing high-quality graduates as teachers in disadvantaged schools in England. The focus of this report has been specifically tailored to the interests of Teach First, but it is also relevant to other charities, local authorities and government departments that seek to identify educational disadvantage in order to address it.

Data from the National Pupil Database, EduBase and the Longitudinal Study of Young People in England were kindly made available by the Department for Education. The data creators, depositors, copyright holders and funders bear no responsibility for the analysis or interpretation of the data presented here.

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Contents

	Executive summary	1
1.	Introduction	3
2.	Description of socio-economic indicators	4
3.	Relationship between socio-economic indicators at the school level	10
3.1	Correlation between socio-economic indicators at the school level	11
3.2	Crossover between the current Teach First eligibility criterion and potential alternative criteria based on other socio-economic indicators	15
4.	Socio-economic indicators and educational disadvantage	20
4.1	Creating a measure of educational disadvantage	20
4.2	Relationship between socio-economic indicators and educational disadvantage	21
5.	Conclusions	26
	Appendix A. Data	27
	Appendix B. Crossover between current and potential eligibility criteria for Teach First	29
	Appendix C. Relationship between the current socio-economic indicator used by Teach First and other commonly used indicators	33
	Appendix D. Creating a measure of educational disadvantage based on characteristics of young people and their parents observed in LSYPE	48

Executive summary

- Teach First is a charity that seeks to address educational disadvantage by placing high-quality graduates as teachers in schools with the most educationally disadvantaged pupils. There are two questions to answer when deciding the appropriate way to do this. First, how does one define educational disadvantage? Second, in the absence of observing all characteristics of a pupil that define them as educationally disadvantaged, which socio-economic indicator (or combination of indicators) best predicts whether a pupil is educationally disadvantaged?
- Teach First – and other charities and researchers with similar aims – must typically rely on indicators of socio-economic disadvantage available in administrative data in order to identify educationally disadvantaged pupils, but it is an open question as to which of the available socio-economic indicators best predict educational disadvantage and what the relationship is between them. This report addresses these important questions.
- This report first provides an overview of free and commonly used socio-economic indicators which are available from administrative data in England. It focuses on one individual measure of socio-economic status – the pupils' eligibility for free school meals (FSM) – and three neighbourhood measures: Income Deprivation Affecting Children Index (IDACI) scores (used by Teach First to define its current eligibility criterion), Index of Multiple Deprivation (IMD) scores and local area measures of higher education (HE) participation known as POLAR2.
- The relationship between commonly used socio-economic indicators at the school level is not well documented. This report presents the relationship between the socio-economic indicator currently used by Teach First to determine eligibility for its programme and the other socio-economic indicators already outlined. We find that the correlation between indicators that primarily reflect income deprivation is high, and that the correlation with indicators that reflect participation in HE tends to be lower. The crossover between all socio-economic indicators is presented in full as a 'ready-reckoner' (or look-up table) produced alongside this report.
- The current eligibility criterion for schools used by Teach First is whether at least 50% of pupils at the school live in neighbourhoods classified as being in the lowest three deciles of IDACI. Were this socio-economic indicator to be abolished (and if Teach First wished to continue to select the same type of school), it would be important to choose a new criterion where schools were classified as eligible or not eligible in a similar manner. We show that the proportion of pupils eligible for free school meals is able to almost exactly replicate Teach First's current criterion: around 90% of schools are classified in the same way (and a similar number of schools to the current number are deemed eligible) when using an alternative indicator that *at least 30% of pupils have been eligible for FSM in the past three years*.
- Finally, the report considers whether Teach First's current eligibility criterion is the best reflection of underlying educational disadvantage. We asked Teach First staff to identify the characteristics of young people and their parents that they thought best reflected educational disadvantage, and we combined these measures to create an indicator of educational disadvantage based on rich survey data available for young people in England. We then investigated which of the socio-economic indicators available in administrative data were the best predictors of this measure of educational disadvantage.

- We find that our measure of educational disadvantage is most highly correlated with whether a pupil is eligible for (or has been eligible for) free school meals. In particular, whether a pupil has been eligible for free school meals in the past three years successfully classifies a young person according to whether they are educationally disadvantaged for almost 80% of young people. Other income-based socio-economic indicators (including IDACI) perform almost as well, correctly classifying around 70% of young people. Moreover, these success rates do not improve if we account for other socio-economic indicators as well.
- These results suggest that, while the current socio-economic indicator used by Teach First is reasonably well correlated with a pupil's level of educational disadvantage, using a different socio-economic indicator based around the proportion of pupils eligible for free school meals over the past three years may slightly improve Teach First's targeting of schools with high levels of educational disadvantage.

CHAPTER 1

Introduction

Teach First is a charity that seeks to address educational disadvantage. The schools selected to receive Teach First participants are therefore presumably those where educational disadvantage is believed to be most pervasive. The current selection criterion is based on a particular socio-economic indicator, the Income Deprivation Affecting Children Index (IDACI) produced by the Department for Communities and Local Government. In the event that such an indicator were to be withdrawn or replaced, it is vital for Teach First to understand how this particular socio-economic indicator relates to other indicators that are freely available and commonly used by charities and researchers. It is also important to consider the extent to which this socio-economic indicator can successfully predict the underlying characteristic of interest to Teach First – educational disadvantage – and whether other indicators may be better suited to do this.

This report addresses these important questions. It is designed to provide a comprehensive summary of the socio-economic indicators commonly available in administrative data in England, the relationship between them, their value in predicting whether a pupil suffers from educational disadvantage and therefore their relevance to Teach First.

Chapter 2 outlines the socio-economic indicators that are freely available and commonly used by charities and researchers relying on administrative data in England, and documents their advantages, disadvantages and relevance to Teach First.

Chapter 3 focuses on school-level measures of socio-economic indicators, using data from the National Pupil Database (NPD) combined with socio-economic indicators drawn from wider administrative sources. We document the correlation between these socio-economic indicators, and consider in detail the correspondence between Teach First's chosen selection criterion for eligible schools and other socio-economic indicators (or combinations of indicators). In particular, the best 'replacement' indicator (should IDACI be withdrawn) for Teach First's current measure is identified. Finally, this chapter provides a detailed description of the relationship between socio-economic indicators when defined at the school level. Comprehensive information on the relationship between these socio-economic indicators is presented in a 'ready-reckoner' accompanying this report.¹

Chapter 4 focuses on pupil-level measures, taking a step back to consider which socio-economic indicators (or combinations of indicators) best predict a pupil's actual level of educational disadvantage. This will provide valuable insight into whether the current criterion used by Teach First correctly targets schools where educational disadvantage is most pervasive. This chapter combines rich survey data from the Longitudinal Study of Young People in England (LSYPE), from which we derive a measure of 'true' educational disadvantage, and the socio-economic indicators available from administrative data used throughout this report.

¹ <http://www.ifs.org.uk/docs/TeachFirst2012>.

CHAPTER 2

Description of socio-economic indicators

Researchers and charities are often interested in finding out whether a household or individual has a certain level of income, a certain level of educational qualification or a certain outlook on life (such as the value they place on education). In the absence of a comprehensive survey, this information is unlikely to be observable for each individual or household. Socio-economic indicators available from administrative data sources are often used to represent these (and other) attributes of the individual or household that are otherwise unobservable. For example, a pupil's level of household income is often proxied by whether they are eligible for free school meals (which is observable in administrative data from schools). This is a rather coarse measure, as it allows one to classify a pupil as likely to be 'poor' or 'non-poor' but not to discern a more detailed level of disadvantage (or affluence) within these groups. It is nevertheless a better indicator of a household's level of income than a random guess.

Other commonly used socio-economic indicators are those available for small geographical areas, such as Lower Super Output Areas (LSOAs), which contain around 1,500 people on average,² and Census Area Statistics (CAS) wards, which typically contain around 6,000 people.³ Classification of small areas according to their characteristics is a useful way to proxy the characteristics of households within that area, as people who live close to each other often have relatively similar characteristics.⁴

Table 2.1 describes the socio-economic indicators that are freely available and commonly used in England. Eligibility for free school meals (and its variants) is defined individually for each pupil. Other socio-economic indicators are defined at a small area geography, either LSOA or CAS ward. The table also summarises the advantages and disadvantages of each indicator, and their relevance to Teach First. All indicators are relevant to Teach First in that they are likely to be correlated with educational disadvantage. While some indicators (such as IDACI) explicitly relate to a household's level of income, this is likely to be correlated with a broader measure of a household's educational disadvantage.

² <http://www.ons.gov.uk/ons/rel/sape/soa-mid-year-pop-est-engl-wales-exp/mid-2010-release/stb---super-output-area---mid-2010.html#tab-Key-Points>.

³ Calculated from ward-level mid-year population estimates (2010): <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-230924>.

⁴ See, for example, G. Smith, C. Hart, G. Watt, D. Hole and V. Hawthorne, 'Individual social class, area-based deprivation, cardiovascular disease risk factors and mortality: the Renfrew and Paisley study', *Journal of Epidemiology and Community Health*, 1998, vol. 52, pp. 399–405.

Table 2.1
Summary of socio-economic indicators

Socio-economic indicator	Description	Advantage	Disadvantage	Availability	Relevance to Teach First
Eligibility for free school meals (FSM)	Defined for individual pupils. In England, children are entitled to receive free school meals if their parents are in receipt of any of the following benefits: Income Support, income-based Jobseeker's Allowance, income-related Employment and Support Allowance, support under Part VI of the Immigration and Asylum Act 1999, the guaranteed element of Pension Credit, or Child Tax Credit provided they are not also entitled to Working Tax Credit and have an annual gross income of no more than £16,190, as assessed by Her Majesty's Revenue and Customs. ^a	Focuses on families with children. Freely available. Clear criteria. Defined at the pupil level rather than the LSOA level. When aggregated to the school level, the proportion of pupils with FSM is likely to reflect the relative income deprivation of the school and local area.	At the pupil level, eligibility for FSM is a crude measure of household income, as it does not distinguish between the poor and very poor or between households just above and far above the eligibility threshold. This measure of FSM status is a snapshot at a point in time.	Available from the Annual Schools Census at pupil level.	Focuses on families with children. Explicitly relates to income deprivation, which is likely to be highly correlated with educational disadvantage but is not a perfect representation.
Eligible for free school meals (FSM) in at least one of the past three academic years	Defined for individual pupils. Whether a pupil has been eligible for free school meals (according to the criteria outlined above) in at least one of the past three academic years.	As above. More likely to capture pupils at the boundary of the eligibility criteria.	Potential to incorrectly classify pupils in households with rising levels of income.	Available from the Annual Schools Census at pupil level.	As above.

Socio-economic indicator	Description	Advantage	Disadvantage	Availability	Relevance to Teach First
Eligible for free school meals (FSM) in at least one of the past six academic years	Defined for individual pupils. Whether a pupil has been eligible for free school meals (according to the criteria outlined above) in at least one of the past six academic years.	As above.	As above.	As above.	As above.
Eligible for free school meals (FSM) in at least one academic year	Defined for individual pupils. Whether a pupil has ever been eligible for free school meals (according to the criteria outlined above).	As above.	As above.	As above.	As above.
IDACI score	Defined at the Lower Super Output Area (LSOA) level. The proportion of children under 15 living in families that are income deprived. ^b Ranges from 0 to 1, where 0 is the most deprived and 1 is the least deprived. Scores are also converted to ranks, where a rank of 1 is assigned to the most deprived LSOA and a rank of 32,482 is assigned to the least deprived LSOA.	Focuses on families with children. Freely available. Updated regularly: the first index was produced at the LSOA level in 2004, and it has since been updated in 2007 and 2010.	Relates to income deprivation only.	Available at LSOA level from the Communities and Local Government website. ^c Commonly linked to pupil-level data from the Annual Schools Census.	Focuses on families with children. Explicitly relates to income deprivation, which is likely to be highly correlated with educational disadvantage but is not a perfect representation.

Socio-economic indicator	Description	Advantage	Disadvantage	Availability	Relevance to Teach First
Index of Multiple Deprivation (IMD)	Defined at the Lower Super Output Area (LSOA) level. IMD is constructed from seven indices of different domains: income deprivation, employment deprivation, health deprivation and disability, education and training deprivation, barriers to services, living environment / housing deprivation, and crime.	Freely available. Updated regularly: the first index was produced at the LSOA level in 2004, and it has since been updated in 2007 and 2010.	Does not only focus on families with children.	Available at LSOA level from the Communities and Local Government website. ^c	Relates to a broad measure of deprivation. While this includes factors that are less related to educational disadvantage and those less related to children, it is likely to be correlated with Teach First's priorities.
POLAR2: youth participation rate (YPR)	Defined at the Census Area Statistics (CAS) ward level. POLAR2 YPR is derived from the proportion of 18-year-olds who continue to higher education at age 18 or 19. This proportion is calculated for those aged 18 between 2000 and 2004, but an updated version will be available shortly. ^d The POLAR2 YPR classification is formed by ranking 2001 CAS wards according to their YPRs for the combined 2000 to 2004 cohorts. This gives five quintile groups of areas ordered from 1 (those wards with the lowest participation) to 5 (those wards with the highest participation).	Freely available. Updated reasonably regularly: the first POLAR2 quintiles were produced in 2002; they were updated in 2007 and are expected to be updated again shortly. Relates to the participation of young people, which is likely to be highly correlated with educational disadvantage.	Not relevant to younger children. Defined as quintiles rather than the underlying proportion, which means that this socio-economic indicator is less informative than other area-based indicators.	Available at the Census Area Statistics (CAS) ward and postcode level from the HEFCE website. ^d	Relevant to young people and their peers. Explicitly relates to one concept of educational disadvantage – likely access to higher education – and is likely to be highly correlated with broader concepts of educational disadvantage. However, it is not a perfect representation.

Socio-economic indicator	Description	Advantage	Disadvantage	Availability	Relevance to Teach First
POLAR2: adult higher education rate (AHE)	<p>Defined at the Census Area Statistics (CAS) ward level.</p> <p>POLAR2 AHE is derived from the proportion of people aged 16–74 reported as holding a higher education (HE) qualification in the 2001 Census.</p> <p>The POLAR2 AHE classification is formed by ranking 2001 CAS wards by their adult higher education rates.</p> <p>This gives five quintile groups of areas ordered from 1 (those wards with the lowest HE qualification rates) to 5 (those wards with the highest HE qualification rates).</p>	<p>Freely available.</p> <p>Updated reasonably regularly: the first POLAR2 quintiles were produced in 2002; they were updated in 2007 and are expected to be updated again shortly.</p> <p>Relates to the participation of adults in the local area, which is likely to be correlated with educational disadvantage of children.</p>	As above.	Available at the Census Area Statistics (CAS) ward and postcode level from the HEFCE website. ^d	Explicitly relates to one concept of educational disadvantage – likely access to and encouragement for higher education – and is likely to be highly correlated with broader concepts of educational disadvantage. As above, however, it is not a perfect representation.

^a <http://www.education.gov.uk/schools/pupilsupport/pastoralkare/a00202841/fsmcriteria>.

^b 'Income deprived' is defined as a family in receipt of Income Support, income-based Jobseeker's Allowance, support under Part VI of the Immigration and Asylum Act 1999 or the guaranteed element of Pension Credit, or those not in receipt of these benefits but in receipt of Child Tax Credit with an equivalised income (excluding housing benefits) below 60% of the national median before housing costs.

Source: <http://www.communities.gov.uk/documents/communities/pdf/733520.pdf>.

^c <https://www.gov.uk/government/publications/english-indices-of-deprivation-2010>.

^d <http://www.hefce.ac.uk/whatwedo/wp/ourresearch/polar/>.

Two socio-economic indicators, known as the Participation of Local Areas (POLAR2) and created by the Higher Education Funding Council for England (HEFCE), relate more explicitly to educational disadvantage. The youth participation rate (YPR) calculates the proportion of people aged 18 in a local area who go on to higher education at age 18 or 19. The adult higher education rate (AHE) calculates the proportion of people aged between 16 and 74 who hold a higher education qualification. These measures are likely to be more highly correlated with a young person's educational experience than measures based on income or more general deprivation. Unfortunately, the underlying proportions for the YPR and AHE are not available for public use; areas are ordered according to their measures of the YPR or AHE, and then aggregated into five equally-sized groups (referred to as quintiles), so we only know whether a pupil lives in an area whose participation rates lie in the top, bottom or other fifth of the population, rather than being able to differentiate further. This is similar to observing whether a pupil is 'poor' or 'non-poor' according to their eligibility for free school meals, but not their underlying household income.

All socio-economic indicators, whether defined for individual pupils or small geographical areas, can be aggregated to the school level. For example, the IDACI score for the neighbourhood in which each pupil lives can be averaged to form the mean IDACI score of the school. Alternatively, the proportion of pupils below a certain threshold can be calculated (as is done by Teach First for its current eligibility criterion). Similarly, the proportion of pupils eligible for free school meals can be calculated.

Socio-economic indicators defined at the school level are likely to be relatively constant over time: it takes time for the socio-economic composition of a neighbourhood to change, and while a pupil's own status may change from year to year (especially for those on the borderline of the entitlement criterion), the proportion of pupils at the school with a particular status is likely to be roughly constant; thus movements into and out of eligibility are likely to cancel out.⁵

These school-level socio-economic indicators are explored in more detail in Chapter 3, while the relationship between pupil-level indicators and educational disadvantage is explored in Chapter 4.

⁵ Unless, of course, the area is hit by a macroeconomic shock, such as the recent recession.

