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Christine Farquharson
Ellen Greaves

An evaluation of the impact of the Social Mobility Foundation programmes on education outcomes

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7 Ridgmount Street
London WC1E 7AE

Tel: +44 (0) 20-7291 4800
Fax: +44 (0) 20-7323 4780
Email: mailbox@ifs.org.uk
Website: http://www.ifs.org.uk

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Preface

This work was primarily funded by the Social Mobility Foundation, courtesy of a grant from J.P. Morgan. The Social Mobility Foundation is a charity that aims to address inequality in access to professional occupations for high-achieving disadvantaged pupils. Co-funding was from the Centre for the Microeconomic Analysis of Public Policy, hosted at the Institute for Fiscal Studies (grant number ES/M010147/1).

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Christine Farquharson is a Senior Research Economist at the Institute for Fiscal Studies.

Ellen Greaves is a Research Associate at the Institute for Fiscal Studies and graduate student at the University of Bristol.

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Executive summary

The Social Mobility Foundation (SMF) is a charity that aims to make a practical improvement to social mobility in the UK by encouraging and supporting access to 'high-status' universities and professional occupations for high-attaining pupils from disadvantaged backgrounds.

The SMF's current programme, the Aspiring Professionals Programme, offers young people support across four key areas: mentoring, university application advice (including tailored visits to universities, and assistance with personal statements, interviews and admissions tests), skills sessions and internships. Young people join a City, Residential and, more recently, Online strand of the programme by application aged 16–17, and if successful are supported throughout their education, until graduate employment. The programme is open to academic young people predicted to achieve ABB at A-level (or equivalent), and who are eligible for Free School Meals (FSM), or are the first generation in their family to attend university in the UK or attend a school with a higher than average number of pupils eligible for FSM.

University participation, and especially participation at a high-status institution in a relevant subject, is a potentially important intermediate step towards accessing the type of professional occupations the SMF targets. This report therefore evaluates the impact of the SMF programmes on university participation overall and at high-status institutions. It also assesses its effect on subject choice (although this is not explicitly targeted by the SMF programmes). The impacts of the SMF's work on employment choices, and in particular occupation outcomes, are evaluated in another report by the Institute for Fiscal Studies (IFS).

This evaluation compares the education outcomes of SMF participants (collected by SMF via participant questionnaires and online searches) with outcomes for a group of pupils with similar observable characteristics (such as performance at secondary school and neighbourhood context), observed in administrative data. This report focuses on the education outcomes for six cohorts of participants with the SMF: the cohorts that entered the programme between 2009 and 2014. Results for the cohorts entering in 2013 and 2014 (referred to as the 2013 cohort and 2014 cohort) are new. Results for earlier cohorts update findings contained in an earlier IFS report (Crawford, Greaves and Jin, 2015).

We can interpret the difference in university participation and subject choice between SMF participants and our suitably chosen 'comparison' group of young people as the causal impact of the SMF programmes, under some assumptions, as follows.

- Participants do not choose to be part of the SMF programme on the basis of characteristics that are not observable to the researcher, and that also influence education outcomes. Examples of such factors could be pupils' motivation and professional aspirations, conditional on performance at secondary school.

- The sample of participants for which we observe education outcomes is a representative sample of SMF participants.

- These two assumptions are highly unlikely to be met in full. Nevertheless, by accounting for a wide range of important observable characteristics (such as prior attainment,

subject choice, and disadvantage), we are able to move 'closer to causal' and provide a better sense of how the SMF programmes have affected the outcomes of otherwise-similar students.

We find that students who participated in the SMF programmes were substantially more likely to attend university in the two years after they finished their A-levels (or equivalent). The biggest impacts were for the 2009 cohort (when the programme was smaller and more selective), but even in the 2013 and 2014 cohorts, SMF participants were around 9 percentage points more likely to attend university than other similar students. This is a very significant impact in a context where around 80% of comparison students attended university.

In addition, among students who did go on to university, there is some indication that SMF participants were more likely to attend Russell Group universities (though they were not any more likely to attend the universities that were most visited by employers). There is also little evidence that the SMF programmes shifted students' choices to pursue business/finance or law, but SMF participants who went on to university were more likely to study politics, especially in the later cohorts.

Key findings

SMF participants are more likely to attend university in the two years after A-levels (or equivalent).

Compared with a group of pupils with similar background and prior attainment, SMF participants were substantially more likely to attend university in the two years after they finished their A-levels (or equivalent). The estimates are large (ranging between 8 and 18 percentage points across cohorts), in a context where around 80% of comparison students attended university. The impact of the SMF programmes on increasing university participation is roughly equivalent to increasing attainment for all pupils to at least three A* grades at A-level from at least three B grades.

SMF participants who attend university are more likely to attend Russell Group universities.

Conditional on attending higher education, the SMF programmes had a positive impact on the chances of attending a Russell Group university, but these effects are only statistically significant for the 2010, 2013 and 2014 cohorts, with other cohorts aside from 2012 close to statistical significance. The size of the estimates would eliminate the difference in Russell Group participation between white pupils with at least three A grades at A-level eligible or not for FSM. However, there is no evidence that participation at a university most visited by top employers increased.

Limitations of this study are those common to non-experimental research designs.

We construct a credible comparison group of pupils whose education outcomes act as the counterfactual for SMF participants' outcomes in the absence of the programme. The crucial but untestable assumption is 'selection on observables': that is, there are no differences between the SMF participants and comparison group in unobservable characteristics, such as motivation or aspirations. Our estimates also rely on the outcomes we observe for SMF participants being representative of SMF participants as a whole.

Other comparison groups may be useful.

Alternative comparison groups may be useful for charities and organisations that need timely, but coarser, information to benchmark the success of their programme. Organisations can choose which group of students is most similar to their participants to act as a 'rough and ready' counterfactual group.