CHAPTER 3

Relationship between socio-economic indicators at the school level

The current eligibility criterion used by Teach First is whether at least 50% of pupils at the school live in neighbourhoods classified as being in the lowest three deciles of IDACI. Were this socio-economic indicator to be abolished (and if Teach First wished to continue to select the same type of school), it would be important to choose a new criterion where schools were classified as eligible or not eligible in a similar manner. This chapter presents evidence to inform this decision. We first describe the correlation between socio-economic indicators at the school level. We then present the crossover for the classification of schools according to the current and a potential criterion, which concludes that criteria based on the proportion of pupils eligible for free school meals (and its variants) perform best. We also present the correlation between various school-level socio-economic indicators in a ‘ready-reckoner’ produced alongside this report.⁶

Table 3.1
Summary statistics for all primary and secondary schools

Variable	Primary schools		Secondary schools	
	Mean	Standard deviation	Mean	Standard deviation
<i>Mean of school</i>				
IDACI score	0.21	0.14	0.21	0.12
POLAR2 young participation rate quintile	2.98	1.17	2.94	0.96
POLAR2 adult HE qualification quintile	2.90	1.22	2.85	1.07
<i>Proportion of school:</i>				
Lowest three IDACI deciles	0.31	0.34	0.32	0.28
Eligible for FSM	0.18	0.15	0.15	0.11
Eligible for FSM (past 3 years)	0.24	0.18	0.22	0.15
Eligible for FSM (past 6 years)	0.25	0.18	0.26	0.16
Eligible for FSM (ever)	0.24	0.18	0.30	0.17
Lowest two quintiles: POLAR2 YPR	0.40	0.39	0.41	0.31
Lowest two quintiles: POLAR2 AHE	0.42	0.41	0.44	0.35
<i>Proportion of school:</i>				
<i>Lowest three IMD deciles:</i>				
Overall	0.32	0.35	0.32	0.29
Barriers to housing and services domain	0.33	0.35	0.29	0.27
Crime domain	0.29	0.32	0.30	0.26
Education domain	0.33	0.34	0.33	0.27
Employment domain	0.32	0.34	0.32	0.28
Living environment domain	0.28	0.34	0.28	0.29
Health domain	0.31	0.36	0.31	0.31
Income domain	0.32	0.34	0.33	0.28

Note: Calculations are based on all pupils in schools classified as primary and secondary schools in Spring 2012, between Reception and Year 6 for primary schools and between Years 7 and 11 for secondary schools. See Appendix A for full details of the sample and classification of schools. Standard deviation is the square root of the variance in the sample.

⁶ <http://www.ifs.org.uk/docs/TeachFirst2012>.

As background to this chapter, Table 3.1 shows the mean level of each socio-economic indicator when calculated at the school level, and its standard deviation. Each school-level indicator is calculated using information from each pupil in the school, between Reception and Year 6 for primary schools and between Years 7 and 11 for secondary schools. Middle schools are excluded from all analysis.⁷ Indicators can be defined according to the mean level of disadvantage at the school (for example, the mean IDACI score from all pupils at the school) or as the proportion of pupils below a certain threshold (for example, the proportion of pupils who are in the lowest three deciles according to IDACI). Table 3.1 shows that the average level of each indicator across schools is generally similar for primary and secondary schools, but the standard deviation tends to be lower for secondary schools. This is because secondary schools tend to be larger and draw from a wider radius, which means that there is less variation in household characteristics across schools.

On average, 18% of pupils at primary schools are eligible for FSM, compared with 15% of pupils at secondary schools. The proportion of pupils who have been eligible for FSM at least once in the past three years is higher (24% for primary schools and 22% for secondary schools), and the proportion is higher again for pupils who have been eligible for FSM at least once in the past six years (25% for primary schools and 26% for secondary schools). The proportion of pupils who have ever been eligible for FSM is similar (24%) for primary schools (as pupils can have been eligible for FSM for a maximum of seven years) but somewhat higher (30%) for secondary schools (as pupils may have been eligible for FSM at their primary school as well). As would be expected, the proportion of pupils in the lowest three deciles of IDACI is around one-third, on average, while the proportion of pupils in the lowest two quintiles of the POLAR2 classifications is around two-fifths, on average.

3.1 Correlation between socio-economic indicators at the school level

How do socio-economic indicators relate to one another? Table 3.2 shows the correlation between school-level indicators of socio-economic disadvantage for primary schools in England, while Table 3.3 presents the same information for secondary schools. A correlation of 1 between two indicators means that they move perfectly together in the same direction, while a correlation of -1 means that they move perfectly together but in opposite directions. In both cases, such perfectly correlated variables are likely to represent the same underlying factor. A correlation of 0 means that the two indices do not move together (i.e. when one indicator is high, it gives us no information about whether the other indicator is likely to be high or low) and that they are therefore likely to reflect different underlying factors.

Table 3.2 shows that the correlation between primary school-level socio-economic indicators is highest (at least 0.98 in all cases) between indicators derived from some measure of the proportion of pupils eligible for free school meals (whether currently eligible, eligible in the past three years, eligible in the past six years or ever eligible). This is unsurprising, as although a pupil's FSM status can change over time, the proportion of pupils at the school who are either currently eligible or have been eligible in the past is likely to be roughly constant (see discussion at the end of Chapter 3). This suggests that

⁷ Full details of sample selection and data construction are shown in Appendix A.

Table 3.2
Correlation of school-level socio-economic indicators: primary schools

Variable	Mean of school: IDACI score	Prop.: lowest three IDACI deciles	Prop.: eligible for FSM	Prop.: eligible for FSM (past 3 years)	Prop.: eligible for FSM (past 6 years)	Prop.: eligible for FSM (ever)	Prop.: lowest three IMD deciles	Mean: POLAR2 YPR quintile	Mean: POLAR2 AHE quintile	Prop.: lowest two quintiles: POLAR2 YPR	Prop.: lowest two quintiles: POLAR2 AHE
Mean of school: IDACI score	1.00										
Prop.: lowest three IDACI deciles	0.94	1.00									
Prop.: eligible for FSM	0.87	0.83	1.00								
Prop.: eligible for FSM (past 3 years)	0.87	0.83	0.98	1.00							
Prop.: eligible for FSM (past 6 years)	0.87	0.83	0.98	1.00	1.00						
Prop.: eligible for FSM (ever)	0.87	0.84	0.99	1.00	1.00	1.00					
Prop.: lowest three IMD deciles	0.91	0.92	0.81	0.82	0.82	0.82	1.00				
Mean: POLAR2 YPR quintile	-0.62	-0.59	-0.60	-0.61	-0.62	-0.61	-0.65	1.00			
Mean: POLAR2 AHE quintile	-0.38	-0.37	-0.40	-0.41	-0.41	-0.41	-0.47	0.82	1.00		
Prop.: lowest two quintiles: POLAR2 YPR	0.56	0.55	0.56	0.56	0.56	0.56	0.61	-0.90	-0.75	1.00	
Prop.: lowest two quintiles: POLAR2 AHE	0.41	0.41	0.42	0.43	0.43	0.43	0.50	-0.79	-0.91	0.76	1.00

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012. See Appendix A for full details of the sample and classification of schools. All correlations are statistically significant at the 1% level.

Table 3.3

Correlation of school-level socio-economic indicators: secondary schools

Variable	Mean of school: IDACI score	Prop.: lowest three IDACI deciles	Prop.: eligible for FSM	Prop.: eligible for FSM (past 3 years)	Prop.: eligible for FSM (past 6 years)	Prop.: eligible for FSM (ever)	Prop.: lowest three IMD deciles	Mean: POLAR2 YPR quintile	Mean: POLAR2 AHE quintile	Prop.: lowest two quintiles: POLAR2 YPR	Prop.: lowest two quintiles: POLAR2 AHE
Mean of school: IDACI score	1.00										
Prop.: lowest three IDACI deciles	0.97	1.00									
Prop.: eligible for FSM	0.91	0.88	1.00								
Prop.: eligible for FSM (past 3 years)	0.91	0.89	0.98	1.00							
Prop.: eligible for FSM (past 6 years)	0.92	0.89	0.97	1.00	1.00						
Prop.: eligible for FSM (ever)	0.92	0.89	0.97	0.99	1.00	1.00					
Prop.: lowest three IMD deciles	0.92	0.94	0.85	0.86	0.87	0.87	1.00				
Mean: POLAR2 YPR quintile	-0.52	-0.50	-0.52	-0.54	-0.55	-0.57	-0.61	1.00			
Mean: POLAR2 AHE quintile	-0.27	-0.27	-0.27	-0.29	-0.30	-0.32	-0.41	0.84	1.00		
Prop.: lowest two quintiles: POLAR2 YPR	0.48	0.48	0.48	0.50	0.51	0.53	0.58	-0.93	-0.78	1.00	
Prop.: lowest two quintiles: POLAR2 AHE	0.32	0.32	0.32	0.34	0.35	0.37	0.46	-0.83	-0.94	0.81	1.00

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012. See Appendix A for full details of the sample and classification of schools. All correlations are statistically significant at the 1% level.

eligibility criteria for Teach First based on these various definitions of FSM status would be almost identical.

There is also a very high correlation between the mean IDACI score and the proportion of pupils in the bottom three deciles of IDACI (0.94 for primary schools in Table 3.2). This is unsurprising as the two indicators are based on the same underlying data. Similarly, there is a high correlation between the mean POLAR2 classifications and the proportion of pupils in the lowest two quintiles of POLAR2, because of their derivation from the same underlying variable.

Focusing on the correlation across indicators, there is a very high correlation between the mean IDACI score and the proportion of primary school pupils eligible for FSM (whether defined by current or previous eligibility). There is a similarly high correlation between these measures and the proportion of pupils in the bottom three deciles of IDACI. IMD has a higher correlation with IDACI than with FSM (although both are very high), which is expected as IDACI is derived as a sub-scale of the overall IMD measure.

In general, there is a lower correlation between the POLAR2 measures and other socio-economic indicators. For example, there is a correlation of -0.59 between the proportion of pupils in the bottom three deciles of IDACI and the mean of the POLAR2 young participation quintile. The fact that this correlation is relatively low and negative suggests that IDACI and POLAR2 reflect different aspects of socio-economic disadvantage.

The lowest correlation (-0.37) is between the mean of the POLAR2 AHE quintile and the proportion of pupils in the bottom three deciles of IDACI. This is perhaps unsurprising as the AHE quintile refers to the adult population while IDACI focuses on children.

Table 3.3 shows the correlation between school-level indicators of socio-economic disadvantage for secondary schools in England, repeating the analysis shown in Table 3.2 for primary schools. Overall, there is a very similar picture to that for primary schools: indicators based on the proportion of secondary school pupils eligible for free school meals have the highest correlation (at least 0.97 in all cases), which suggests that eligibility criteria based on any of these measures are likely to be similar.

The proportion of pupils in the lowest three deciles of IDACI is most highly correlated with the proportion of pupils in the lowest three deciles of IMD (0.94), which is unsurprising as IDACI is derived from components of the IMD score. Measures of FSM are also highly correlated with the proportion of pupils in the lowest three deciles of IDACI (at least 0.88 in all cases), which provides the first evidence that these measures are likely to be good replacements for the current eligibility criterion used by Teach First.

As in Table 3.2, there is a relatively low correlation between the current measure used by Teach First and school-level indicators derived from POLAR2: the correlation is -0.50 for the mean youth participation rate quintile and -0.27 for the mean adult higher education quintile. This suggests that these school-level indicators would not maintain a consistent selection of schools for Teach First, and this is investigated further in the next section. This does not suggest that the POLAR2 measures are not good indicators of educational disadvantage, simply that they do not provide a very good proxy for the current measure. Whether this is the best measure of educational disadvantage is investigated in Chapter 4.

3.2 Crossover between the current Teach First eligibility criterion and potential alternative criteria based on other socio-economic indicators

The current eligibility criterion used by Teach First is whether at least 50% of pupils at the school live in neighbourhoods classified as being in the lowest three deciles of IDACI. Were this socio-economic indicator to be abolished (and if Teach First wished to continue to select the same type of school), it would be important to choose a new criterion where schools were classified as eligible or not eligible in a similar manner.

The correlation of socio-economic indicators at the school level presented in Section 3.1 suggested that the current indicator used by Teach First is most strongly correlated with measures of the proportion of pupils eligible for free school meals.

This section confirms this finding by explicitly comparing whether schools meet the eligibility criterion under the current and a range of potential alternative criteria. Tables 3.4 and 3.5 present the results for primary and secondary schools respectively. Both tables have the same format: the first column names the alternative criterion that is being compared with the current criterion used by Teach First; the second column shows the number of schools that are classified in the same way by both criteria; the third column shows the number of schools that are not classified in the same way; the fourth column summarises this information to show the percentage of schools that are classified in the same way; and the final column shows the percentage of schools that are classified as eligible for Teach First under each alternative criterion. For reference, around 29% of primary schools and around 26% of secondary schools are currently eligible to receive a Teach First participant. Each table is ordered so that the alternative indicator with the worst match with the current criterion is at the top and the best is at the bottom.

We have experimented with various ‘cut-off points’ for each socio-economic indicator – for example, whether at least 10%, 20%, 30%, 40%, 50%, 60% or 70% are currently eligible for FSM, or whether 10%, 20%, 30%, 40%, 50%, 60% or 70% are in the lowest three deciles of IMD.

Table 3.4

Crossover between current and potential eligibility criteria for Teach First: primary schools

Variable	Match	Don't match	Percentage match	Percentage eligible
At least 10% in bottom 3 AHE quintiles	6,225	9,193	40.4	79.1
At least 20% in bottom 3 AHE quintiles	6,975	8,443	45.2	72.3
At least 10% in bottom 3 YPR quintiles	7,085	8,333	46.0	80.7
At least 30% in bottom 3 AHE quintiles	7,529	7,889	48.8	67.9
At least 40% in bottom 3 AHE quintiles	7,944	7,474	51.5	64.5
At least 20% in bottom 3 YPR quintiles	8,132	7,286	52.7	72.8
At least 50% in bottom 3 AHE quintiles	8,275	7,143	53.7	61.8
At least 10% eligible for FSM in past 6 years	8,342	7,076	54.1	74.9
At least 10% in bottom 2 AHE quintiles	8,414	7,004	54.6	59.4
At least 60% in bottom 3 AHE quintiles	8,503	6,915	55.1	59.4
At least 10% eligible for FSM in past 3 years	8,618	6,800	55.9	73.1
At least 10% ever eligible for FSM	8,616	6,802	55.9	73.1
At least 70% in bottom 3 AHE quintiles	8,767	6,651	56.9	56.8
At least 30% in bottom 3 YPR quintiles	8,857	6,561	57.4	66.9
At least 10% in bottom 2 YPR quintiles	9,021	6,397	58.5	61.7
At least 20% in bottom 2 AHE quintiles	9,322	6,096	60.5	51.4

Table 3.4 continued

Variable	Match	Don't match	Percentage match	Percentage eligible
At least 40% in bottom 3 YPR quintiles	9,399	6,019	61.0	62.6
At least 50% in bottom 3 YPR quintiles	9,807	5,611	63.6	59.3
At least 30% in bottom 2 AHE quintiles	9,913	5,505	64.3	46.6
At least 20% in bottom 2 YPR quintiles	10,057	5,361	65.2	52.0
At least 60% in bottom 3 YPR quintiles	10,129	5,289	65.7	56.4
At least 40% in bottom 2 AHE quintiles	10,299	5,119	66.8	43.2
At least 70% in bottom 3 YPR quintiles	10,410	5,008	67.5	53.4
At least 10% in bottom 1 AHE quintile	10,566	4,852	68.5	35.0
At least 10% eligible for FSM	10,573	4,845	68.6	59.9
At least 50% in bottom 2 AHE quintiles	10,575	4,843	68.6	40.5
At least 30% in bottom 2 YPR quintiles	10,710	4,708	69.5	45.7
At least 60% in bottom 2 AHE quintiles	10,785	4,633	70.0	38.1
At least 10% in bottom 1 YPR quintile	10,841	4,577	70.3	34.7
At least 70% eligible for FSM	10,944	4,474	71.0	0.1
At least 70% in bottom 2 AHE quintiles	10,946	4,472	71.0	35.8
At least 60% eligible for FSM	11,089	4,329	71.9	1.1
At least 70% eligible for FSM in past 3 years	11,092	4,326	71.9	1.1
At least 70% ever eligible for FSM	11,111	4,307	72.1	1.2
At least 40% in bottom 2 YPR quintiles	11,128	4,290	72.2	41.7
At least 70% eligible for FSM in past 6 years	11,163	4,255	72.4	1.6
At least 20% in bottom 1 AHE quintile	11,201	4,217	72.6	28.1
At least 50% in bottom 2 YPR quintiles	11,446	3,972	74.2	38.2
At least 30% in bottom 1 AHE quintile	11,514	3,904	74.7	24.5
At least 20% in bottom 1 YPR quintile	11,522	3,896	74.7	26.9
At least 50% eligible for FSM	11,584	3,834	75.1	4.4
At least 60% eligible for FSM in past 3 years	11,610	3,808	75.3	4.5
At least 60% ever eligible for FSM	11,640	3,778	75.5	4.8
At least 60% in bottom 2 YPR quintiles	11,652	3,766	75.6	35.0
At least 40% in bottom 1 AHE quintile	11,684	3,734	75.8	22.3
At least 60% eligible for FSM in past 6 years	11,753	3,665	76.2	5.5
At least 50% in bottom 1 AHE quintile	11,766	3,652	76.3	20.3
At least 70% in bottom 2 YPR quintiles	11,790	3,628	76.5	32.0
At least 60% in bottom 1 AHE quintile	11,811	3,607	76.6	18.5
At least 70% in bottom 1 AHE quintile	11,815	3,603	76.6	16.7
At least 30% in bottom 1 YPR quintile	11,894	3,524	77.1	22.9
At least 40% in bottom 1 YPR quintile	12,071	3,347	78.3	20.2
At least 70% in bottom 1 YPR quintile	12,105	3,313	78.5	14.3
At least 50% in bottom 1 YPR quintile	12,148	3,270	78.8	18.1
At least 60% in bottom 1 YPR quintile	12,155	3,263	78.8	16.2
At least 20% eligible for FSM in past 6 years	12,233	3,185	79.3	47.8
At least 20% ever eligible for FSM	12,438	2,980	80.7	46.3
At least 20% eligible for FSM in past 3 years	12,480	2,938	80.9	45.8
At least 40% eligible for FSM	12,513	2,905	81.2	10.8
At least 50% eligible for FSM in past 3 years	12,531	2,887	81.3	11.0
At least 50% ever eligible for FSM	12,563	2,855	81.5	11.2
At least 50% eligible for FSM in past 6 years	12,708	2,710	82.4	12.3
At least 40% eligible for FSM in past 3 years	13,431	1,987	87.1	19.4
At least 20% eligible for FSM	13,484	1,934	87.5	35.5
At least 40% ever eligible for FSM	13,488	1,930	87.5	19.8
At least 30% eligible for FSM	13,538	1,880	87.8	21.2
At least 40% eligible for FSM in past 6 years	13,559	1,859	87.9	21.2
At least 30% eligible for FSM in past 3 years	13,646	1,772	88.5	30.8
At least 30% eligible for FSM in past 6 years	13,639	1,779	88.5	32.4
At least 30% ever eligible for FSM	13,684	1,734	88.8	31.2

For primary schools, Table 3.4 shows that the alternative criterion that a school has *at least 30% of pupils who have ever been eligible for FSM* has the best correspondence with Teach First's current eligibility criterion: 88.8% of schools are classified in the same way using the two measures.

Teach First's current eligibility criterion has a similarly high correspondence with alternative measures based on FSM eligibility: almost 90% of schools are classified in the same way using the criterion that at least 30% or 40% of pupils at the school have been eligible for free school meals at least once in the past three or six years, or where 20% or 30% are currently eligible for free school meals. Criteria created from FSM are the only indicators to have a crossover of over 80%, suggesting that this domain is most related to the current criterion based on IDACI.

There is also a high correspondence with the youth participation rate for POLAR2 when a relatively high cut-off is imposed: 78.8% of schools are classified in the same way using the criterion that *at least 60% of pupils are in the bottom quintile for the YPR*. This is a high crossover, although it is 10 percentage points below that for the alternative criterion with the highest match (*at least 30% ever eligible for FSM*). The match between the current criterion and POLAR2 is lower when using less deprived quintiles and less strict cut-offs, suggesting that only relatively strict criteria derived from POLAR2 match Teach First's current criterion. By contrast, the percentage of pupils in the bottom three quintiles according to POLAR2 has the lowest correspondence with Teach First's current criterion.

The results for secondary schools presented in Table 3.5 show a similar story to that shown for primary schools in Table 3.4: the highest correspondence with Teach First's current eligibility criterion is based on the proportion of pupils eligible for FSM. All variants of the FSM criteria perform well, but for secondary schools the criterion that *at least 30% of pupils have been eligible for FSM in the last three years* is best: 92.1% of schools are classified in the same way as under the current criterion.

Criteria created from FSM are the only indicators where over 80% of schools are classified in the same way as Teach First's current criterion based on IDACI, for both primary and secondary schools.

Table 3.5

Crossover between current and potential eligibility criteria for Teach First: secondary schools

Variable	Match	Don't match	Percentage match	Percentage eligible
At least 10% in bottom 3 AHE quintiles	785	1,954	28.7	89.4
At least 10% in bottom 3 YPR quintiles	872	1,867	31.8	92.6
At least 20% in bottom 3 AHE quintiles	879	1,860	32.1	84.0
At least 10% ever eligible for FSM	960	1,779	35.0	91.1
At least 30% in bottom 3 AHE quintiles	989	1,750	36.1	78.2
At least 20% in bottom 3 YPR quintiles	1,002	1,737	36.6	86.6
At least 10% eligible for FSM in past 6 years	1,076	1,663	39.3	86.9
At least 10% in bottom 2 AHE quintiles	1,078	1,661	39.4	73.0
At least 40% in bottom 3 AHE quintiles	1,085	1,654	39.6	72.4
At least 10% in bottom 2 YPR quintiles	1,133	1,606	41.4	78.3
At least 30% in bottom 3 YPR quintiles	1,167	1,572	42.6	79.2
At least 50% in bottom 3 AHE quintiles	1,202	1,537	43.9	67.4
At least 10% eligible for FSM in past 3 years	1,245	1,494	45.5	80.6
At least 20% in bottom 2 AHE quintiles	1,280	1,459	46.7	63.6
At least 40% in bottom 3 YPR quintiles	1,333	1,406	48.7	71.9
At least 60% in bottom 3 AHE quintiles	1,341	1,398	49.0	60.5

Table 3.5 continued

Variable	Match	Don't match	Percentage match	Percentage eligible
At least 20% in bottom 2 YPR quintiles	1,371	1,368	50.1	65.8
At least 30% in bottom 2 AHE quintiles	1,437	1,302	52.5	56.4
At least 70% in bottom 3 AHE quintiles	1,473	1,266	53.8	53.5
At least 50% in bottom 3 YPR quintiles	1,490	1,249	54.4	64.7
At least 30% in bottom 2 YPR quintiles	1,551	1,188	56.6	56.3
At least 10% in bottom 1 YPR quintile	1,566	1,173	57.2	47.9
At least 10% in bottom 1 AHE quintile	1,578	1,161	57.6	46.7
At least 40% in bottom 2 AHE quintiles	1,592	1,147	58.1	49.0
At least 20% ever eligible for FSM	1,641	1,098	59.9	65.9
At least 60% in bottom 3 YPR quintiles	1,646	1,093	60.1	56.6
At least 50% in bottom 2 AHE quintiles	1,728	1,011	63.1	43.0
At least 40% in bottom 2 YPR quintiles	1,734	1,005	63.3	46.8
At least 70% in bottom 3 YPR quintiles	1,787	952	65.2	48.7
At least 10% eligible for FSM	1,808	931	66.0	59.8
At least 20% in bottom 1 AHE quintile	1,810	929	66.1	36.2
At least 20% in bottom 1 YPR quintile	1,819	920	66.4	34.8
At least 60% in bottom 2 AHE quintiles	1,843	896	67.3	36.8
At least 50% in bottom 2 YPR quintiles	1,870	869	68.3	37.8
At least 20% eligible for FSM in past 6 years	1,907	832	69.6	55.9
At least 70% in bottom 2 AHE quintiles	1,907	832	69.6	31.0
At least 30% in bottom 1 AHE quintile	1,938	801	70.8	28.8
At least 60% in bottom 2 YPR quintiles	1,977	762	72.2	30.1
At least 30% in bottom 1 YPR quintile	2,001	738	73.1	25.8
At least 40% in bottom 1 AHE quintile	2,020	719	73.7	22.7
At least 70% eligible for FSM	2,023	716	73.9	0.1
At least 60% eligible for FSM	2,031	708	74.2	0.4
At least 70% eligible for FSM in past 3 years	2,036	703	74.3	0.5
At least 70% eligible for FSM in past 6 years	2,057	682	75.1	1.3
At least 70% in bottom 2 YPR quintiles	2,059	680	75.2	22.3
At least 50% eligible for FSM	2,066	673	75.4	1.6
At least 50% in bottom 1 AHE quintile	2,072	667	75.6	18.2
At least 60% eligible for FSM in past 3 years	2,084	655	76.1	2.3
At least 40% in bottom 1 YPR quintile	2,087	652	76.2	19.0
At least 70% ever eligible for FSM	2,091	648	76.3	2.6
At least 60% in bottom 1 AHE quintile	2,093	646	76.4	14.0
At least 70% in bottom 1 AHE quintile	2,099	640	76.6	10.1
At least 70% in bottom 1 YPR quintile	2,104	635	76.8	6.1
At least 50% in bottom 1 YPR quintile	2,109	630	77.0	13.7
At least 60% in bottom 1 YPR quintile	2,114	625	77.2	9.2
At least 40% eligible for FSM	2,131	608	77.8	4.0
At least 60% eligible for FSM in past 6 years	2,133	606	77.9	4.1
At least 20% eligible for FSM in past 3 years	2,148	591	78.4	46.5
At least 50% eligible for FSM in past 3 years	2,175	564	79.4	5.6
At least 60% ever eligible for FSM	2,200	539	80.3	6.5
At least 30% ever eligible for FSM	2,255	484	82.3	41.9
At least 50% eligible for FSM in past 6 years	2,269	470	82.8	9.2
At least 30% eligible for FSM	2,337	402	85.3	11.6
At least 40% eligible for FSM in past 3 years	2,370	369	86.5	13.0
At least 50% ever eligible for FSM	2,403	336	87.7	14.5
At least 30% eligible for FSM in past 6 years	2,440	299	89.1	33.4
At least 20% eligible for FSM	2,505	234	91.5	27.2
At least 40% eligible for FSM in past 6 years	2,507	232	91.5	19.0
At least 40% ever eligible for FSM	2,518	221	91.9	26.2
At least 30% eligible for FSM in past 3 years	2,523	216	92.1	26.0

Only criteria using the most deprived quintile for the YPR or AHE have a similarly high crossover with Teach First's current criterion, suggesting that a relatively strict cut-off for the POLAR2 measure is necessary to match it: for secondary schools, 77.2% of schools are classified in the same way using the criterion that *at least 60% of pupils are in the bottom YPR quintile*, and 77.0% of schools using the criterion that *at least 50% of pupils are in the bottom YPR quintile*.

Is it possible to improve the match with the current criterion by combining socio-economic indicators? Tables B.1 and B.2 in Appendix B show that the answer is no: the highest match rate is only 80.8% for primary schools and 81.5% for secondary schools using combined measures, compared with 88.8% and 92.1% for the relevant FSM eligibility criterion alone.

Which criterion based on the proportion of pupils eligible for FSM (currently or at any time in the past) should be chosen? It may be convenient to choose the same criterion for both primary and secondary schools. Convenience may also lead one to choose the proportion of pupils who are currently eligible for FSM, as this is likely to be more readily known by schools. But one may also like to consider the *number* of schools that are classified as eligible for Teach First, where presumably something close to the current number of eligible schools is preferred. Around 29% of primary schools and around 26% of secondary schools are currently eligible for Teach First. Of the criteria with a match above 85%, the criterion that classifies the most similar proportion of schools as eligible for Teach First, for both primary and secondary schools, is that *at least 30% of pupils have been eligible for FSM in the past three years*.

Appendix C examines the crossover between the current Teach First eligibility criterion and other socio-economic indicators in more detail, with full results (the crossover between all socio-economic indicators) available in the 'ready-reckoner' produced alongside this report.⁸ A guide on how to interpret the tables in Appendix C is given in that appendix.

Of course, it is worth remembering that the ultimate aim of Teach First is to address educational disadvantage by placing Teach First participants in schools with the most educationally disadvantaged pupils. The selection criterion that is currently applied to schools is therefore presumably aimed at selecting the schools that exhibit the highest levels of educational disadvantage. But it is an open question as to whether the proportion of pupils in the bottom three deciles of IDACI is the best available measure of educational disadvantage for Teach First to use. We aim to address this question in Chapter 4.

⁸ <http://www.ifs.org.uk/docs/TeachFirst2012>.

CHAPTER 4

Socio-economic indicators and educational disadvantage

Teach First aims to address educational disadvantage by placing Teach First participants in schools with the most educationally disadvantaged pupils. There are two questions to answer when deciding the appropriate way to do this. First, how does one define educational disadvantage? Second, in the absence of observing all characteristics of a pupil that define them as educationally disadvantaged or otherwise, which socio-economic indicator (or combination of indicators) best predicts whether a pupil suffers from educational disadvantage? This chapter addresses both of these questions. Section 4.1 outlines the procedure we use to define a measure of educational disadvantage, which is described in more detail in Appendix D. Section 4.2 assesses which socio-economic indicators are best able to predict this measure of educational disadvantage. We do this first by correlating each indicator with our continuous measure of educational disadvantage. Second, we calculate the percentage of young people who are classified consistently by each socio-economic indicator and our indicator of educational disadvantage created from our rich survey data.

4.1 Creating a measure of educational disadvantage

We define a measure of educational disadvantage that summarises information about a young person's situation and background, giving more importance (or weight) to characteristics that are thought to relate more closely to Teach First's concept of educational disadvantage (such as parents' knowledge of modern qualifications). To create this measure of educational disadvantage, we use a survey of young people in England, which contains very detailed information on their family background, expectations and aspirations. This data source – the Longitudinal Study of Young People in England (LSYPE) – is described in more detail in Appendix A. We grouped relevant characteristics of young people and their parents into three domains:

- **A lack of material resources**, including characteristics such as housing tenure, household income, benefit receipt and employment of the parents. This domain is most similar to Teach First's current criterion for defining eligible schools (based on IDACI).
- **A lack of educational resources**, including characteristics such as access to a home computer and/or internet at home, education level of parents and grandparents, whether parents feel confident about giving advice regarding modern qualifications, and parents' feelings about the value of education.
- **Disengagement with and/or low performance in the education system**, including characteristics such as the pupil's attitude to school, suspension or exclusion from school, and expectations and aspirations for post-compulsory education.

Members of staff from Teach First were asked to assess the relevance of each characteristic to their concept of educational disadvantage, rating each as of 'low', 'medium' or 'high' relevance to Teach First. Across the three domains, characteristics relating to a lack of educational resources in the home were most likely to be highly rated,

although household income (part of the ‘lack of material resources’ domain) was also often regarded as of ‘high’ relevance.⁹

Our preferred method to create a measure of educational disadvantage uses only characteristics that at least five employees (out of 35) rated as of ‘high’ relevance to Teach First, as this set of characteristics is likely both to be relevant to Teach First and to contain a broad amount of information about young people and their parents.¹⁰ Table D.1 in Appendix D sets out these characteristics. We create a single measure of educational disadvantage using a method that can compress information from a set of characteristics into a single measure reflecting the most important dimensions, as explained in Appendix D.¹¹

We then create a binary measure of educational disadvantage equal to 1 for the 25% most educationally disadvantaged pupils (according to the score discussed above) and equal to 0 for the 75% least educationally disadvantaged.¹²

Our preferred measure of educational disadvantage is highly correlated with characteristics of parents and young people commonly thought to reflect levels of educational disadvantage (shown in detail in Appendix D):

- Over 50% of those classified as educationally disadvantaged have a mother with no formal educational qualifications, compared with 9% of those not classified as educationally disadvantaged.
- Around 22% of those classified as educationally disadvantaged have levels of household income in the bottom fifth and less than 4% are in the top fifth.
- Around 45% of those classified as educationally disadvantaged are not very / not at all likely to apply to university in the future, compared with 15% of those not classified as such.

This is encouraging, as it suggests that our preferred measure is consistent with more general measures of educational disadvantage.

4.2 Relationship between socio-economic indicators and educational disadvantage

Table 4.1 presents the correlation between our measure of educational disadvantage created from rich survey data for each young person, and each socio-economic indicator attached to them or their neighbourhood. The socio-economic indicators are ranked according to the strength of their correlation with our measure of educational disadvantage (in absolute terms), starting with a correlation close to zero for the IMD housing domain, and increasing to a correlation of 0.50 for whether the pupil has been

⁹ For more information, see Appendix D. Table D.1 gives full information on the ratings of all characteristics presented to Teach First.

¹⁰ We considered two other methods for creating a measure of educational disadvantage. Our preferred measure is well correlated with both of the alternative measures, and with simple indicators of educational disadvantage (such as parents’ educational qualifications), which are shown in Tables D.3–D.5 in Appendix D.

¹¹ We use this approach as many characteristics observed for those in the LSYPE are likely to provide similar information about a pupil’s level of educational disadvantage (for example, parents’ and grandparents’ level of education are likely to offer similar information about attitudes to, and knowledge of, higher education). While it is valuable to observe as many characteristics as possible, it can also sometimes be unwieldy to summarise all this information in a useful way.

¹² We experimented with imposing cut-offs of 10% and 50% rather than 25%; results are qualitatively unchanged.

Table 4.1

Correlation of socio-economic indicators with educational disadvantage

Indicator	Measure of educational disadvantage
IMD rank: housing domain	-0.04
IMD score: housing domain	0.05
POLAR2 adult higher education quintile	-0.17
IMD score: environment domain	0.25
POLAR2 youth participation rate quintile	-0.26
IMD rank: environment domain	-0.26
IMD score: crime domain	0.28
IMD rank: crime domain	-0.28
IMD score: employment domain	0.34
IMD score: health domain	0.34
IMD rank: health domain	-0.34
IMD rank: employment domain	-0.36
IMD score: education domain	0.37
IMD rank: education domain	-0.38
IMD score	0.39
IMD score: income domain	0.39
IMD rank	-0.39
IDACI score	0.39
IDACI rank	-0.40
IMD rank: income domain	-0.40
FSM in current year (2006)	0.43
FSM in past 3 years	0.49
FSM in past 5 years	0.50

eligible for FSM at least once in the past five years.¹³ Whether a pupil has been eligible for FSM at least once in the past three years has a similarly high correlation (0.49) but current eligibility has a slightly lower correlation (0.43). This suggests that a pupil's history of FSM is more informative for their level of educational disadvantage, which seems plausible as it may be more indicative of the 'permanent' situation of their household in terms of socio-economic status than the more transitory contemporaneous FSM measure.

Some domains of IMD – in particular, the education and income domains – are correlated with educational disadvantage, while others have a correlation close to zero. The overall IMD score also performs well (similarly to IDACI), suggesting that these socio-economic indicators are reasonably informative about a pupil's level of educational disadvantage.

To investigate which measures are the best predictors of educational disadvantage, we compare classifications of pupils as educationally disadvantaged or otherwise based on socio-economic indicators and based on richer information available in survey data. To do this, we compare our binary measure of educational disadvantage from the LSYPE

¹³ This measure of socio-economic disadvantage is based on the previous five rather than six years (as in previous chapters) as we are only able to observe FSM eligibility for this sample of young people for five years (between Spring 2002 and Spring 2006).