1. Introduction

The UK has relatively low levels of intergenerational income mobility (Carneiro et al., 2020), and there is evidence to suggest that professional occupations have become more, not less, socially exclusive over time.[1] Evidence suggests that pupils educated in independent schools are more likely to access professional occupations than pupils from state schools, even conditional on prior academic attainment and gaining access to a high-status university (Macmillan, Tyler and Vignoles, 2015). More generally, parental income is a better predictor of access to professional occupations than detailed measures of educational attainment (Gregg, Macmillan and Vittori, 2019). Improving access to professional occupations for disadvantaged young people would therefore make a positive contribution to improving social mobility in the UK.

The Social Mobility Foundation (SMF) was founded in 2005 with the aim of facilitating access to professional occupations through work experience. Its flagship programme, the Aspiring Professionals Programme (APP), aims to provide holistic support to disadvantaged pupils with high attainment in order to support their transition to university and the workforce. Participants are likely to have found out about the SMF programme through their school, and may have been encouraged to apply by a teacher. Applicants who meet the eligibility criteria are very likely to be admitted to the programme.

The support offered by the SMF has widened significantly over time. In 2006, 59 Year 12 and 13 pupils (aged 16–18) from London were offered internships. While internships remain an important component of the SMF's support, the current APP also offers mentoring, university application advice (including tailored visits to universities, and assistance with personal statements, interviews and admissions tests), and skills sessions. Young people apply for a strand of the programme depending on their location and career interests, and the SMF now has offices in three of the four UK nations, offering nuanced support across the country. Although the SMF works nationally now, because the report focuses on data for English pupils we use English educational language and terms throughout the report.

In 2010, the APP had an intake of over 500 Year 12 pupils (aged 16–17), and by 2014, the final cohort considered in this report, over 850 pupils in Year 12 or the UK equivalent (S5 in Scotland, Year 13 in Northern Ireland).

Over the first year of the APP, as they are making their university choices and applications, pupils are offered the following:

- a mentor working in their profession of interest, to correspond with by email roughly once a week, with several opportunities to meet face to face;

- a number of events, provided by the SMF or partner universities and employers, which include skills sessions, days to provide an overview of the roles and requirements of a sector of employment, workshops on 'making an impression' and interview skills, and focused events on the Russell Group and Oxbridge;

[1] http://webarchive.nationalarchives.gov.uk/+/http://www.cabinetoffice.gov.uk/media/227105/fair-access-summary.pdf.

- trips to Russell Group universities in London and outside London;
- a 'Personal Statement Checking Service';
- information about other opportunities they can pursue beyond those offered by the SMF, such as university summer schools;
- if they have engaged well with the programme, and subject to availability, a one- or two-week internship in their sector of interest – these normally take place in the summer between Years 12 and 13 (or equivalent) and those most engaged may receive more than one placement in their chosen sector, as well as a placement with an MP.

The SMF programmes are targeted at pupils who are disadvantaged and high-achieving. Specifically, to be eligible for the scheme in 2012 onwards, pupils needed to meet a disadvantage criterion – eligible or previously eligible for Free School Meals (FSM) – and an achievement criterion – predicted to achieve ABB (two 'A' grades and one 'B' in any subject) at their A-level exams (or equivalent), taken at age 18.[2] Pupils who did not meet the individual disadvantage criterion were also eligible if they were part of the first generation in their family to attend university in the UK and if they attended a school with a relatively disadvantaged pupil intake (with a higher than average proportion of pupils eligible for FSM) either for GCSEs (age 16) or A-levels (or equivalent).[3]

For cohorts prior to 2012, participants must have been eligible for FSM or the educational maintenance allowance (EMA), which was assigned on the basis of household income, in addition to the same conditions on achieved and predicted qualifications.

While the APP City strand focused on pupils in metropolitan centres – originally London, but now also Birmingham, Cardiff, Glasgow, Leeds, Liverpool, Manchester and Newcastle – from 2012 the SMF also offered a 'Residential' strand for pupils who met the eligibility criteria but lived outside these areas. In its first year, there were two Residential strands, each offering a two-week internship: the J.P. Morgan Finance Residential Programme offered 50 Year 12 (or equivalent) pupils a placement at the global investment bank, while the second year of the Whitehall Social Mobility Internship Programme offered 60 Year 12 (or equivalent) pupils a placement within a government department in Whitehall. Pupils on the J.P. Morgan programme were also matched with a mentor from J.P. Morgan, who acted in a similar role to mentors involved with the APP. Applicants were informed that the residential programmes would be of particular interest to pupils who were considering a career in banking and finance or who had an interest in finance and economics, and to those who had an interest in learning more about the Civil Service, respectively.

In 2013, the SMF partnered with Linklaters and the City Talent Initiative to provide additional Residential Programme streams in law and financial services. The following year, partnerships with CH2M and KPMG extended the programme to the engineering and accounting sectors.

[2] Students on a residential programme will have been from Scotland, Wales and Northern Ireland, and so equivalent exams would be relevant. This report focuses on SMF participants from England only, as the administrative data we use to construct a credible control group is from England only.

[3] Whether a school is relatively deprived is defined by whether the percentage of pupils eligible for FSMs at the school is higher than the regional average.

The residential internship programmes also included a range of evening activities, including a theatre trip to a West End show and a trip on the London Eye, and skills and career workshops, as well as sessions about applying to Russell Group universities, including advice about how to strengthen an UCAS application. Table 1.1 summarises the timeline of the SMF activities and support.