Table 4.2

Crossover between measure of educational disadvantage and prediction from separate socio-economic indicators

Indicator	<i>Measure of educational disadvantage</i>				Percentage match
	Measure=0 and indicator=0	Measure=0 and indicator=1	Measure=1 and indicator=0	Measure=1 and indicator=1	
POLAR2 AHE quintile	6,781	4,518	1,845	2,072	58.18
POLAR2 YPR quintile	7,098	4,201	1,816	2,101	60.46
IMD score: housing	8,591	2,708	2,727	1,190	64.28
IMD score: crime	8,654	2,645	2,277	1,640	67.65
IMD rank: housing	8,893	2,406	2,516	1,401	67.65
IMD score: environment	8,793	2,506	2,348	1,569	68.10
IMD rank: crime	8,856	2,326	2,247	1,670	69.71
IMD rank: environment	9,038	2,261	2,308	1,609	69.97
IMD score: health	8,917	2,382	2,172	1,745	70.07
IMD score: employment	8,929	2,370	2,173	1,744	70.14
IMD score: education	9,147	2,152	2,235	1,682	71.17
IMD rank: health	9,023	2,190	2,160	1,757	71.25
IMD score	9,094	2,205	2,124	1,793	71.55
IMD rank: employment	9,042	2,093	2,179	1,738	71.62
IMD rank: education	9,036	2,050	2,202	1,715	71.66
IMD score: income	9,149	2,150	2,149	1,768	71.75
IDACI score	9,149	2,150	2,133	1,784	71.85
IDACI rank	8,985	1,972	2,139	1,778	72.36
IMD rank	9,079	2,065	2,097	1,820	72.37
IMD rank: income	9,130	2,027	2,080	1,837	72.75
FSM in past 5 years	9,495	1,804	1,452	2,464	78.60
FSM in current year (2006)	10,049	995	2,013	1,639	79.53
FSM in past 3 years	9,887	1,412	1,688	2,228	79.63

Note: The socio-economic indicators that are continuous (such as IMD ranks and scores) are converted into binary indicators by giving a value of 1 to those in the most deprived 25% of scores or ranks and a value of 0 to those in the least deprived 75% of scores or ranks.

and various binary indicators of educational disadvantage based on each socio-economic indicator in turn.

Table 4.2 shows the correspondence between the binary measure of educational disadvantage based on rich survey data and one based on a single socio-economic indicator. The first column names the socio-economic indicator that is being compared. The second gives the number of young people who are classified as not educationally disadvantaged according to both the measure based on rich data and the socio-economic indicator, while the fifth column shows the number of young people who are classified as educationally disadvantaged by both. The third and fourth columns show the number of young people who are incorrectly classified (assuming that the measure of educational disadvantage based on rich survey data is correct). The final column summarises this information by showing the percentage of young people who are classified correctly.

As in Chapter 3, we have ranked the socio-economic indicators by the percentage of young people who are classified correctly, so that those in the first rows of Table 4.2 have the lowest relationship with our preferred measure of educational disadvantage, while

those in the last rows of the table have the highest. For example, according to the classification based on a pupil's POLAR2 adult higher education quintile (which has the lowest correspondence), 58% of pupils are classified correctly. This is a reasonable performance; information from one indicator manages to replicate the classification of pupils as educationally disadvantaged or otherwise using rich survey data for well over half of pupils.

Other indicators perform much better, however; whether a pupil has been eligible for free school meals at least once in the previous three years has the highest correspondence, with almost 80% of pupils being classified in the same way as when using rich survey data.

Is it possible to improve on the prediction of educational disadvantage by using information from multiple socio-economic indicators? The socio-economic indicators that predict educational disadvantage best individually are highly correlated at the school level (see Tables 3.2 and 3.3; for example, there is a correlation of around 0.9 between the mean IDACI level at the school and the proportion of pupils eligible for FSM), so it is

Table 4.3

Crossover between measure of educational disadvantage and prediction from combined socio-economic indicators

Combination	Measure of educational disadvantage				Percentage match
	Measure=0 and indicator=0	Measure=0 and indicator=1	Measure=1 and indicator=0	Measure=1 and indicator=1	
Include FSM in past 3 years					
FSM in past 3 years	9,887	1,412	1,688	2,228	79.63
FSM in past 3 years, IMD rank (income domain)	9,660	1,497	1,630	2,286	79.25
FSM in past 3 years, IMD rank (income domain), IMD rank	9,598	1,425	1,606	2,310	79.71
FSM in past 3 years, IMD rank (income domain), IMD rank, IDACI rank	9,386	1,352	1,604	2,312	79.83
FSM in past 3 years, IMD rank (income domain), IMD rank, IDACI rank, IMD rank (education domain)	9,324	1,269	1,557	2,359	80.52
FSM in past 3 years, POLAR2 YPR	8,362	2,937	1,235	2,681	72.58
Exclude FSM in past 3 years					
IMD rank (income domain), IMD rank, IDACI rank, IMD rank (education domain)	8,960	1,633	1,921	1,996	75.51
FSM in past 5 years, IMD rank (income domain), IMD rank, IDACI rank, IMD rank (education domain)	9,332	1,261	1,549	2,367	80.63
FSM in current year (2006), IMD rank (income domain), IMD rank, IDACI rank, IMD rank (education domain)	8,944	1,343	1,509	2,143	79.54

Note: The derived continuous socio-economic indicators are converted into binary indicators by giving a value of 1 to those in the most deprived 25% of scores and a value of 0 to those in the least deprived 75% of scores. The derived continuous socio-economic indicators were created using the predicted probability from a linear regression, where the dependent variable is equal to 1 if the pupil is educationally disadvantaged (and 0 otherwise) and the independent variables are the selected socio-economic indicators.

unlikely that there will be a significant improvement in the prediction of educational disadvantage through combining them. Table 4.3 confirms this; using information on the IMD rank (income domain) of a young person's neighbourhood in addition to a young person's own FSM status in the past three years changes the correct classification of a pupil's educational disadvantage only marginally (the percentage who are classified in the same way as by the rich survey data changes from 79.63% to 79.25%). Using information from five high-performing socio-economic indicators in Table 4.2 (FSM in past three years, IMD rank (income domain), IMD rank, IDACI rank and IMD rank (education domain)) increases the proportion with the correct classification marginally, from 79.63% to 80.52%, which suggests that these indicators contain very similar information. What about socio-economic indicators that are less correlated with IMD? Combining information on whether a young person has been eligible for FSM in the past three years and the POLAR2 YPR (which had some of the lowest correlations with other socio-economic indicators at the school level) of their local area performs less well than the combination with the IMD rank in the income domain (there is a 72.58% correspondence, compared with 79.25% for the IMD rank (income)). This suggests that the POLAR2 classification does not improve (and in fact may worsen) the correct prediction of educational disadvantage based on eligibility for FSM.

Indicators for eligibility for FSM in the current year or past five years have a similarly high correspondence to the indicator for eligibility in the past three years when combined with other indicators (shown in the bottom panel of Table 4.3). When all measures of eligibility for FSM are omitted, however, the proportion of correct classifications falls by around 5 percentage points to 75.51%. This suggests that eligibility for FSM (in the past or present) contains predictive information about a young person's educational disadvantage, over and above other highly correlated socio-economic indicators.

CHAPTER 5

Conclusions

In summary, our results suggest that the proportion of pupils who have been eligible for free school meals over the past three years seems to be both a good proxy for the current Teach First criterion for classifying eligible schools and a good predictor of educational disadvantage; better, even than the existing measure based on IDACI scores.

If IDACI were ever abolished, Teach First could identify very similar schools by focusing on those in which at least 30% of pupils have been eligible for free school meals at some point over the past three years. The fact that this FSM measure is also a better predictor of underlying educational disadvantage than the current IDACI criterion suggests that Teach First may be able to better target schools with high levels of educational disadvantage by adopting this alternative measure instead.

APPENDIX A

Data

School-level data

We use the Spring version of the Annual Schools Census (2012), kindly made available by the Department for Education. Returning the Annual Schools Census is a legal obligation for all state schools in England, so the data should be reliable and comprehensive.

The sample of schools used in the analysis are those we classify as either primary or secondary, excluding independent schools, special schools and small schools (those with fewer than 50 pupils¹⁴). We classify a school as primary or secondary depending on the number of pupils it teaches in each year group. For example, a school we observe teaching pupils between Reception and Year 6 would be classified as a primary school, and a school we observe teaching pupils between Year 4 and Year 8 would be classified as a middle school (and therefore excluded from the sample).

There are around 16,000 primary schools in England (and in our sample) and just over 3,000 secondary schools. The number of schools in each classification is given in Table A.1.

The high degree of crossover with the classification contained in EduBase – the register of educational establishments in England and Wales, which is maintained by the Department for Education – is shown in Table A.2. 1,905 schools are classified as secondary schools based both on the Annual Schools Census and on EduBase records, while only 34 are classified as secondary in EduBase but not based on the Annual Schools Census. This small discrepancy is likely to arise because of reporting error in EduBase, as the data are

Table A.1
Classification of schools in the Annual Schools Census

Classification based on the Annual Schools Census	Frequency	Percentage
Primary	15,733	74.47
Secondary	3,254	15.40
Could be primary ^a	65	0.31
Could be secondary ^a	68	0.32
Likely to be middle ^b	1,534	7.26
Other	473	2.24

^a Refers to schools where 90% of pupils are in the expected age range.

^b Refers to schools with a large overlap in the number of pupils in year groups usually associated with primary or secondary schools.

Table A.2
Correspondence between classifications based on the Annual Schools Census and EduBase records

Classification based on the Annual Schools Census	<i>EduBase classification</i>				
	Middle deemed primary	Middle deemed secondary	Nursery	Primary	Secondary
Primary	16	0	39	15,149	0
Secondary	0	0	0	0	1,905
Could be primary	14	0	0	3	0
Could be secondary	0	1	0	0	6
Likely to be middle	25	161	0	1,227	25
Other	1	6	0	0	3

¹⁴ We make this restriction to ensure that school-level averages of socio-economic indicators are based on a sufficiently large sample.

compiled from schools and local authorities. Similarly, a large proportion schools that are classified as primary in EduBase are classified as primary according to the Annual Schools Census. However, 7.5% of schools that are classified as primary in EduBase are classified as 'likely to be middle' according to the Annual Schools Census.

We decide not to include schools coded as 'likely to be middle' from the Annual Schools Census but coded as primary in EduBase (1,227 schools). This is because the Annual Schools Census is likely to be more accurate, as it contains information on each pupil in each national curriculum year group (on which our classifications of schools are based).

We create school-level socio-economic indicators based on all pupils between Reception and Year 6 for primary schools and between Years 7 and 11 for secondary schools.

For all pupils in schools classified as primary or secondary, we merge in publicly available data that represent some aspect of socio-economic disadvantage. (Information about these socio-economic indicators is summarised in Table 2.1.) We then create school-level measures of these socio-economic indicators – for example, the mean or the proportion of pupils below a certain level. The eventual school-level variables are summarised in Table 3.1.

Pupil-level data

We use the Longitudinal Study of Young People in England (LSYPE) with access to geographical indicators, kindly made available by the Department for Education. The LSYPE is a survey of young people born between 1 September 1989 and 31 August 1990.

APPENDIX B

Crossover between current and potential eligibility criteria for Teach First

Table B.1

Crossover between current and potential eligibility criteria for Teach First: primary schools

Variable label	Match	Don't match	Percentage match	Percentage eligible
Meets both criteria: fsm_60Xprop_qAHE_1_70	11,015	4,403	71.4	0.6
Meets both criteria: fsm_60Xprop_qAHE_1_50	11,021	4,397	71.5	0.6
Meets both criteria: fsm_60Xprop_qAHE_1_60	11,017	4,401	71.5	0.6
Meets both criteria: fsm_60Xprop_qYPR_1_60	11,030	4,388	71.5	0.7
Meets both criteria: fsm_60Xprop_qYPR_1_70	11,025	4,393	71.5	0.6
Meets both criteria: fsm_60Xprop_qYPR_1_50	11,034	4,384	71.6	0.7
Meets both criteria: fsm_50Xprop_qAHE_1_70	11,260	4,158	73.0	2.2
Meets both criteria: fsm_50Xprop_qAHE_1_60	11,279	4,139	73.2	2.3
Meets both criteria: fsm_50Xprop_qYPR_1_70	11,288	4,130	73.2	2.4
Meets both criteria: everfsm_3_60Xprop_qAHE_1_70	11,284	4,134	73.2	2.3
Meets both criteria: fsm_50Xprop_qAHE_1_50	11,296	4,122	73.3	2.4
Meets both criteria: everfsm_3_60Xprop_qAHE_1_60	11,302	4,116	73.3	2.5
Meets both criteria: everfsm_all_60Xprop_qAHE_1_70	11,298	4,120	73.3	2.4
Meets both criteria: fsm_50Xprop_qYPR_1_60	11,314	4,104	73.4	2.5
Meets both criteria: everfsm_3_60Xprop_qAHE_1_50	11,318	4,100	73.4	2.6
Meets both criteria: everfsm_3_60Xprop_qYPR_1_70	11,314	4,104	73.4	2.5
Meets both criteria: everfsm_all_60Xprop_qAHE_1_60	11,318	4,100	73.4	2.6
Meets both criteria: fsm_50Xprop_qYPR_1_50	11,331	4,087	73.5	2.6
Meets both criteria: everfsm_3_60Xprop_qYPR_1_60	11,335	4,083	73.5	2.7
Meets both criteria: everfsm_all_60Xprop_qAHE_1_50	11,335	4,083	73.5	2.7
Meets both criteria: everfsm_all_60Xprop_qYPR_1_70	11,325	4,093	73.5	2.6
Meets both criteria: everfsm_3_60Xprop_qYPR_1_50	11,354	4,064	73.6	2.8
Meets both criteria: everfsm_6_60Xprop_qAHE_1_70	11,345	4,073	73.6	2.7
Meets both criteria: everfsm_all_60Xprop_qYPR_1_60	11,351	4,067	73.6	2.8
Meets both criteria: everfsm_all_60Xprop_qYPR_1_50	11,368	4,050	73.7	2.9
Meets both criteria: everfsm_6_60Xprop_qAHE_1_60	11,371	4,047	73.8	2.9
Meets both criteria: everfsm_6_60Xprop_qYPR_1_70	11,376	4,042	73.8	3.0
Meets both criteria: everfsm_6_60Xprop_qAHE_1_50	11,392	4,026	73.9	3.0
Meets both criteria: everfsm_6_60Xprop_qYPR_1_60	11,406	4,012	74.0	3.1
Meets both criteria: everfsm_6_60Xprop_qYPR_1_50	11,426	3,992	74.1	3.3
Meets both criteria: fsm_40Xprop_qAHE_1_70	11,675	3,743	75.7	5.0
Meets both criteria: everfsm_3_50Xprop_qAHE_1_70	11,680	3,738	75.8	5.0
Meets both criteria: everfsm_all_50Xprop_qAHE_1_70	11,695	3,723	75.9	5.1
Meets both criteria: fsm_40Xprop_qAHE_1_60	11,718	3,700	76.0	5.3
Meets both criteria: everfsm_3_50Xprop_qAHE_1_60	11,718	3,700	76.0	5.3
Meets both criteria: fsm_40Xprop_qYPR_1_70	11,732	3,686	76.1	5.4
Meets both criteria: everfsm_3_50Xprop_qYPR_1_70	11,739	3,679	76.1	5.4
Meets both criteria: everfsm_all_50Xprop_qAHE_1_60	11,736	3,682	76.1	5.4
Meets both criteria: fsm_40Xprop_qAHE_1_50	11,754	3,664	76.2	5.5
Meets both criteria: everfsm_3_50Xprop_qAHE_1_50	11,751	3,667	76.2	5.5
Meets both criteria: everfsm_6_50Xprop_qAHE_1_70	11,755	3,663	76.2	5.5
Meets both criteria: everfsm_all_50Xprop_qYPR_1_70	11,753	3,665	76.2	5.5
Meets both criteria: everfsm_all_50Xprop_qAHE_1_50	11,770	3,648	76.3	5.6
Meets both criteria: fsm_40Xprop_qYPR_1_60	11,778	3,640	76.4	5.7
Meets both criteria: everfsm_3_50Xprop_qYPR_1_60	11,789	3,629	76.5	5.8
Meets both criteria: everfsm_6_50Xprop_qAHE_1_60	11,798	3,620	76.5	5.8
Meets both criteria: fsm_40Xprop_qYPR_1_50	11,810	3,608	76.6	6.0
Meets both criteria: everfsm_6_50Xprop_qYPR_1_70	11,816	3,602	76.6	5.9

Table B.1 continued

Variable label	Match	Don't match	Percentage match	Percentage eligible
Meets both criteria: everfsm_all_50Xprop_qYPR_1_60	11,803	3,615	76.6	5.9
Meets both criteria: everfsm_3_50Xprop_qYPR_1_50	11,818	3,600	76.7	6.0
Meets both criteria: everfsm_6_50Xprop_qAHE_1_50	11,835	3,583	76.8	6.1
Meets both criteria: everfsm_all_50Xprop_qYPR_1_50	11,837	3,581	76.8	6.1
Meets both criteria: everfsm_6_50Xprop_qYPR_1_60	11,869	3,549	77.0	6.3
Meets both criteria: everfsm_6_50Xprop_qYPR_1_50	11,906	3,512	77.2	6.6
Meets both criteria: everfsm_3_40Xprop_qAHE_1_70	12,073	3,345	78.3	8.3
Meets both criteria: everfsm_all_40Xprop_qAHE_1_70	12,086	3,332	78.4	8.4
Meets both criteria: fsm_30Xprop_qAHE_1_70	12,121	3,297	78.6	8.8
Meets both criteria: everfsm_3_40Xprop_qYPR_1_70	12,123	3,295	78.6	8.5
Meets both criteria: everfsm_6_40Xprop_qAHE_1_70	12,130	3,288	78.7	8.8
Meets both criteria: everfsm_all_40Xprop_qYPR_1_70	12,132	3,286	78.7	8.6
Meets both criteria: everfsm_3_40Xprop_qAHE_1_60	12,146	3,272	78.8	8.9
Meets both criteria: fsm_30Xprop_qYPR_1_70	12,163	3,255	78.9	9.1
Meets both criteria: everfsm_all_40Xprop_qAHE_1_60	12,165	3,253	78.9	9.0
Meets both criteria: everfsm_6_40Xprop_qYPR_1_70	12,174	3,244	79.0	9.0
Meets both criteria: fsm_30Xprop_qAHE_1_60	12,192	3,226	79.1	9.5
Meets both criteria: everfsm_3_30Xprop_qAHE_1_70	12,195	3,223	79.1	11.5
Meets both criteria: everfsm_3_40Xprop_qAHE_1_50	12,207	3,211	79.2	9.4
Meets both criteria: everfsm_3_40Xprop_qYPR_1_60	12,211	3,207	79.2	9.3
Meets both criteria: everfsm_6_30Xprop_qAHE_1_70	12,204	3,214	79.2	11.9
Meets both criteria: everfsm_6_40Xprop_qAHE_1_60	12,211	3,207	79.2	9.5
Meets both criteria: everfsm_all_30Xprop_qAHE_1_70	12,206	3,212	79.2	11.6
Meets both criteria: everfsm_all_40Xprop_qAHE_1_50	12,231	3,187	79.3	9.5
Meets both criteria: everfsm_all_40Xprop_qYPR_1_60	12,224	3,194	79.3	9.4
Meets both criteria: fsm_30Xprop_qAHE_1_50	12,254	3,164	79.5	10.0
Meets both criteria: fsm_30Xprop_qYPR_1_60	12,254	3,164	79.5	9.9
Meets both criteria: everfsm_3_30Xprop_qYPR_1_70	12,261	3,157	79.5	11.2
Meets both criteria: everfsm_all_30Xprop_qYPR_1_70	12,264	3,154	79.5	11.3
Meets both criteria: everfsm_3_40Xprop_qYPR_1_50	12,279	3,139	79.6	9.8
Meets both criteria: everfsm_6_30Xprop_qYPR_1_70	12,267	3,151	79.6	11.5
Meets both criteria: everfsm_6_40Xprop_qAHE_1_50	12,279	3,139	79.6	10.1
Meets both criteria: everfsm_6_40Xprop_qYPR_1_60	12,270	3,148	79.6	9.8
Meets both criteria: everfsm_3_30Xprop_qAHE_1_60	12,283	3,135	79.7	12.4
Meets both criteria: everfsm_6_30Xprop_qAHE_1_60	12,291	3,127	79.7	12.9
Meets both criteria: everfsm_all_30Xprop_qAHE_1_60	12,295	3,123	79.7	12.6
Meets both criteria: everfsm_all_40Xprop_qYPR_1_50	12,297	3,121	79.8	9.9
Meets both criteria: fsm_30Xprop_qYPR_1_50	12,323	3,095	79.9	10.5
Meets both criteria: everfsm_6_40Xprop_qYPR_1_50	12,342	3,076	80.0	10.4
Meets both criteria: everfsm_3_30Xprop_qAHE_1_50	12,355	3,063	80.1	13.2
Meets both criteria: everfsm_3_30Xprop_qYPR_1_60	12,362	3,056	80.2	12.4
Meets both criteria: everfsm_6_30Xprop_qAHE_1_50	12,362	3,056	80.2	13.8
Meets both criteria: everfsm_6_30Xprop_qYPR_1_60	12,364	3,054	80.2	12.8
Meets both criteria: everfsm_all_30Xprop_qAHE_1_50	12,366	3,052	80.2	13.4
Meets both criteria: everfsm_all_30Xprop_qYPR_1_60	12,365	3,053	80.2	12.5
Meets both criteria: everfsm_3_30Xprop_qYPR_1_50	12,446	2,972	80.7	13.4
Meets both criteria: everfsm_6_30Xprop_qYPR_1_50	12,452	2,966	80.8	13.8
Meets both criteria: everfsm_all_30Xprop_qYPR_1_50	12,451	2,967	80.8	13.5

Table B.2

Crossover between current and potential eligibility criteria for Teach First: secondary schools

Variable label	Match	Don't match	Percentage match	Percentage eligible
Meets both criteria: fsm_60Xprop_qAHE_1_50	2,021	718	73.8	0.0
Meets both criteria: fsm_60Xprop_qAHE_1_60	2,021	718	73.8	0.0
Meets both criteria: fsm_60Xprop_qAHE_1_70	2,021	718	73.8	0.0
Meets both criteria: fsm_60Xprop_qYPR_1_50	2,022	717	73.8	0.0
Meets both criteria: fsm_60Xprop_qYPR_1_60	2,021	718	73.8	0.0
Meets both criteria: fsm_60Xprop_qYPR_1_70	2,021	718	73.8	0.0
Meets both criteria: fsm_50Xprop_qYPR_1_70	2,026	713	74.0	0.2
Meets both criteria: fsm_50Xprop_qAHE_1_70	2,030	709	74.1	0.3
Meets both criteria: fsm_50Xprop_qYPR_1_60	2,029	710	74.1	0.3
Meets both criteria: fsm_50Xprop_qAHE_1_50	2,032	707	74.2	0.4
Meets both criteria: fsm_50Xprop_qAHE_1_60	2,031	708	74.2	0.4
Meets both criteria: fsm_50Xprop_qYPR_1_50	2,032	707	74.2	0.4
Meets both criteria: everfsm_3_60Xprop_qYPR_1_70	2,032	707	74.2	0.4
Meets both criteria: everfsm_3_60Xprop_qAHE_1_70	2,034	705	74.3	0.5
Meets both criteria: everfsm_3_60Xprop_qYPR_1_60	2,036	703	74.3	0.5
Meets both criteria: fsm_40Xprop_qYPR_1_70	2,039	700	74.4	0.7
Meets both criteria: everfsm_3_60Xprop_qAHE_1_50	2,039	700	74.4	0.7
Meets both criteria: everfsm_3_60Xprop_qAHE_1_60	2,039	700	74.4	0.7
Meets both criteria: everfsm_3_60Xprop_qYPR_1_50	2,039	700	74.4	0.7
Meets both criteria: fsm_40Xprop_qAHE_1_70	2,045	694	74.7	0.9
Meets both criteria: fsm_40Xprop_qYPR_1_60	2,049	690	74.8	1.0
Meets both criteria: everfsm_6_60Xprop_qYPR_1_70	2,048	691	74.8	1.0
Meets both criteria: fsm_40Xprop_qAHE_1_60	2,052	687	74.9	1.1
Meets both criteria: everfsm_3_50Xprop_qYPR_1_70	2,052	687	74.9	1.1
Meets both criteria: everfsm_6_60Xprop_qAHE_1_70	2,051	688	74.9	1.1
Meets both criteria: fsm_40Xprop_qYPR_1_50	2,053	686	75.0	1.2
Meets both criteria: fsm_40Xprop_qAHE_1_50	2,057	682	75.1	1.3
Meets both criteria: everfsm_3_50Xprop_qAHE_1_70	2,056	683	75.1	1.3
Meets both criteria: everfsm_6_60Xprop_qAHE_1_60	2,058	681	75.1	1.4
Meets both criteria: everfsm_6_60Xprop_qYPR_1_60	2,057	682	75.1	1.3
Meets both criteria: everfsm_6_60Xprop_qAHE_1_50	2,061	678	75.2	1.5
Meets both criteria: everfsm_6_60Xprop_qYPR_1_50	2,061	678	75.2	1.5
Meets both criteria: everfsm_3_50Xprop_qAHE_1_60	2,064	675	75.4	1.6
Meets both criteria: everfsm_3_50Xprop_qYPR_1_60	2,064	675	75.4	1.6
Meets both criteria: everfsm_all_60Xprop_qYPR_1_70	2,065	674	75.4	1.6
Meets both criteria: everfsm_3_50Xprop_qAHE_1_50	2,069	670	75.5	1.8
Meets both criteria: everfsm_all_60Xprop_qAHE_1_70	2,068	671	75.5	1.7
Meets both criteria: everfsm_3_50Xprop_qYPR_1_50	2,070	669	75.6	1.8
Meets both criteria: everfsm_all_60Xprop_qAHE_1_60	2,078	661	75.9	2.1
Meets both criteria: everfsm_all_60Xprop_qYPR_1_60	2,078	661	75.9	2.1
Meets both criteria: everfsm_6_50Xprop_qYPR_1_70	2,083	656	76.0	2.3
Meets both criteria: everfsm_all_60Xprop_qAHE_1_50	2,085	654	76.1	2.3
Meets both criteria: everfsm_6_50Xprop_qAHE_1_70	2,087	652	76.2	2.4
Meets both criteria: everfsm_all_60Xprop_qYPR_1_50	2,086	653	76.2	2.4
Meets both criteria: fsm_30Xprop_qYPR_1_70	2,099	640	76.6	2.8
Meets both criteria: everfsm_6_50Xprop_qYPR_1_60	2,100	639	76.7	2.9
Meets both criteria: everfsm_6_50Xprop_qAHE_1_60	2,104	635	76.8	3.0
Meets both criteria: everfsm_3_40Xprop_qYPR_1_70	2,105	634	76.9	3.1
Meets both criteria: everfsm_all_50Xprop_qYPR_1_70	2,106	633	76.9	3.2
Meets both criteria: fsm_30Xprop_qAHE_1_70	2,108	631	77.0	3.2
Meets both criteria: everfsm_6_50Xprop_qYPR_1_50	2,111	628	77.1	3.3
Meets both criteria: everfsm_all_30Xprop_qYPR_1_70	2,113	626	77.1	5.8
Meets both criteria: everfsm_3_40Xprop_qAHE_1_70	2,118	621	77.3	3.5
Meets both criteria: everfsm_6_30Xprop_qYPR_1_70	2,116	623	77.3	5.7

Table B.2 continued

Variable label	Match	Don't match	Percentage match	Percentage eligible
Meets both criteria: everfsm_6_50Xprop_qAHE_1_50	2,118	621	77.3	3.5
Meets both criteria: fsm_30Xprop_qYPR_1_60	2,121	618	77.4	3.7
Meets both criteria: everfsm_3_30Xprop_qYPR_1_70	2,121	618	77.4	4.9
Meets both criteria: everfsm_all_40Xprop_qYPR_1_70	2,122	617	77.5	4.9
Meets both criteria: everfsm_6_40Xprop_qYPR_1_70	2,125	614	77.6	4.2
Meets both criteria: everfsm_all_50Xprop_qAHE_1_70	2,125	614	77.6	3.9
Meets both criteria: fsm_30Xprop_qAHE_1_60	2,127	612	77.7	3.9
Meets both criteria: everfsm_all_30Xprop_qAHE_1_70	2,127	612	77.7	9.1
Meets both criteria: everfsm_all_30Xprop_qYPR_1_60	2,130	609	77.8	8.5
Meets both criteria: everfsm_3_40Xprop_qYPR_1_60	2,133	606	77.9	4.1
Meets both criteria: everfsm_all_50Xprop_qYPR_1_60	2,135	604	77.9	4.3
Meets both criteria: fsm_30Xprop_qYPR_1_50	2,138	601	78.1	4.3
Meets both criteria: everfsm_3_40Xprop_qAHE_1_60	2,140	599	78.1	4.3
Meets both criteria: everfsm_6_30Xprop_qAHE_1_70	2,143	596	78.2	8.3
Meets both criteria: everfsm_6_30Xprop_qYPR_1_60	2,143	596	78.2	7.9
Meets both criteria: fsm_30Xprop_qAHE_1_50	2,148	591	78.4	4.6
Meets both criteria: everfsm_all_30Xprop_qYPR_1_50	2,147	592	78.4	12.0
Meets both criteria: everfsm_3_40Xprop_qYPR_1_50	2,151	588	78.5	4.7
Meets both criteria: everfsm_3_30Xprop_qYPR_1_60	2,154	585	78.6	6.8
Meets both criteria: everfsm_6_40Xprop_qAHE_1_70	2,152	587	78.6	5.1
Meets both criteria: everfsm_all_30Xprop_qAHE_1_60	2,152	587	78.6	11.8
Meets both criteria: everfsm_all_40Xprop_qYPR_1_60	2,154	585	78.6	6.8
Meets both criteria: everfsm_all_50Xprop_qAHE_1_60	2,152	587	78.6	4.9
Meets both criteria: everfsm_6_40Xprop_qYPR_1_60	2,159	580	78.8	5.4
Meets both criteria: everfsm_all_50Xprop_qYPR_1_50	2,159	580	78.8	5.2
Meets both criteria: everfsm_all_40Xprop_qAHE_1_70	2,160	579	78.9	6.6
Meets both criteria: everfsm_3_30Xprop_qAHE_1_70	2,165	574	79.0	6.6
Meets both criteria: everfsm_3_40Xprop_qAHE_1_50	2,164	575	79.0	5.2
Meets both criteria: everfsm_all_30Xprop_qAHE_1_50	2,169	570	79.2	14.5
Meets both criteria: everfsm_6_30Xprop_qAHE_1_60	2,174	565	79.4	10.6
Meets both criteria: everfsm_6_30Xprop_qYPR_1_50	2,174	565	79.4	10.9
Meets both criteria: everfsm_all_50Xprop_qAHE_1_50	2,178	561	79.5	5.9
Meets both criteria: everfsm_6_40Xprop_qAHE_1_60	2,188	551	79.9	6.5
Meets both criteria: everfsm_all_40Xprop_qYPR_1_50	2,190	549	80.0	8.9
Meets both criteria: everfsm_6_40Xprop_qYPR_1_50	2,195	544	80.1	6.8
Meets both criteria: everfsm_all_40Xprop_qAHE_1_60	2,194	545	80.1	8.6
Meets both criteria: everfsm_3_30Xprop_qYPR_1_50	2,197	542	80.2	8.9
Meets both criteria: everfsm_3_30Xprop_qAHE_1_60	2,200	539	80.3	8.6
Meets both criteria: everfsm_6_30Xprop_qAHE_1_50	2,203	536	80.4	12.8
Meets both criteria: everfsm_6_40Xprop_qAHE_1_50	2,221	518	81.1	7.8
Meets both criteria: everfsm_all_40Xprop_qAHE_1_50	2,226	513	81.3	10.5
Meets both criteria: everfsm_3_30Xprop_qAHE_1_50	2,232	507	81.5	10.4

APPENDIX C

Relationship between the current socio-economic indicator used by Teach First and other commonly used indicators

This appendix shows the relationship between the socio-economic indicator currently used by Teach First to determine eligibility and other commonly used socio-economic indicators.

Schools are grouped according to the proportion of pupils who are in the lowest three IDACI deciles (the indicator Teach First currently uses). For example, the first row in each table represents schools where between 0% and 5% of pupils are in the lowest three IDACI deciles (the least deprived) and the final row in each table represents schools where between 95% and 100% of pupils are in the lowest three IDACI deciles (the most deprived).

Each table compares the proportion of pupils in the school in the lowest three IDACI deciles with one other socio-economic indicator (also defined at the school level). For example, for primary schools, Table C.1 compares the socio-economic indicator used by Teach First with the proportion of pupils at the school who are eligible for free school meals.

Each column of the table shows a different characteristic of the particular socio-economic indicator that is being compared for each group of schools (where group refers to their level of deprivation according to the Teach First criterion). The first column shows the mean (or average) proportion of pupils who are eligible for free school meals for all schools in each group of schools. It may be that all schools are clustered around this mean level, but it may be that there is large variation. To illustrate this distribution, the other columns show other characteristics such as the standard deviation (SD), which shows the variation of the socio-economic indicator for each group of schools, and the minimum, median and maximum values for each group.

For example, if one were interested in the attributes of schools where around 50% of pupils are in the lowest three IDACI deciles, one would select the row labelled '0.5 to 0.55', indicating that between 50% and 55% of pupils in these schools meet this criterion. Looking across the columns of Table C.1 for this row shows the distribution of the proportion of pupils eligible for free school meals for this group of primary schools. The mean value is 0.25, which means that, on average, schools in our chosen group of schools have around 25% of pupils eligible for free school meals. In this case, the median is also equal to 0.25, which suggests that the distribution is not skewed.¹⁵ Are all schools clustered around this level? The minimum value (shown in the third column) is 0.02, which means that the school with the lowest proportion of pupils eligible for free school meals (in this group of schools) has 2% of pupils eligible for free school meals. The maximum is 0.53, which reveals considerable variation in the characteristics of schools in this group. While the mean is informative, other features of the distribution – for example, the percentiles of the distribution – allow us to consider the variation, which may be large (as we have just seen).

¹⁵ The median is the value of the school that is in the middle of all schools in the group if they are arranged according to the socio-economic indicator in question. The median can alternatively be referred to as the 50th percentile, which refers to the fact that 50% of schools have values below this one. Similarly, the 25th percentile refers to the value for which 25% of schools have a lower value.