Education is an important route through which young people from disadvantaged backgrounds can gain access to professional occupations, for example through subject choice at A-level and undergraduate degree, and the perceived status of the higher education (HE) institution. This evaluation therefore focuses on early education outcomes for SMF participants. As subject choice is not an explicit focus of SMF events, any impact of involvement with the SMF on this outcome is likely to come through informal conversations with SMF staff, mentors or colleagues during internships. The impact of SMF's work on occupation outcomes (employment, professional occupation and salary) is evaluated in a partner IFS report.

This report proceeds as follows.

Chapter 2 outlines the methodology for this evaluation, and presents the data used.

Chapter 3 shows the characteristics of SMF participants who became involved with the charity between 2009 and 2014. This highlights the need to construct a credible control group for participants.

Chapter 4 presents the evaluation of the impact of the SMF's work on participants who became involved with the charity between 2009 and 2014. This updates and extends analysis from an earlier report (Crawford et al., 2015).

Chapter 5 summarises differences in outcomes across SMF programmes.

Chapter 6 presents alternative comparison groups, which may be useful for charities and organisations that need timely, but coarser, information to benchmark the success of their programme.

Chapter 7 concludes.

Table 1.1. SMF participants and activities for sixth-form (or equivalent) pupils

Cohort	Number of participants	SMF activities	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Third cohort of SMF (2009 cohort)	303 pupils	Mentoring or internship (applied for separately) Events: Public Speaking skills workshop; Pre-internship induction; Thinking of Oxbridge workshop; Interview Practice and Interview Skills	Y12	Y13					
Fourth cohort of SMF (2010 cohort)	507 pupils	APP Events: Thinking of Oxbridge and the Russell Group (x3 sessions); University visit (x3); Making an Impression workshop (x4); 'Centre of the Cell'; Interview Skills (x2)		Y12	Y13				
Fifth cohort of SMF (2011 cohort)	666 pupils	APP (expansion of events) Events: Thinking of Oxbridge and the Russell Group (x2 sessions); University visit (x5); Making an Impression workshop (x3); 'Centre of the Cell'; Interview Skills (x2); 'What is Management Consultancy?'; Tour of Houses of Parliament; 'Futures Day' (career sector insight) (x2)			Y12	Y13			

Sixth cohort of SMF (2012 cohort)	650 pupils	APP (expansion of events and investment bank residential and Whitehall programmes) Events: Thinking of Oxbridge and the Russell Group (x2 sessions); University visit (x7); Making an Impression Workshop (x3); Interview Skills (x2); 'What is Management Consultancy?'; Tour of Houses of Parliament; 'Futures Day' (x6); Discussion group (x3)				Y12	Y13		
Seventh cohort of SMF (2013 cohort)	675 pupils	APP (expansion of events and investment bank, legal, and Whitehall programmes) Events: Launch/Thinking of Oxbridge and the Russell Group (x4 sessions); University visit (x9); Making an Impression workshop (x3); Interview Skills (x3); No 10 Visit, 'Futures Day' (x6); Discussion group (x1); Careers Fair					Y12	Y13	
Eighth cohort of SMF (2014 cohort)	858 pupils	APP (expansion of events and investment bank, legal, engineering and Whitehall programmes) Events: Launch/Thinking of Oxbridge and the Russell Group (x7 sessions); University visit (x16); University and Careers Fair; Making an Impression workshop (x2); Interview Skills (x5); Spectator Tea, 'Futures Day' (x9); Discussion group (x6); Career Insight Day; Pre-University workshop						Y12	Y13

2. Methodology

2.1 The evaluation problem

Evaluating the impact of a particular programme (including the work of the SMF) has a number of challenges. In an ideal world, one would compare the outcomes of individuals who participated in the programme (or received the 'treatment') with the outcomes of the same individuals had they not participated in the programme (the 'counterfactual outcome'). This is, of course, impossible; an individual either participates in the programme or does not, so one cannot observe outcomes for the same group of individuals under both scenarios.

One way to address this problem is to construct an appropriate comparison group who 'look' as similar as possible to programme participants. The idea is to provide a 'counterfactual outcome' to proxy as closely as possible what would have happened to participants' outcomes had they not participated in the programme, and to minimise the selection bias inherent in evaluating a programme in which participants have chosen to take part.

The construction of an appropriate comparison group is therefore the foundation of a robust evaluation. Ideally, the comparison group should be identical to the treatment group in all respects – in terms of characteristics that are both observed and unobserved to the researcher – except that one group received the treatment and the other did not. Perhaps the best way of doing this is for the treatment to be randomly assigned. In the absence of such an experiment, however, a wide range of techniques has been developed to enable researchers to construct appropriate comparison groups and hence to identify a suitable counterfactual outcome to proxy what would have happened to the outcomes of programme participants had they not participated in the programme.

This report uses a technique called propensity score matching (PSM) to 're-weight' individuals from a potential comparison group so that they 'look' as similar as possible to SMF participants in terms of observable characteristics.[4] The key to this approach is that we must have access to a rich enough set of characteristics that we are able to account for all the important ways in which SMF participants differ from individuals in the potential comparison group. In particular, we must be able to account for all the factors that determine whether or not these individuals chose to participate in the programme, and whether they chose to respond to the survey that collected information on their university destinations and on their education and employment prospects. The underlying assumption is one of 'selection on observables'; that is, conditional on the characteristics included in our model, there are no differences in unobservable characteristics (such as motivation and innate ability), on average, between the treatment and control groups. This is a fundamentally untestable assumption, but one which relies primarily on the richness of the data available.

To construct an appropriate comparison group, we must therefore have access to a dataset that contains: (a) a rich set of background characteristics to help identify

[4] Propensity score matching is discussed in more detail in Appendix A.

individuals who 'look' like SMF programme participants; (b) their subsequent education outcomes.