Table C.1

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who are eligible for free school meals: primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.08	0.06	0.00	0.00	0.01	0.02	0.04	0.06	0.10	0.15	0.19	0.28	0.53
0.05 to 0.1	0.09	0.07	0.00	0.00	0.02	0.03	0.05	0.08	0.13	0.18	0.21	0.32	0.53
0.1 to 0.15	0.10	0.06	0.00	0.01	0.03	0.04	0.06	0.09	0.13	0.19	0.22	0.31	0.42
0.15 to 0.2	0.12	0.07	0.00	0.02	0.04	0.05	0.07	0.11	0.16	0.23	0.26	0.35	0.48
0.2 to 0.25	0.15	0.08	0.00	0.03	0.05	0.06	0.09	0.13	0.19	0.25	0.30	0.37	0.51
0.25 to 0.3	0.16	0.08	0.00	0.02	0.05	0.07	0.10	0.15	0.20	0.26	0.30	0.38	0.56
0.3 to 0.35	0.18	0.08	0.04	0.04	0.06	0.08	0.11	0.17	0.23	0.29	0.33	0.39	0.48
0.35 to 0.4	0.20	0.08	0.03	0.03	0.08	0.09	0.13	0.19	0.26	0.31	0.34	0.39	0.42
0.4 to 0.45	0.20	0.08	0.00	0.03	0.09	0.11	0.15	0.20	0.25	0.31	0.35	0.43	0.53
0.45 to 0.5	0.23	0.09	0.03	0.06	0.10	0.12	0.17	0.22	0.28	0.34	0.38	0.48	0.57
0.5 to 0.55	0.25	0.09	0.02	0.07	0.11	0.14	0.19	0.25	0.32	0.38	0.41	0.47	0.53
0.55 to 0.6	0.27	0.10	0.05	0.07	0.11	0.13	0.19	0.26	0.34	0.41	0.46	0.52	0.54
0.6 to 0.65	0.29	0.11	0.08	0.09	0.12	0.16	0.21	0.28	0.36	0.43	0.48	0.53	0.64
0.65 to 0.7	0.31	0.11	0.02	0.07	0.13	0.17	0.23	0.30	0.38	0.45	0.47	0.57	0.62
0.7 to 0.75	0.34	0.11	0.09	0.12	0.16	0.20	0.26	0.34	0.41	0.47	0.50	0.57	0.64
0.75 to 0.8	0.36	0.11	0.09	0.12	0.18	0.21	0.28	0.36	0.44	0.51	0.54	0.61	0.77
0.8 to 0.85	0.36	0.11	0.07	0.13	0.18	0.22	0.28	0.36	0.44	0.52	0.56	0.66	0.67
0.85 to 0.9	0.39	0.11	0.13	0.15	0.20	0.24	0.32	0.39	0.48	0.54	0.59	0.68	0.70
0.9 to 0.95	0.41	0.12	0.09	0.16	0.21	0.26	0.32	0.40	0.51	0.58	0.62	0.69	0.75
0.95 to 1	0.42	0.13	0.12	0.16	0.22	0.26	0.32	0.42	0.51	0.59	0.64	0.70	0.96

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.2

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have been eligible for free school meals at least once in the past three years: primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.11	0.08	0.00	0.00	0.02	0.03	0.06	0.09	0.14	0.21	0.25	0.36	0.61
0.05 to 0.1	0.13	0.08	0.00	0.01	0.04	0.05	0.08	0.11	0.17	0.24	0.29	0.40	0.62
0.1 to 0.15	0.14	0.08	0.01	0.02	0.04	0.06	0.08	0.13	0.18	0.25	0.29	0.38	0.50
0.15 to 0.2	0.17	0.09	0.01	0.03	0.05	0.07	0.10	0.15	0.22	0.29	0.34	0.43	0.59
0.2 to 0.25	0.20	0.10	0.00	0.05	0.07	0.09	0.13	0.18	0.25	0.33	0.39	0.46	0.65
0.25 to 0.3	0.21	0.09	0.00	0.05	0.08	0.10	0.14	0.19	0.26	0.34	0.38	0.46	0.70
0.3 to 0.35	0.23	0.10	0.05	0.06	0.09	0.11	0.15	0.22	0.31	0.37	0.41	0.46	0.52
0.35 to 0.4	0.26	0.10	0.03	0.06	0.11	0.13	0.18	0.25	0.33	0.39	0.42	0.48	0.57
0.4 to 0.45	0.27	0.10	0.00	0.05	0.12	0.15	0.20	0.26	0.32	0.39	0.44	0.51	0.59
0.45 to 0.5	0.30	0.10	0.07	0.09	0.15	0.18	0.22	0.30	0.36	0.43	0.48	0.61	0.71
0.5 to 0.55	0.33	0.11	0.03	0.08	0.14	0.19	0.25	0.32	0.40	0.47	0.51	0.55	0.58
0.55 to 0.6	0.34	0.12	0.07	0.11	0.15	0.18	0.26	0.34	0.43	0.50	0.53	0.62	0.70
0.6 to 0.65	0.37	0.12	0.10	0.13	0.17	0.21	0.29	0.36	0.46	0.52	0.57	0.65	0.71
0.65 to 0.7	0.38	0.12	0.02	0.10	0.18	0.23	0.30	0.39	0.48	0.53	0.57	0.66	0.69
0.7 to 0.75	0.42	0.12	0.13	0.17	0.21	0.26	0.33	0.42	0.51	0.58	0.61	0.70	0.77
0.75 to 0.8	0.45	0.12	0.13	0.15	0.25	0.29	0.36	0.45	0.54	0.62	0.65	0.69	0.78
0.8 to 0.85	0.45	0.13	0.09	0.17	0.24	0.28	0.36	0.46	0.54	0.62	0.67	0.73	0.76
0.85 to 0.9	0.49	0.13	0.13	0.20	0.25	0.31	0.40	0.49	0.58	0.65	0.69	0.75	0.90
0.9 to 0.95	0.51	0.14	0.11	0.19	0.28	0.33	0.41	0.51	0.61	0.68	0.72	0.80	0.88
0.95 to 1	0.51	0.14	0.14	0.20	0.28	0.32	0.41	0.52	0.62	0.69	0.73	0.80	0.99

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.3

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have been eligible for free school meals at least once in the past six years: primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.12	0.08	0.00	0.00	0.02	0.03	0.06	0.10	0.15	0.22	0.26	0.37	0.64
0.05 to 0.1	0.14	0.09	0.00	0.02	0.04	0.05	0.08	0.12	0.18	0.25	0.30	0.41	0.64
0.1 to 0.15	0.15	0.08	0.01	0.02	0.05	0.06	0.09	0.13	0.19	0.26	0.31	0.40	0.50
0.15 to 0.2	0.18	0.09	0.01	0.03	0.06	0.08	0.11	0.16	0.23	0.31	0.35	0.44	0.59
0.2 to 0.25	0.21	0.10	0.00	0.05	0.08	0.10	0.13	0.19	0.26	0.34	0.40	0.47	0.66
0.25 to 0.3	0.22	0.10	0.00	0.05	0.08	0.11	0.15	0.21	0.28	0.35	0.39	0.48	0.72
0.3 to 0.35	0.24	0.10	0.05	0.07	0.09	0.12	0.16	0.24	0.31	0.38	0.42	0.48	0.54
0.35 to 0.4	0.27	0.10	0.04	0.07	0.12	0.14	0.19	0.26	0.35	0.41	0.44	0.50	0.61
0.4 to 0.45	0.28	0.10	0.00	0.06	0.13	0.16	0.21	0.27	0.33	0.41	0.46	0.53	0.60
0.45 to 0.5	0.31	0.11	0.07	0.09	0.16	0.19	0.24	0.30	0.38	0.45	0.49	0.61	0.71
0.5 to 0.55	0.34	0.11	0.04	0.08	0.15	0.20	0.27	0.34	0.42	0.49	0.53	0.57	0.59
0.55 to 0.6	0.36	0.12	0.09	0.12	0.17	0.19	0.27	0.36	0.45	0.52	0.56	0.65	0.70
0.6 to 0.65	0.38	0.12	0.11	0.14	0.18	0.23	0.30	0.38	0.47	0.54	0.58	0.65	0.71
0.65 to 0.7	0.40	0.12	0.02	0.11	0.19	0.25	0.32	0.40	0.50	0.55	0.60	0.68	0.73
0.7 to 0.75	0.44	0.12	0.13	0.17	0.22	0.28	0.35	0.45	0.53	0.60	0.63	0.70	0.78
0.75 to 0.8	0.47	0.12	0.13	0.17	0.27	0.31	0.38	0.47	0.56	0.63	0.67	0.72	0.79
0.8 to 0.85	0.47	0.13	0.10	0.17	0.25	0.30	0.38	0.47	0.56	0.64	0.69	0.73	0.78
0.85 to 0.9	0.51	0.13	0.13	0.20	0.28	0.33	0.42	0.51	0.60	0.67	0.71	0.76	0.90
0.9 to 0.95	0.53	0.14	0.11	0.20	0.29	0.35	0.42	0.53	0.63	0.71	0.74	0.81	0.89
0.95 to 1	0.53	0.14	0.17	0.21	0.30	0.34	0.43	0.55	0.64	0.72	0.75	0.82	0.99

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.4

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have ever been eligible for free school meals: primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.11	0.08	0.00	0.00	0.02	0.03	0.06	0.09	0.14	0.21	0.25	0.36	0.61
0.05 to 0.1	0.13	0.08	0.00	0.01	0.04	0.05	0.08	0.11	0.17	0.24	0.29	0.41	0.63
0.1 to 0.15	0.14	0.08	0.00	0.02	0.04	0.06	0.08	0.13	0.18	0.25	0.30	0.38	0.48
0.15 to 0.2	0.17	0.09	0.01	0.03	0.05	0.07	0.11	0.15	0.22	0.29	0.34	0.43	0.59
0.2 to 0.25	0.20	0.10	0.00	0.05	0.08	0.09	0.13	0.18	0.26	0.33	0.38	0.47	0.62
0.25 to 0.3	0.21	0.09	0.00	0.05	0.08	0.10	0.14	0.19	0.26	0.34	0.38	0.46	0.70
0.3 to 0.35	0.23	0.10	0.05	0.06	0.09	0.12	0.16	0.22	0.30	0.36	0.41	0.47	0.53
0.35 to 0.4	0.26	0.10	0.04	0.07	0.11	0.14	0.19	0.26	0.34	0.40	0.42	0.48	0.60
0.4 to 0.45	0.27	0.10	0.00	0.06	0.12	0.15	0.20	0.26	0.33	0.40	0.45	0.51	0.60
0.45 to 0.5	0.30	0.10	0.07	0.09	0.16	0.18	0.22	0.29	0.36	0.43	0.47	0.60	0.70
0.5 to 0.55	0.33	0.11	0.03	0.08	0.14	0.19	0.26	0.33	0.40	0.47	0.51	0.56	0.59
0.55 to 0.6	0.35	0.12	0.08	0.12	0.16	0.19	0.26	0.35	0.43	0.51	0.56	0.64	0.67
0.6 to 0.65	0.37	0.12	0.11	0.13	0.17	0.22	0.29	0.37	0.46	0.53	0.57	0.65	0.70
0.65 to 0.7	0.39	0.12	0.02	0.11	0.19	0.24	0.31	0.39	0.48	0.53	0.58	0.66	0.73
0.7 to 0.75	0.43	0.12	0.13	0.17	0.22	0.26	0.34	0.43	0.51	0.58	0.61	0.69	0.79
0.75 to 0.8	0.46	0.12	0.12	0.16	0.26	0.30	0.37	0.46	0.55	0.61	0.66	0.71	0.77
0.8 to 0.85	0.46	0.13	0.10	0.17	0.24	0.29	0.37	0.46	0.55	0.63	0.67	0.73	0.78
0.85 to 0.9	0.49	0.13	0.13	0.20	0.26	0.33	0.41	0.50	0.59	0.65	0.69	0.75	0.89
0.9 to 0.95	0.51	0.13	0.11	0.20	0.29	0.34	0.41	0.51	0.61	0.69	0.72	0.79	0.85
0.95 to 1	0.52	0.14	0.16	0.20	0.29	0.33	0.42	0.53	0.62	0.70	0.74	0.80	0.97

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.5

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils in the lowest three deciles of IMD: primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.08	0.39	0.96
0.05 to 0.1	0.09	0.11	0.00	0.00	0.00	0.01	0.04	0.07	0.10	0.18	0.30	0.67	1.00
0.1 to 0.15	0.15	0.12	0.00	0.00	0.01	0.03	0.08	0.12	0.17	0.28	0.36	0.68	0.98
0.15 to 0.2	0.19	0.14	0.00	0.00	0.01	0.03	0.11	0.18	0.24	0.35	0.45	0.76	0.94
0.2 to 0.25	0.25	0.15	0.00	0.00	0.01	0.05	0.16	0.23	0.32	0.46	0.53	0.83	0.92
0.25 to 0.3	0.29	0.18	0.00	0.00	0.02	0.06	0.18	0.28	0.37	0.54	0.64	0.82	0.94
0.3 to 0.35	0.35	0.19	0.00	0.00	0.03	0.09	0.24	0.34	0.44	0.61	0.70	0.86	0.97
0.35 to 0.4	0.39	0.19	0.00	0.00	0.03	0.10	0.28	0.38	0.49	0.64	0.74	0.83	0.90
0.4 to 0.45	0.44	0.19	0.00	0.01	0.06	0.14	0.35	0.43	0.55	0.68	0.79	0.90	0.94
0.45 to 0.5	0.47	0.21	0.00	0.01	0.08	0.18	0.37	0.48	0.59	0.73	0.81	0.94	0.99
0.5 to 0.55	0.51	0.21	0.00	0.00	0.07	0.18	0.43	0.53	0.64	0.78	0.84	0.91	0.92
0.55 to 0.6	0.55	0.22	0.00	0.01	0.13	0.22	0.42	0.59	0.68	0.83	0.89	0.98	1.00
0.6 to 0.65	0.60	0.21	0.00	0.01	0.14	0.28	0.52	0.64	0.74	0.84	0.91	0.98	1.00
0.65 to 0.7	0.67	0.18	0.02	0.14	0.33	0.43	0.59	0.69	0.78	0.89	0.94	0.97	0.98
0.7 to 0.75	0.71	0.17	0.00	0.14	0.37	0.48	0.65	0.74	0.83	0.91	0.95	0.98	1.00
0.75 to 0.8	0.75	0.18	0.00	0.12	0.34	0.51	0.71	0.79	0.86	0.93	0.95	0.99	0.99
0.8 to 0.85	0.78	0.17	0.08	0.22	0.39	0.53	0.72	0.83	0.89	0.93	0.95	0.98	0.99
0.85 to 0.9	0.84	0.14	0.10	0.35	0.55	0.65	0.80	0.88	0.91	0.95	0.97	0.99	1.00
0.9 to 0.95	0.89	0.13	0.01	0.25	0.62	0.77	0.89	0.93	0.95	0.97	0.98	0.99	1.00
0.95 to 1	0.94	0.10	0.00	0.56	0.78	0.86	0.95	0.97	0.98	0.99	1.00	1.00	1.00

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.6

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the mean youth participation rate (YPR) quintile (from POLAR2): primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	3.82	0.84	1.00	1.42	2.13	2.69	3.23	3.96	4.54	4.84	4.92	4.98	5.00
0.05 to 0.1	3.32	0.89	1.02	1.16	1.81	2.05	2.76	3.44	3.96	4.47	4.69	4.89	4.97
0.1 to 0.15	3.13	0.90	1.00	1.08	1.61	1.99	2.52	3.11	3.77	4.33	4.65	4.95	4.98
0.15 to 0.2	2.93	0.88	1.03	1.08	1.49	1.85	2.23	2.90	3.58	4.16	4.43	4.92	5.00
0.2 to 0.25	2.71	0.97	1.01	1.04	1.29	1.49	2.00	2.60	3.33	4.15	4.56	4.91	4.99
0.25 to 0.3	2.63	0.92	1.01	1.03	1.12	1.45	2.01	2.51	3.18	3.92	4.56	4.87	4.98
0.3 to 0.35	2.53	0.92	1.00	1.03	1.16	1.35	1.92	2.40	3.07	3.84	4.43	4.95	4.96
0.35 to 0.4	2.42	0.93	1.03	1.04	1.18	1.28	1.72	2.28	2.94	3.77	4.25	4.92	4.99
0.4 to 0.45	2.47	0.97	1.00	1.02	1.15	1.35	1.86	2.21	2.99	3.97	4.64	4.92	5.00
0.45 to 0.5	2.31	0.97	1.03	1.04	1.09	1.18	1.57	2.09	2.86	3.80	4.19	4.94	4.99
0.5 to 0.55	2.23	0.96	1.01	1.03	1.08	1.14	1.49	2.04	2.72	3.62	4.29	4.93	4.95
0.55 to 0.6	2.25	1.00	1.01	1.01	1.05	1.15	1.45	2.05	2.82	3.82	4.39	4.84	4.98
0.6 to 0.65	2.25	1.04	1.00	1.01	1.06	1.13	1.38	2.05	2.92	3.90	4.59	4.92	4.98
0.65 to 0.7	2.13	0.99	1.00	1.01	1.06	1.12	1.31	1.92	2.70	3.64	4.21	4.86	4.99
0.7 to 0.75	2.08	0.95	1.00	1.01	1.05	1.09	1.27	1.90	2.58	3.53	4.06	4.83	4.96
0.75 to 0.8	2.02	1.01	1.00	1.01	1.04	1.06	1.20	1.67	2.44	3.74	4.13	4.79	4.91
0.8 to 0.85	2.06	1.03	1.00	1.00	1.04	1.07	1.19	1.81	2.75	3.58	4.36	4.89	4.94
0.85 to 0.9	2.04	1.02	1.00	1.01	1.03	1.07	1.17	1.72	2.71	3.72	4.11	4.74	4.96
0.9 to 0.95	1.94	0.96	1.00	1.01	1.03	1.05	1.14	1.58	2.62	3.34	3.75	4.80	4.95
0.95 to 1	2.03	0.87	1.00	1.00	1.02	1.04	1.13	2.03	2.79	3.11	3.63	4.05	4.80