Section 2.2 outlines the data used to construct a credible control group to evaluate the impact of SMF on education outcomes, Section 2.3 outlines the method for doing so and Section 2.4 summarises assumptions under which this approach will enable us to identify the causal effect of the SMF programmes on university outcomes.

2.2 Data

Information about SMF participants was made available by the SMF using information supplied to them from participants and their parents and from their schools/colleges. The information about each SMF cohort varies slightly (summarised in Appendix B), but includes for all cohorts a detailed set of pupil and neighbourhood characteristics. These are summarised in Table 2.1.

The university destination survey was completed soon after A-level results day (around September 2010 for the 2009 cohort, September 2011 for the 2010 cohort, and so on), and therefore captures immediate decisions and acceptances for the SMF cohort. Pupils who decide to reapply or take a gap year will therefore be recorded as not attending HE, although they may have attended HE in a subsequent year.

To help gather a fuller picture of education outcomes, additional data collection took place for SMF participants who did not respond to the survey. This data collection was conducted by SMF between November 2019 and January 2020 and involved searching online sources (e.g. LinkedIn or university web sites) for information about HE outcomes. For example, professional young people are most likely to have an online professional profile, so this method of data collection may disproportionately represent those with successful outcomes from the programme.[5]

For all of our analysis, we construct a credible control group of young people from linked individual-level administrative data from schools and universities, specifically the National Pupil Database (NPD) and the Higher Education Statistics Agency (HESA) student record data. The NPD comprises an annual census of pupils attending state schools in England, together with the results of national achievement tests for all pupils in England who sat them (including both state and private school pupils). The HESA data provide an annual census of all students attending HE institutions throughout the UK.

For this project, these linked datasets enable us to follow pupils in England who were in Year 12 between 2008–09 and 2014–15 through the education system, from age 11, through secondary school and post-compulsory education, and on to potential HE participation anywhere in the UK. We observe HE participation for two academic years after A-level completion.

[5] To help assess how much of an issue this might be, we compare the background characteristics of SMF participants who were and were not successfully traced online (see Appendix C). Overall, background characteristics looks similar between the two groups across cohorts, with the exception that those that not traced online are more likely to have been eligible for FSM in some cohorts, and, in some cohorts, have slightly lower average attainment. Of course, this can only provide partial reassurance: there may still be differences in unobserved characteristics and unobserved outcomes between the two groups.

The combined dataset includes public examination results (GCSEs, A-levels and equivalent vocational qualifications) at ages 16 and 18 for all pupils who sat them, as well as an identifier for the school in which they did so. For state pupils, it also includes a variety of background characteristics – such as gender, date of birth, ethnicity, special educational needs (SEN) status, eligibility for FSM, whether English is an additional language (EAL) and contextual information about the pupil's local neighbourhood. It also includes information on university destination and subject choice in a similar format to that collected by the SMF.

Outcomes

The impact of the SMF programmes is evaluated according to the following outcomes, which are likely to be predictive of professional occupations later in life.

Defined for all pupils

- **HE participation**: defined as enrolling on a first degree in a UK HE institution included in the HESA data at age 18 or 19. This is equivalent to progressing from A-level to HE the year after A-level completion, or after a 'gap year'.

Defined only for those pupils who go to university

- **Russell Group HE participation**: defined as enrolling on a first degree in a UK HE institution that is part of the Russell Group included in the HESA data at age 18 or 19.

- **'Top 10' participation**: defined as enrolling on a first degree in a UK HE institution that was one of the ten most visited institutions by top employers in any of the academic years relevant to the SMF cohorts of interest (2008–09 to 2014–15) included in the HESA data at age 18 or 19.[6] It is important to note that this ranking is based on employer visits rather than on rankings of the quality of education received at each university. The focus on employer visits reflects the SMF's ultimate objective of helping its participants to access professional occupations.

- **Participation outside home region**: defined as enrolling on a first degree in a UK HE institution that is outside the home region, included in the HESA data at age 18 or 19.

- **Subject choice**: defined as binary indicators for enrolling on a first degree in each of the following subject areas: business and finance, engineering, law, and mathematics. The classification of courses into these aggregate groups is given in Appendix D.

Note that all outcomes are defined according to whether the student participates in HE at age 18, which excludes those who choose to take a gap year or to reapply. This is necessary because information about HE participation is available for the SMF cohort only soon after university destination choices are made and not in subsequent years. However, this may introduce some bias to our estimates if SMF participants are more likely to take a gap year or to reapply once A-level grades are known than students in the selected comparison group.

[6] These are: University of Bath; University of Birmingham; University of Bristol; University of Cambridge; University of Durham; University of Leeds; University College London; Imperial College of Science, Technology, and Medicine; University of Manchester; University of Nottingham; University of Oxford; and University of Warwick.

Common sample

The impact of the SMF programmes on all outcomes defined above are estimated from a common sample, where individuals are included if KS4 and KS5 results are known, and university participation, destination and subject choice are known. This ensures that differences in estimates between outcomes are truly due to differences and not due to changes in the sample. Table E.1 in Appendix E shows the change in the common sample as these increasing conditions are imposed. For the control group, the majority of individuals are excluded from the common sample because they do not achieve at least one pass at A-level. This is desirable because these individuals would not form a suitable control group for the SMF cohorts. For the treatment group, the majority of individuals are excluded because education outcomes are not observed.

2.3 Construction of a suitable comparison group

We use these data to create a group of individuals who are as similar as possible to the SMF cohorts. The idea is that the outcomes of these individuals act as a proxy for what would have happened to the outcomes of the SMF participants had they not participated in the SMF programmes. Hence, a comparison of the outcomes of the two groups should provide a reasonable indication of the impact of the SMF programmes.

As outlined above, SMF participants must be predicted to achieve at least one A grade and two B grades at A-level. For cohorts prior to 2012, participants must also have been eligible for FSM or the EMA, which was assigned on the basis of household income. For the 2012, 2013, and 2014 cohorts, participants must be eligible for FSM or be in the first generation of their family to attend university where their school is relatively deprived.[7] Eligibility for the EMA or family history of university attendance is not observed for the potential comparison group of pupils. We must instead rely on the ability of neighbourhood characteristics (such as the proportion of adults in the local area with a degree level qualification and local area deprivation) to find a suitable comparison group.

Table 2.1 summarises the variables that we use to construct a group of individuals who are most similar to the SMF participants. Note that these characteristics are largely unaffected by participation in the SMF programme, as they are fixed over time. The exception is attainment at A-level, which could be influenced by higher aspirations; however, A-level subject choice would be unaffected given the timing of involvement with the SMF.

We restrict attention to pupils in state schools who achieved at least one passing grade at A-level. In addition, we exclude all pupils in schools that have ever been involved with the SMF. This is because potential SMF participants are likely to hear about the SMF programme through their school, and pupils who have heard about the programme but have decided not to apply would not form a suitable control group for SMF participants as they are likely to have different unobservable characteristics, such as motivation or receptiveness to mentoring.

Amongst these pupils, the preferred control group is defined on the basis of PSM using nearest-neighbour matching according to the following characteristics: eligibility for FSM,

[7] Whether a school is relatively deprived is defined by whether the percentage of pupils eligible for FSM at the school is higher than the regional average.

ethnic group, London region, local area characteristics (percentage of adults with professional occupations and degree level qualifications;[8] Income Deprivation Affecting Children Index – hereafter IDACI – decile), and prior attainment (lowest grade at GCSEs from five subjects; lowest grade at GCSEs from eight subjects; GCSE mean grade; A-level mean grade; combinations of A-level grades achieved; whether enrolled in an A-level in maths and science; grade in A-level English and whether it was an A; grades in GCSE English and maths and whether they were A grades).

We believe the differences presented for this group are most likely to provide realistic estimates of the impact of the SMF programmes on university participation and other HE outcomes (under the assumptions outlined below).

2.4 Caveats

There are general caveats associated with this estimation method. As discussed in Section 2.1, this comparison of outcomes between SMF participants and this similar group of pupils allows one to identify the causal impact of involvement with the SMF, under a number of assumptions.

First, to interpret these estimates as the causal impact of the SMF programmes requires that participants who complete the SMF university destinations survey or have an online profile are similar in observable and unobservable ways to participants who do not complete the survey or have an online profile. This means that, under this assumption, there is no bias introduced from non-random non-response. This assumption is unlikely to hold in practice, however; for example, young people who fill in the survey may find the SMF programmes more valuable than those who do not, or young people who are accepted into their first-choice university may feel more positive about the experience and willing to respond than those who are not (although anecdotal evidence from the SMF suggests that this is not universally true). Those with an online profile may be more likely to have found a professional career than those who do not.

Table B.2 in Appendix B shows that, based on characteristics that are observed for SMF participants, those who complete the university destinations survey (and have other relevant information) are more likely to take maths and a science A-level and, for the 2013 cohort, more likely to be white and live in more disadvantaged neighbourhoods on average. If these characteristics are correlated with education participation, then our estimates of the impact of the SMF programme are likely to be biased.

Table C.1 in Appendix C shows the equivalent table for those who are found online and those who are not. Overall, there are few statistically significant differences in observable background characteristics between the two groups, although those without an online profile are less likely to have taken maths or a science A-level in some cohorts, and are more likely to have been eligible for FSM. Of course, there may be differences between the groups in ways that are unobservable to us, including how well they engaged with the SMF programme.

[8] ACORN provides a classification of postcodes on the basis of demographic data, social factors, population and consumer behaviour; for further details, see http://acorn.caci.co.uk/.

Second, for these estimates to reflect the causal impact of the SMF we must assume that, prior to the programme, SMF participants and our comparison group of similar young people have the same unobservable characteristics (such as motivation and desired career) on average, conditional on characteristics that are observable to us. For example, we require that young people's motivation is the same across the two groups, on average, conditional on GCSE and A-level grades. Despite the rich data available to us, there are likely to be some characteristics of SMF participants that are systematically different to the group of pupils who look most similar to them on the basis of observable characteristics in administrative data. This is because SMF participants have been sufficiently motivated (or targeted by teachers) to apply to the programme, and are perhaps more likely to have a professional career in mind prior to participation.

Table 2.1 highlights some of these characteristics. If these characteristics influence education outcomes (above the characteristics we are able to account for) and also influence the probability of participating with the SMF, the estimates we present will be biased. If they are biased, then it is more likely that the estimates are biased upwards (i.e. that the true impact of the SMF programmes is lower than the estimate we present) rather than biased downwards. This is because many of the unobservable characteristics have a positive influence on university participation and facilitating subject choice, and also have a positive influence on application to the SMF programme.

Table 2.1. Summary of individual and school characteristics used to create a credible control group