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.7

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the mean adult higher education (AHE) quintile (from POLAR2): primary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	3.56	0.92	1.00	1.12	1.97	2.16	2.97	3.74	4.13	4.81	4.91	4.99	5.00
0.05 to 0.1	3.06	0.97	1.00	1.03	1.33	1.86	2.36	3.01	3.76	4.42	4.72	4.97	5.00
0.1 to 0.15	2.92	1.00	1.00	1.02	1.22	1.70	2.11	2.85	3.60	4.39	4.78	4.99	5.00
0.15 to 0.2	2.75	1.02	1.00	1.03	1.18	1.42	2.00	2.62	3.46	4.30	4.75	4.99	5.00
0.2 to 0.25	2.55	1.09	1.00	1.01	1.06	1.19	1.74	2.31	3.25	4.23	4.76	4.98	5.00
0.25 to 0.3	2.51	1.05	1.00	1.02	1.05	1.17	1.80	2.28	3.10	4.08	4.74	4.99	5.00
0.3 to 0.35	2.40	1.09	1.00	1.00	1.05	1.10	1.54	2.10	3.08	4.03	4.78	4.96	4.99
0.35 to 0.4	2.42	1.12	1.01	1.01	1.05	1.15	1.52	2.11	3.00	4.32	4.82	4.99	5.00
0.4 to 0.45	2.36	1.14	1.00	1.00	1.02	1.09	1.44	2.06	3.00	4.26	4.89	4.98	5.00
0.45 to 0.5	2.29	1.14	1.00	1.00	1.04	1.07	1.34	2.00	2.93	4.02	4.86	5.00	5.00
0.5 to 0.55	2.19	1.12	1.00	1.01	1.04	1.05	1.24	1.93	2.90	4.09	4.76	4.98	5.00
0.55 to 0.6	2.31	1.27	1.00	1.01	1.02	1.04	1.22	1.86	3.08	4.63	4.91	4.99	5.00
0.6 to 0.65	2.38	1.26	1.00	1.00	1.04	1.06	1.22	1.99	3.18	4.57	4.92	4.98	4.99
0.65 to 0.7	2.19	1.18	1.00	1.00	1.02	1.04	1.16	1.90	2.90	4.22	4.85	4.97	4.99
0.7 to 0.75	2.23	1.26	1.00	1.00	1.02	1.05	1.17	1.89	2.92	4.63	4.94	4.99	5.00
0.75 to 0.8	2.16	1.31	1.00	1.00	1.01	1.03	1.13	1.52	2.81	4.64	4.94	4.99	5.00
0.8 to 0.85	2.27	1.30	1.00	1.00	1.02	1.04	1.13	1.87	3.09	4.69	4.94	4.98	5.00
0.85 to 0.9	2.30	1.36	1.00	1.00	1.01	1.03	1.13	1.86	3.18	4.86	4.96	4.99	5.00
0.9 to 0.95	2.26	1.36	1.00	1.00	1.01	1.03	1.11	1.77	3.18	4.73	4.94	4.99	5.00
0.95 to 1	2.61	1.46	1.00	1.00	1.02	1.03	1.12	2.12	4.05	4.81	4.95	4.99	5.00

Note: Calculations are based on all pupils in schools classified as primary schools in Spring 2012.

Table C.8

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who are eligible for free school meals: secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.06	0.03	0.00	0.01	0.01	0.02	0.04	0.06	0.07	0.10	0.11	0.15	0.26
0.05 to 0.1	0.06	0.03	0.01	0.01	0.02	0.02	0.04	0.06	0.08	0.11	0.12	0.13	0.15
0.1 to 0.15	0.08	0.04	0.00	0.01	0.02	0.03	0.06	0.09	0.11	0.13	0.14	0.20	0.23
0.15 to 0.2	0.10	0.04	0.01	0.02	0.03	0.05	0.08	0.10	0.12	0.15	0.17	0.19	0.25
0.2 to 0.25	0.12	0.04	0.01	0.02	0.04	0.06	0.09	0.12	0.14	0.16	0.17	0.24	0.28
0.25 to 0.3	0.13	0.05	0.02	0.02	0.05	0.07	0.10	0.13	0.16	0.19	0.20	0.26	0.37
0.3 to 0.35	0.15	0.05	0.02	0.03	0.07	0.09	0.13	0.15	0.18	0.21	0.23	0.25	0.29
0.35 to 0.4	0.16	0.05	0.05	0.05	0.08	0.10	0.13	0.16	0.19	0.22	0.23	0.24	0.24
0.4 to 0.45	0.18	0.05	0.03	0.04	0.09	0.12	0.15	0.18	0.22	0.24	0.25	0.28	0.29
0.45 to 0.5	0.18	0.05	0.04	0.04	0.10	0.11	0.15	0.19	0.21	0.24	0.27	0.30	0.30
0.5 to 0.55	0.21	0.06	0.07	0.07	0.11	0.12	0.17	0.21	0.25	0.28	0.31	0.34	0.34
0.55 to 0.6	0.23	0.05	0.12	0.12	0.14	0.16	0.19	0.23	0.27	0.30	0.32	0.34	0.37
0.6 to 0.65	0.26	0.06	0.06	0.06	0.18	0.20	0.21	0.26	0.31	0.33	0.34	0.46	0.46
0.65 to 0.7	0.28	0.06	0.16	0.16	0.20	0.21	0.23	0.28	0.31	0.37	0.41	0.49	0.49
0.7 to 0.75	0.28	0.07	0.08	0.08	0.14	0.20	0.24	0.28	0.32	0.37	0.38	0.39	0.39
0.75 to 0.8	0.29	0.07	0.13	0.13	0.17	0.21	0.26	0.29	0.33	0.37	0.39	0.43	0.43
0.8 to 0.85	0.35	0.10	0.13	0.13	0.20	0.24	0.29	0.33	0.41	0.48	0.51	0.59	0.59
0.85 to 0.9	0.34	0.09	0.16	0.16	0.18	0.23	0.27	0.34	0.42	0.47	0.49	0.57	0.57
0.9 to 0.95	0.40	0.12	0.17	0.17	0.23	0.28	0.33	0.38	0.45	0.55	0.60	0.76	0.76
0.95 to 1	0.44	0.12	0.02	0.02	0.26	0.31	0.36	0.44	0.53	0.59	0.61	0.67	0.67

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.9

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have been eligible for free school meals at least once in the past three years: secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.10	0.04	0.00	0.01	0.02	0.04	0.07	0.10	0.12	0.15	0.17	0.23	0.32
0.05 to 0.1	0.10	0.05	0.01	0.02	0.03	0.04	0.07	0.10	0.14	0.17	0.18	0.22	0.24
0.1 to 0.15	0.13	0.05	0.01	0.02	0.04	0.06	0.10	0.14	0.17	0.20	0.23	0.28	0.31
0.15 to 0.2	0.16	0.06	0.02	0.03	0.05	0.08	0.12	0.16	0.20	0.23	0.25	0.28	0.31
0.2 to 0.25	0.18	0.06	0.02	0.04	0.07	0.10	0.15	0.19	0.21	0.23	0.25	0.35	0.40
0.25 to 0.3	0.20	0.07	0.04	0.05	0.08	0.12	0.15	0.19	0.24	0.28	0.30	0.36	0.41
0.3 to 0.35	0.22	0.06	0.03	0.04	0.13	0.14	0.19	0.23	0.26	0.29	0.31	0.37	0.38
0.35 to 0.4	0.23	0.06	0.07	0.10	0.12	0.15	0.19	0.24	0.28	0.31	0.32	0.34	0.38
0.4 to 0.45	0.27	0.07	0.07	0.07	0.15	0.17	0.23	0.28	0.32	0.35	0.36	0.42	0.48
0.45 to 0.5	0.27	0.07	0.06	0.06	0.16	0.18	0.23	0.28	0.31	0.34	0.37	0.39	0.39
0.5 to 0.55	0.30	0.08	0.10	0.10	0.15	0.20	0.26	0.31	0.35	0.42	0.44	0.49	0.49
0.55 to 0.6	0.33	0.07	0.14	0.18	0.21	0.24	0.28	0.32	0.37	0.41	0.44	0.47	0.50
0.6 to 0.65	0.37	0.07	0.09	0.09	0.26	0.28	0.33	0.37	0.41	0.44	0.47	0.54	0.54
0.65 to 0.7	0.39	0.07	0.19	0.19	0.28	0.29	0.35	0.40	0.42	0.46	0.53	0.60	0.60
0.7 to 0.75	0.39	0.08	0.14	0.14	0.22	0.31	0.35	0.39	0.46	0.48	0.50	0.51	0.51
0.75 to 0.8	0.41	0.08	0.20	0.20	0.26	0.29	0.35	0.41	0.48	0.52	0.52	0.58	0.58
0.8 to 0.85	0.48	0.11	0.21	0.21	0.31	0.35	0.41	0.46	0.54	0.62	0.65	0.77	0.77
0.85 to 0.9	0.48	0.10	0.24	0.24	0.33	0.34	0.39	0.48	0.54	0.63	0.66	0.67	0.67
0.9 to 0.95	0.52	0.12	0.27	0.27	0.34	0.40	0.44	0.52	0.58	0.67	0.70	0.90	0.90
0.95 to 1	0.57	0.13	0.02	0.02	0.35	0.43	0.49	0.57	0.65	0.72	0.75	0.79	0.79

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.10

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have been eligible for free school meals at least once in the past six years: secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.12	0.05	0.01	0.01	0.03	0.05	0.09	0.12	0.15	0.18	0.21	0.26	0.35
0.05 to 0.1	0.13	0.05	0.02	0.03	0.04	0.05	0.08	0.12	0.16	0.19	0.22	0.25	0.28
0.1 to 0.15	0.16	0.06	0.02	0.03	0.05	0.07	0.12	0.16	0.20	0.24	0.26	0.32	0.36
0.15 to 0.2	0.19	0.07	0.03	0.05	0.06	0.09	0.15	0.19	0.24	0.27	0.29	0.34	0.36
0.2 to 0.25	0.21	0.07	0.03	0.05	0.08	0.11	0.18	0.22	0.25	0.27	0.29	0.38	0.44
0.25 to 0.3	0.23	0.07	0.06	0.06	0.10	0.15	0.18	0.22	0.28	0.32	0.35	0.45	0.46
0.3 to 0.35	0.26	0.07	0.05	0.05	0.16	0.17	0.22	0.26	0.30	0.33	0.34	0.42	0.44
0.35 to 0.4	0.27	0.07	0.10	0.11	0.15	0.18	0.22	0.28	0.32	0.35	0.37	0.42	0.43
0.4 to 0.45	0.31	0.08	0.08	0.09	0.17	0.20	0.27	0.32	0.37	0.39	0.40	0.51	0.54
0.45 to 0.5	0.31	0.07	0.08	0.08	0.18	0.21	0.28	0.33	0.36	0.38	0.40	0.46	0.46
0.5 to 0.55	0.35	0.09	0.12	0.12	0.17	0.24	0.30	0.36	0.40	0.46	0.49	0.54	0.54
0.55 to 0.6	0.37	0.07	0.18	0.23	0.25	0.27	0.33	0.38	0.43	0.46	0.48	0.53	0.55
0.6 to 0.65	0.42	0.07	0.15	0.15	0.31	0.33	0.38	0.43	0.46	0.49	0.53	0.63	0.63
0.65 to 0.7	0.44	0.07	0.23	0.23	0.33	0.36	0.40	0.44	0.48	0.51	0.59	0.64	0.64
0.7 to 0.75	0.44	0.08	0.21	0.21	0.26	0.36	0.40	0.45	0.51	0.54	0.55	0.56	0.56
0.75 to 0.8	0.47	0.09	0.24	0.24	0.32	0.34	0.42	0.47	0.55	0.57	0.60	0.63	0.63
0.8 to 0.85	0.53	0.11	0.26	0.26	0.35	0.41	0.47	0.54	0.60	0.68	0.70	0.84	0.84
0.85 to 0.9	0.54	0.10	0.29	0.29	0.39	0.41	0.46	0.53	0.62	0.68	0.71	0.74	0.74
0.9 to 0.95	0.58	0.12	0.31	0.31	0.40	0.46	0.50	0.58	0.65	0.72	0.76	0.91	0.91
0.95 to 1	0.62	0.13	0.02	0.02	0.42	0.47	0.54	0.63	0.70	0.79	0.80	0.87	0.87

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.11

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils who have ever been eligible for free school meals: secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.14	0.06	0.01	0.02	0.04	0.07	0.10	0.14	0.18	0.22	0.23	0.31	0.39
0.05 to 0.1	0.15	0.06	0.02	0.04	0.06	0.07	0.10	0.15	0.19	0.23	0.25	0.28	0.33
0.1 to 0.15	0.19	0.07	0.03	0.03	0.07	0.09	0.15	0.19	0.24	0.28	0.31	0.38	0.39
0.15 to 0.2	0.22	0.07	0.04	0.05	0.08	0.12	0.18	0.23	0.28	0.31	0.33	0.37	0.39
0.2 to 0.25	0.25	0.07	0.04	0.08	0.10	0.14	0.21	0.26	0.30	0.33	0.35	0.42	0.50
0.25 to 0.3	0.27	0.08	0.08	0.09	0.13	0.17	0.22	0.26	0.33	0.37	0.41	0.51	0.51
0.3 to 0.35	0.30	0.07	0.08	0.09	0.19	0.21	0.26	0.31	0.35	0.39	0.40	0.45	0.51
0.35 to 0.4	0.32	0.08	0.13	0.15	0.19	0.22	0.26	0.33	0.38	0.41	0.43	0.46	0.51
0.4 to 0.45	0.36	0.08	0.09	0.10	0.21	0.26	0.32	0.38	0.42	0.45	0.47	0.57	0.57
0.45 to 0.5	0.36	0.08	0.10	0.10	0.22	0.26	0.32	0.38	0.42	0.44	0.48	0.53	0.53
0.5 to 0.55	0.40	0.09	0.16	0.16	0.23	0.27	0.37	0.41	0.46	0.51	0.54	0.59	0.59
0.55 to 0.6	0.43	0.07	0.21	0.26	0.29	0.33	0.38	0.44	0.48	0.53	0.55	0.58	0.58
0.6 to 0.65	0.48	0.07	0.18	0.18	0.37	0.39	0.44	0.48	0.53	0.56	0.58	0.67	0.67
0.65 to 0.7	0.50	0.08	0.26	0.26	0.37	0.40	0.45	0.50	0.55	0.57	0.65	0.68	0.68
0.7 to 0.75	0.50	0.08	0.27	0.27	0.32	0.40	0.46	0.50	0.57	0.59	0.60	0.65	0.65
0.75 to 0.8	0.53	0.09	0.28	0.28	0.37	0.40	0.49	0.53	0.61	0.64	0.66	0.69	0.69
0.8 to 0.85	0.59	0.11	0.31	0.31	0.41	0.46	0.52	0.60	0.67	0.74	0.76	0.79	0.79
0.85 to 0.9	0.59	0.10	0.34	0.34	0.43	0.45	0.53	0.58	0.66	0.72	0.78	0.80	0.80
0.9 to 0.95	0.64	0.11	0.37	0.37	0.46	0.51	0.57	0.65	0.72	0.78	0.80	0.90	0.90
0.95 to 1	0.67	0.13	0.02	0.02	0.50	0.54	0.60	0.67	0.76	0.83	0.84	0.90	0.90

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.12

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the proportion of pupils in the lowest three deciles of IMD: secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.06	0.10	0.21	0.67
0.05 to 0.1	0.07	0.05	0.00	0.00	0.00	0.01	0.04	0.06	0.09	0.13	0.18	0.23	0.29
0.1 to 0.15	0.11	0.08	0.00	0.00	0.01	0.02	0.05	0.11	0.16	0.21	0.25	0.38	0.42
0.15 to 0.2	0.16	0.10	0.00	0.00	0.03	0.05	0.09	0.15	0.22	0.28	0.31	0.40	0.72
0.2 to 0.25	0.23	0.10	0.00	0.02	0.06	0.10	0.16	0.23	0.29	0.35	0.41	0.45	0.48
0.25 to 0.3	0.31	0.11	0.05	0.07	0.09	0.17	0.23	0.31	0.37	0.43	0.50	0.65	0.66
0.3 to 0.35	0.35	0.12	0.05	0.08	0.12	0.16	0.26	0.36	0.43	0.53	0.55	0.62	0.62
0.35 to 0.4	0.38	0.12	0.06	0.06	0.20	0.23	0.31	0.39	0.46	0.51	0.56	0.74	0.78
0.4 to 0.45	0.44	0.13	0.09	0.10	0.20	0.26	0.36	0.46	0.52	0.58	0.62	0.76	0.84
0.45 to 0.5	0.47	0.14	0.17	0.17	0.21	0.24	0.39	0.49	0.57	0.64	0.67	0.72	0.72
0.5 to 0.55	0.52	0.15	0.14	0.14	0.23	0.33	0.47	0.53	0.61	0.70	0.76	0.79	0.79
0.55 to 0.6	0.56	0.15	0.14	0.18	0.24	0.34	0.49	0.59	0.66	0.73	0.78	0.83	0.83
0.6 to 0.65	0.64	0.15	0.15	0.15	0.33	0.44	0.57	0.66	0.73	0.79	0.82	0.96	0.96
0.65 to 0.7	0.66	0.14	0.24	0.24	0.35	0.45	0.62	0.69	0.75	0.80	0.84	0.91	0.91
0.7 to 0.75	0.69	0.14	0.38	0.38	0.43	0.45	0.62	0.74	0.80	0.82	0.84	0.93	0.93
0.75 to 0.8	0.73	0.14	0.24	0.24	0.50	0.54	0.68	0.76	0.82	0.87	0.91	0.93	0.93
0.8 to 0.85	0.77	0.14	0.15	0.15	0.47	0.64	0.71	0.80	0.86	0.90	0.91	0.94	0.94
0.85 to 0.9	0.84	0.12	0.46	0.46	0.57	0.69	0.78	0.88	0.92	0.96	0.98	0.99	0.99
0.9 to 0.95	0.88	0.08	0.40	0.40	0.78	0.80	0.86	0.90	0.94	0.95	0.96	0.98	0.98
0.95 to 1	0.94	0.06	0.71	0.71	0.86	0.88	0.94	0.96	0.98	0.98	0.99	0.99	0.99