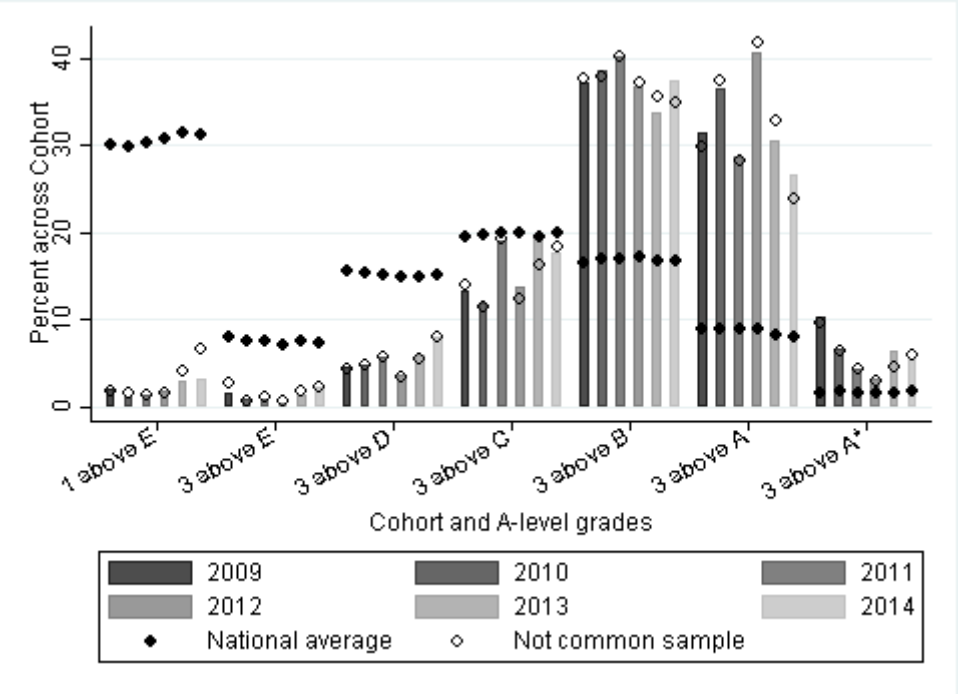
Observable/available characteristics	Unobservable/unavailable characteristics
Attainment at the end of compulsory schooling: number, subject and grade for GCSE qualifications. We construct a credible control group according to individual's best eight results.	
Attainment at post-compulsory schooling: number, subject and grade for A-level. We construct a credible control group according to all of the individual's results.	
Individual deprivation: indicator for eligibility for FSM.	Individual deprivation: household income.
Neighbourhood context: rank of deprivation according to the IDACI; the proportion of adults with a university qualification; the proportion of adults with professional occupations.	Household context: parents' level of education; parents' aspirations.
Individual characteristics: ethnic group.	Individual characteristics: motivation; career aspirations.
School characteristics: indicator for ever having a participating pupil (pupils from these schools are excluded from the potential control group).	School characteristics: availability and quality of careers service; teacher involvement and encouragement.

3. Characteristics of the SMF cohorts

In order to contextualise our estimates of the effect of the SMF programmes, we first describe the characteristics of the pupils participating in the APP over time.

Figure 3.1 summarises the A-level attainment of SMF participants over time. Consistent with the SMF selection criteria that SMF participants must be predicted to achieve at least one A grade and two B grades, it shows that the majority of SMF participants achieve at least three A-levels at grade B or above. A non-negligible proportion of SMF participants also achieve between three A-levels at grade C and three A-levels at grade B, which suggests that some participants do not meet their predicted grades. Few participants achieve below this level, which implies that a credible control group should take attainment at A-level into account.[9] There is some variation in the distribution of attainment across cohorts, with slightly lower attainment for the 2012 cohort.

Figure 3.1. Attainment at A-level, by cohort



Note: Each bar represents the percentage of the relevant SMF cohort used in the analysis that achieves the level of attainment shown on the *x*-axis. These categories are not cumulative. For example, '3 above A' refers to achieving at least three A grades at A-level, but not achieving as highly as three A* grades at A-level. The bars show the percentages for the common sample of SMF participants. The white diamonds show the percentages for all SMF participants (including those excluded from the common sample.) The national average among pupils who enrol in any A-level course is shown by the black diamonds.

Source: Authors' analysis using NPD–HESA data and data collected by the SMF on programme participants.

[9] An alternative argument is that A-level attainment could be positively affected by participation in the programme. Accounting for A-level attainment when creating a matched comparison group would therefore match SMF participants to more able peers (who have achieved the same high level of attainment without access to the SMF programme), and hence understate the impact of the SMF programme. Accounting for A-level attainment when creating our preferred control group reflects our assumption that A-level attainment is unlikely to be significantly affected through participation in the SMF programme, as the participants have been predicted to achieve a high level before application.

The black diamonds on the figure show the equivalent achievement for the national population of A-level pupils. SMF participants have higher achievement than the national population of A-level pupils, on average, which is consistent with the programme's eligibility criteria. Across the national population of A-level pupils, around 30% of pupils achieve between one E and three D grades at A-level, in contrast to the SMF participants where less than 3% of each cohort achieves this level. At the other end of the distribution, around 1.5% of the national population of A-level pupils achieve at least three A* grades, compared with between 3% and 6.5% of SMF cohorts. As prior attainment strongly predicts progression to HE (Chowdry et al., 2013), this demonstrates the importance of carefully constructing a control group with similar prior attainment.

The white diamonds on the figure show the equivalent achievement for the whole SMF sample, rather than the common sample of SMF participants used in the main analysis shown in the bars. The figure shows that the distribution of attainment is roughly similar between the two groups, although there are some minor differences. The 2013 and 2014 cohorts have a higher percentage of pupils with only one A-level grade above E in the full sample compared with the common sample, for example.