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.13

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the mean youth participation rate (YPR) quintile (from POLAR2): secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	3.83	0.65	1.64	2.03	2.63	2.89	3.40	3.92	4.32	4.61	4.76	4.90	4.98
0.05 to 0.1	3.54	0.66	1.65	1.83	2.36	2.61	3.14	3.64	4.05	4.34	4.47	4.71	4.90
0.1 to 0.15	3.23	0.70	1.31	1.60	1.92	2.25	2.74	3.28	3.74	4.08	4.36	4.66	4.88
0.15 to 0.2	3.05	0.75	1.03	1.68	1.87	2.12	2.57	2.96	3.54	4.05	4.48	4.74	4.85
0.2 to 0.25	2.84	0.70	1.16	1.28	1.69	2.03	2.35	2.84	3.35	3.79	4.06	4.39	4.52
0.25 to 0.3	2.68	0.72	1.25	1.26	1.57	1.90	2.23	2.57	2.97	3.63	4.15	4.91	4.91
0.3 to 0.35	2.47	0.70	1.06	1.11	1.51	1.63	2.08	2.37	2.79	3.21	3.73	4.70	4.79
0.35 to 0.4	2.49	0.78	1.09	1.29	1.44	1.57	1.96	2.35	2.91	3.53	4.15	4.64	4.96
0.4 to 0.45	2.34	0.73	1.03	1.07	1.19	1.56	1.89	2.22	2.74	3.17	3.53	4.55	4.81
0.45 to 0.5	2.45	0.94	1.04	1.04	1.35	1.45	1.74	2.18	2.98	3.77	4.42	4.96	4.96
0.5 to 0.55	2.46	0.89	1.05	1.05	1.33	1.60	1.82	2.26	2.70	3.98	4.36	4.83	4.83
0.55 to 0.6	2.45	0.99	1.13	1.23	1.41	1.49	1.75	2.17	2.76	4.36	4.55	4.85	4.86
0.6 to 0.65	2.25	0.94	1.05	1.05	1.10	1.25	1.62	1.98	2.64	3.81	4.34	4.74	4.74
0.65 to 0.7	2.28	0.93	1.03	1.03	1.20	1.34	1.57	1.97	2.98	3.83	4.09	4.70	4.70
0.7 to 0.75	2.29	1.00	1.04	1.04	1.08	1.21	1.52	1.97	2.99	3.95	4.24	4.73	4.73
0.75 to 0.8	2.44	0.98	1.04	1.04	1.24	1.26	1.52	2.41	3.05	3.88	4.11	4.88	4.88
0.8 to 0.85	2.54	1.13	1.03	1.03	1.10	1.18	1.48	2.39	3.59	4.00	4.43	4.87	4.87
0.85 to 0.9	2.31	0.93	1.02	1.02	1.07	1.22	1.31	2.46	3.12	3.61	3.75	3.90	3.90
0.9 to 0.95	2.37	0.84	1.05	1.05	1.17	1.21	1.56	2.57	2.93	3.34	3.66	4.46	4.46
0.95 to 1	2.31	0.70	1.05	1.05	1.15	1.40	1.72	2.36	2.75	3.21	3.66	3.87	3.87

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

Table C.14

Relationship between the proportion of pupils at the school in the lowest three deciles of IDACI and the mean adult higher education (AHE) quintile (from POLAR2): secondary

Proportion of pupils in the lowest three IDACI deciles (in ranges)	Mean	SD	Minimum	1st percentile	5th percentile	10th percentile	25th percentile	Median	75th percentile	90th percentile	95th percentile	99th percentile	Maximum
0 to 0.05	3.59	0.75	1.29	1.63	2.23	2.51	3.11	3.63	4.12	4.57	4.74	4.89	4.95
0.05 to 0.1	3.35	0.79	1.37	1.46	1.90	2.25	2.87	3.43	3.92	4.36	4.53	4.89	4.97
0.1 to 0.15	3.03	0.82	1.09	1.15	1.72	1.97	2.49	3.04	3.66	4.04	4.46	4.90	4.98
0.15 to 0.2	2.85	0.88	1.01	1.10	1.44	1.82	2.25	2.74	3.38	4.06	4.57	4.93	4.98
0.2 to 0.25	2.65	0.84	1.07	1.15	1.49	1.57	2.03	2.55	3.21	3.72	4.33	4.79	4.89
0.25 to 0.3	2.40	0.80	1.11	1.12	1.42	1.58	1.80	2.24	2.75	3.63	3.95	4.88	4.96
0.3 to 0.35	2.31	0.82	1.03	1.03	1.12	1.33	1.77	2.19	2.70	3.43	3.97	4.72	4.76
0.35 to 0.4	2.46	0.96	1.01	1.02	1.11	1.35	1.72	2.25	3.02	3.91	4.24	4.95	4.97
0.4 to 0.45	2.25	0.91	1.01	1.01	1.05	1.16	1.59	2.11	2.62	3.62	4.13	4.68	4.76
0.45 to 0.5	2.38	1.10	1.02	1.02	1.17	1.29	1.52	1.97	3.22	4.09	4.81	4.96	4.96
0.5 to 0.55	2.35	1.07	1.02	1.02	1.13	1.23	1.48	2.05	2.96	3.92	4.61	4.90	4.90
0.55 to 0.6	2.34	1.09	1.03	1.03	1.13	1.18	1.46	2.02	2.97	4.20	4.54	4.93	4.95
0.6 to 0.65	2.21	1.18	1.02	1.02	1.06	1.12	1.39	1.79	2.35	4.48	4.72	4.89	4.89
0.65 to 0.7	2.32	1.09	1.04	1.04	1.12	1.20	1.55	1.92	2.70	4.15	4.47	4.83	4.83
0.7 to 0.75	2.37	1.34	1.03	1.03	1.05	1.07	1.32	1.71	3.47	4.72	4.85	4.97	4.97
0.75 to 0.8	2.60	1.38	1.01	1.01	1.06	1.11	1.32	2.04	4.06	4.83	4.91	4.98	4.98
0.8 to 0.85	2.86	1.45	1.01	1.01	1.07	1.10	1.50	2.72	4.36	4.89	4.93	4.98	4.98
0.85 to 0.9	2.54	1.28	1.02	1.02	1.05	1.07	1.45	2.28	3.47	4.56	4.85	4.87	4.87
0.9 to 0.95	2.99	1.47	1.03	1.03	1.17	1.26	1.50	2.67	4.64	4.91	4.93	4.97	4.97
0.95 to 1	3.11	1.34	1.05	1.05	1.12	1.15	1.55	3.61	4.24	4.62	4.74	4.90	4.90

Note: Calculations are based on all pupils in schools classified as secondary schools in Spring 2012.

APPENDIX D

Creating a measure of educational disadvantage based on characteristics of young people and their parents observed in LSYPE

Section 4.2 investigates what socio-economic indicators (or combinations of indicators) best predict educational disadvantage. To do this, we must first define a measure of educational disadvantage. We use the Longitudinal Study of Young People in England (LSYPE) described in Appendix A. This survey collects a large range of characteristics of pupils and their parents. We grouped relevant characteristics into three domains:

- **A lack of material resources**, including characteristics such as housing tenure, household income, benefit receipt and employment of the parents. This domain is most similar to Teach First's current criterion for defining eligible schools (based on IDACI).
- **A lack of educational resources**, including characteristics such as access to a home computer and/or internet at home, education level of parents and grandparents, whether parents feel confident about giving advice regarding modern qualifications, and parents' feelings about the value of education.
- **Disengagement with and/or low performance in the education system**, including characteristics such as the pupil's attitude to school, suspension or exclusion from school, and expectations and aspirations for post-compulsory education.

Members of staff from Teach First were asked to assess the relevance of each characteristic to their concept of educational disadvantage, rating each as of 'low', 'medium' or 'high' relevance to Teach First. Full details on the rating awarded to each characteristic are shown in Table D.1.

Across the three domains, characteristics relating to a lack of educational resources in the home were most likely to be highly rated, although household income (part of the 'lack of material resources' domain) was also often regarded as of 'high' relevance. For information, the characteristics most frequently rated as of 'high' relevance in each domain are given in Table D.2.

Many characteristics observed for those in the LSYPE are likely to provide similar information about a pupil's level of educational disadvantage (for example, parents' and grandparents' level of education are likely to offer similar information about attitudes to, and knowledge of, higher education). While it is valuable to observe as many characteristics as possible, it can also sometimes be unwieldy to summarise all this information in a useful way. Principal component analysis is a method that can summarise the information available from a large number of characteristics in one or more 'principal components'. These principal components are constructed so as to maximise the total amount of variation in the data that they explain. In our case, this is the measure that best expresses the level of educational disadvantage of each pupil.

Our preferred method applies polychoric principal component analysis¹⁶ to the characteristics within each domain in order to create three summary variables that explain a high degree of the variation within each of these domains. We then average these principal components across the three domains, weighting by the relevance assigned to each domain by Teach First staff.¹⁷

Our preferred method uses only characteristics that at least five (out of 35) employees rated as of 'high' relevance to Teach First (i.e. only those characteristics included in Table D.2), as this set of characteristics is

¹⁶ We use polychoric principal component analysis (rather than principal component analysis) as it accounts for the discrete form of our data (i.e. with numerous binary variables and those that can take a small number of values).

¹⁷ The weights applied to each domain are as follows: a lack of material resources (0.1); a lack of educational resources (0.6); and disengagement with and/or low performance in the education system (0.3). These weights are derived from the proportion of characteristics of high relevance (having at least five ratings of 'high', which applied to 14 characteristics) from each domain, rounded to the nearest decimal place. For example, 8 of the 14 characteristics are from the 'lack of educational resources' domain, which implies a weight of $8/14 = 0.57 \approx 0.6$.

likely both to be relevant to Teach First and to contain a broad amount of information about young people and their parents.¹⁸

Table D.1

Characteristics of pupils/parents and rating of ‘low’, ‘medium’ and ‘high’ relevance to Teach First

A lack of material resources	A lack of educational resources	Disengagement with and/or low performance in the education system
Estimate of gross household income [0, 1, 8]	Parent has not talked to young person about Year 10 subject choices [1, 1, 7]	Pupil’s aspirations for activity when leave school (Year 11) [1, 0, 7]
Parents’ assessment of financial circumstances [2, 1, 5]	Parent has lack of knowledge about modern qualifications [1, 2, 7]	Parent’s expectations for pupil’s activity when leave school (Year 11) [0, 1, 6]
Parents’ employment status [0, 5, 4]	Parent doesn’t talk to pupil about school report [1, 1, 6]	Parent’s aspirations for pupil’s activity when leave school (Year 11) [0, 1, 5]
Parents’ receipt of state benefits [1, 6, 2]	Parent rating of ‘overall quality’ of pupil’s school [1, 2, 6]	Pupil’s assessment of likelihood of ever applying to university to get a degree [1, 2, 5]
Parents’ receipt of tax credits [2, 6, 1]	Parent assessment of involvement in pupil’s school life [0, 3, 5]	Young person (YP) likes teachers [0, 3, 4]
Parents’ housing tenure [2, 6, 1]	Parent doesn’t attend parents’ evenings [0, 3, 5]	YP doesn’t want to go to school most of the time [0, 3, 4]
Parents’ total income from benefits or tax credits [0, 6, 0]	Parent disagrees that leaving school at 16 limits options later in life [1, 0, 5]	YP’s agreement that school work is worth doing [0, 3, 4]
	Highest educational qualification of parent [3, 3, 5]	YP’s agreement that school is a waste of time for me [1, 2, 4]
	Parents help with homework [0, 4, 4]	YP is happy when at school [0, 4, 4]
	Parents agree that qualifications are important for a good job [1, 2, 4]	YP’s assessment of likelihood of getting in to university if apply [1, 3, 4]
	Grandmother went to university and got degree [4, 2, 3]	Parents’ assessment of likelihood of YP going to university [1, 3, 3]
	Parents make sure does homework [0, 6, 2]	YP has ever been excluded/suspended from school [0, 4, 3]
	Grandfather went to university and got degree [4, 3, 2]	School environment (set of questions – for example, whether school is clean and tidy) [0–2, 3–6, 1–2]
	Access to internet at home [0, 8, 1]	Teachers (set of questions – for example, whether most teachers can keep order in class) [0–2, 4–6, 1–2]
	Computer at home [0, 6, 1]	
	English is the main language in the home [2, 6, 0]	

Note: Figures in brackets refer to the number of ratings of ‘low’, ‘medium’ and ‘high’ relevance.

¹⁸ We experimented with measures that use all characteristics and those that at least six members of staff deemed to be of ‘high’ relevance; results are qualitatively unchanged.

Table D.2

Characteristics of pupils/parents frequently rated as of ‘high’ relevance to Teach First

A lack of material resources	A lack of educational resources	Disengagement with and/or low performance in the education system
Estimate of gross household income [8]	Parent has not talked to young person about Year 10 subject choices [7]	Pupil’s aspirations for activity when leave school (Year 11) [7]
Parents’ assessment of financial circumstances [5]	Parent has lack of knowledge about modern qualifications [7]	Parent’s expectations for pupil’s activity when leave school (Year 11) [6]
	Parent doesn’t talk to pupil about school report [6]	Parent’s aspirations for pupil’s activity when leave school (Year 11) [5]
	Parent rating of ‘overall quality’ of pupil’s school [6]	Pupil’s assessment of likelihood of ever applying to university to get a degree [5]
	Parent assessment of involvement in pupil’s school life [5]	
	Parent doesn’t attend parents’ evenings [5]	
	Parent disagrees that leaving school at 16 limits options later in life [5]	
	Highest educational qualification of parent [5]	

Note: Figures in brackets refer to the number of ratings of ‘high’ relevance. Table D.1 shows the full set of characteristics from LSYPE that were considered by Teach First employees.

We then create a binary measure of educational disadvantage by classifying the most disadvantaged 25% of pupils as educationally disadvantaged.¹⁹ This measure is highly correlated with commonly used proxy measures for educational disadvantage:

- Table D.3 shows that there is a strong relationship between being classified as ‘educationally disadvantaged’ and mother’s highest educational qualification. For example, over 50% of those classified as educationally disadvantaged have a mother with no formal educational qualifications, compared with 9% of those not classified as educationally disadvantaged. Similarly, less than 1% of those classified as educationally disadvantaged have a mother with a degree, compared with nearly 17% of those not classified as educationally disadvantaged.
- Table D.4 shows that 22% of those classified as educationally disadvantaged have levels of household income in the bottom fifth and under 4% are in the top fifth. In comparison, less than 6% of those classified as not educationally disadvantaged have levels of household income in the bottom fifth, while over 40% are in the top fifth.
- Table D.5 shows that around 45% of those classified as educationally disadvantaged are not very / not at all likely to apply to university in the future, compared with 15% of those not classified as such.

In summary, Tables D.3–D.5 show that our preferred measure of educational disadvantage is highly correlated with characteristics of parents and young people that are often thought to reflect levels of educational disadvantage. This is encouraging, as it suggests that our preferred measure is consistent with more general measures of educational disadvantage.

¹⁹ We experimented with imposing cut-offs of 10% and 50% rather than 25%; there is a high level of crossover with the 25% cut-off in both cases.

Table D.3

Correspondence between our preferred measure of educational disadvantage and mother's highest educational qualification

National Qualification Framework level	Example qualification	<i>Educationally disadvantaged</i>		<i>Not educationally disadvantaged</i>	
		%	Cumulative %	%	Cumulative %
None		52.65	52.65	9.28	9.28
NQF level 1	GCSE: D–G	15.46	68.11	8.67	17.95
NQF level 2	GCSE: A–C	22.32	90.43	30.87	48.82
NQF level 3	A levels	6.40	96.83	16.52	65.34
NQF level 4	Nursing qual.	1.49	98.32	9.19	74.53
NQF level 5	HE diploma	1.29	99.61	8.61	83.14
NQF level 6	First degree	0.39	100.00	12.73	95.87
NQF level 7	Higher degree	0.00	100.00	4.14	100.01

Note: The columns labelled '%' give the percentage of young people whose mothers have each qualification level for those who are and are not classified as educationally disadvantaged, respectively. The columns labelled 'Cumulative %' give the total percentage of young people whose mothers have a qualification level below and including each qualification level, for those who are and are not classified as educationally disadvantaged, respectively. Note that these columns may not culminate at 100 due to rounding.

Table D.4

Correspondence between our preferred measure of educational disadvantage and household income quintile

Household income quintile	<i>Educationally disadvantaged</i>		<i>Not educationally disadvantaged</i>	
	%	Cumulative %	%	Cumulative %
Lowest fifth	22.12	22.12	5.85	5.85
2nd lowest fifth	25.87	47.99	7.08	12.93
3rd lowest fifth	28.53	76.52	15.31	28.24
2nd highest fifth	19.92	96.44	31.47	59.71
Highest fifth	3.56	100.00	40.29	100.00

Note: See note to Table D.3.

Table D.5

Correspondence between our preferred measure of educational disadvantage and likelihood of applying to university

Likelihood of applying to university	<i>Educationally disadvantaged</i>		<i>Not educationally disadvantaged</i>	
	%	Cumulative %	%	Cumulative %
Not very / not at all likely	45.15	45.15	15.12	15.12
Fairly likely	36.09	81.24	36.99	52.11
Very likely	18.76	100.00	47.89	100.00

Note: See note to Table D.3.