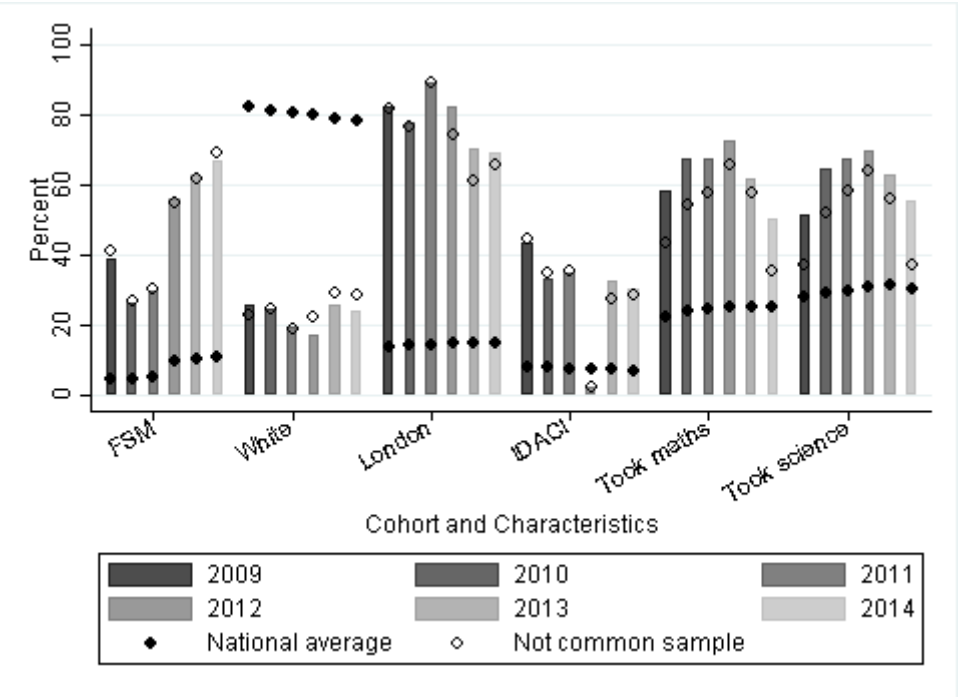
The eligibility criteria for SMF programmes also include measures of individual deprivation, to reflect the SMF's aim of increasing access to professional occupations for those from disadvantaged backgrounds. Figure 3.2 summarises the background characteristics of each SMF cohort. The percentage of participants (ever) eligible for FSM increases in 2012, which is due to the change in eligibility criteria for this cohort (from contemporaneous eligibility to an expanded measure of 'ever eligible in the previous six years'). The national averages are again shown by the black diamonds on the figure. As expected, the percentage of pupils eligible for FSM (or ever eligible for FSM) is dramatically higher in the SMF sample than the national population of A-level pupils. For the 2014 cohort, for example, 67% of SMF participants had ever been eligible for FSM, compared to 11% of the national population of A-level pupils.

The SMF sample has markedly fewer white British pupils than the whole A-level population, across all SMF cohorts. Around 25% of the SMF participants in each cohort are white British, compared to around 80% of the national A-level population. This is an important factor to account for when constructing a credible control group, as previous research shows that pupils from ethnic minority backgrounds are more likely to attend HE, conditional on their prior attainment (Crawford and Greaves, 2015).

Consistent with the geographic expansion of the SMF, the percentage of participants in London is lower in the 2013 and 2014 cohorts than in earlier cohorts (around 70% compared with a peak of 89% for the 2011 cohort). The percentage in London remains much higher than for the national population of A-level pupils, however (around 15%). SMF participants are more than three times more likely than the A-level population as a whole to come from the most disadvantaged 10% of neighbourhoods (based on the IDACI), though this difference has narrowed over time.[10]

[10] The lower percentage for the 2012 cohort reflects a large amount of missing data on neighbourhood for this cohort.

Figure 3.2. Background characteristics of SMF participants, by cohort



Note: 'FSM' refers to 'eligible for Free School Meals at any time in the past six years' for the 2012, 2013 and 2014 cohorts, and 'eligible for Free School Meals at the time of application' for the 2009, 2010 and 2011 cohorts. The bars show the percentages for the common sample of SMF participants. The white diamonds show the percentages for all SMF participants (including those excluded from the common sample.) The national average is shown by the black diamonds.

Source: As for Figure 3.1.

Again, these geographical factors are important to account for when constructing a credible control group, for many reasons. First, there is a correlation between neighbourhood characteristics and educational attainment (Nieuwenhuis and Hooimeijer, 2016). Second, London is likely to have distinct opportunities for work experience and proximity to many universities. In addition, the characteristics of pupils in London or the quality of London schools may also lead to higher post-compulsory education outcomes.[11]

SMF participants are two to three times more likely to take mathematics and science A-level subjects than the national population of A-level pupils. This is slightly lower for the earliest and latest cohort in the sample, which may be due to missing data rather than attainment. A-level subject choice is likely to affect the subject and institution choice of the SMF participants, and so is important to account for when constructing a credible control group.

For all SMF cohorts, therefore, it is important to find a credible control group to act as the counterfactual for the participants' outcomes that is similar in prior attainment, A-level subject choice, own and neighbourhood deprivation, ethnic group and home region.

[11] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321969/London_Schools_-_FINAL.pdf.

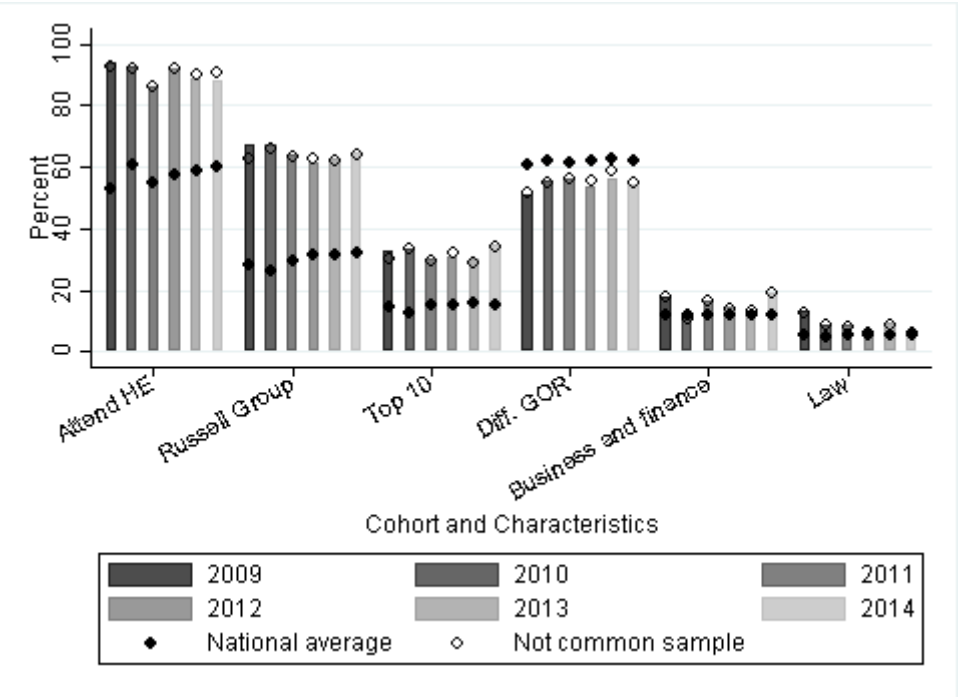
As for Figure 3.1, the common sample of SMF participants used for analysis (shown by the bars in Figure 3.2) has very similar background characteristics to the whole sample of SMF participants, shown by white diamonds. The most noticeable exception is A-level subject choice, where those in the analysis sample are more likely to have taken maths or science subjects than those excluded from the common sample. This pattern is also seen in Table B.2 in Appendix B, where those in the common sample have slightly higher average attainment than those excluded from the common sample. This means that the estimated effects on education outcomes in our main results are for a non-random sample of SMF participants with slightly higher prior attainment than the whole sample of SMF participants. Changes in the background characteristics of the SMF participants across cohorts (for example, the decline in percentage of students from London) may influence the estimated impact of the programme(s) if participants with particular backgrounds are affected differently. We present the impact of the SMF programmes separately by cohort for this reason. Caution is again needed in interpreting these results, however: it is difficult to disentangle the changing characteristics of the participants from the changing emphasis of the programmes over time.

Figure 3.3 shows the equivalent figures for HE outcomes. Over 85% of each SMF cohort attend university in the two years following A-levels, compared to around 60% of the national population of A-level pupils. Of course, this partly reflects the high prior attainment of the SMF cohorts. Conditional on going to university, over 60% of SMF students attend a Russell Group institution. This is a striking figure, around double the overall share of university students. There is a similar picture for those attending a 'Top 10' institution that is most visited by employers each year. Again, SMF participants are around twice as likely to attend one of these institutions targeted by employers than the national population of A-level pupils that attend university. These outcomes could be affected by prior attainment, as such selective institutions are accessible mainly to those with high prior attainment.

Slightly fewer SMF students attend an institution outside their home region – around 55% compared with around 60% of the national population of A-level pupils that attend university. This small difference could be due to the disproportionate number of SMF participants from London. Perhaps because of the variety of institutions available in London or because of cultural norms, young people from London are less likely than those elsewhere in England to move to a different region to attend university (Crawford and Greaves, 2015). This pattern is also shown in Appendix F, where high-attaining non-white students from outside London are around one-third more likely to attend a university outside their home region than equivalent students from London.

The final bars show the percentage of the SMF cohort that choose a 'business and finance' and 'law' subject, relative to the national population of A-level pupils. The percentages are very slightly higher for the SMF cohort relative to the national population of A-level pupils that attend university.

Figure 3.3. Education outcomes for SMF participants, by cohort



Note: 'Attend HE' means the student attends higher education (university) in the first or second year after A-level completion. All other outcomes are conditional on attending HE. 'Russell Group' means the student attends an institution that is part of the Russell Group. 'Top 10' means the student attends an institution that is one of the top 10 most visited by employers. 'Diff. GOR' means that the student attends an institution in a different Government Office Region to their region of residence for A-levels. The definitions for 'Business and finance' and 'Law' subjects can be found in Appendix D. The bars show the percentages for the common sample of SMF participants. The white diamonds show the percentages for all SMF participants (including those excluded from the common sample.) The national average is shown by the black diamonds.

Source: As for Figure 3.1.

3.1 Successful construction of a suitable comparison group

In the previous section, we showed that SMF programme participants have, on average, better educational outcomes than the national average for A-level pupils. But we also showed that SMF participants were quite different from average in dimensions such as their prior attainment, location, level of disadvantage and ethnicity. In order to get a fair estimate of the impact of the SMF programme on young people's outcomes, we need to account for the different characteristics of programme participants by constructing a suitable comparison group.

Table 3.1 shows the characteristics of the treatment and control groups after the matching process to construct the preferred control group for each cohort. It shows that the preferred control group for each cohort is very well balanced with the SMF cohort, because the pupils have very similar prior attainment, ethnicity and neighbourhood characteristics. As noted, this does not ensure that SMF participants are also very similar to our preferred control group in ways that are unobservable to us (such as their motivation), but it does ensure that they are balanced in these very important observable ways.

Table 3.1. Comparison of SMF APP participants with preferred control group

Characteristics	2009 cohort			2010 cohort			2011 cohort		
	SMF participants	Preferred control group	Difference	SMF participants	Preferred control group	Difference	SMF participants	Preferred control group	Difference
GCSE points (grade) (average)	52.91 (A)	53.01 (A)	−0.10	53.03 (A)	52.99 (A)	0.04	52.61 (A)	52.72 (A)	−0.12
GCSE points (grade) (lowest of best eight)	42.26 (C)	41.67 (D)	0.58	40.93 (D)	40.61 (D)	0.32	41.91 (D)	42.32 (C)	−0.41
GCSE points (grade) (lowest of best five)	53.09 (A)	53.15 (A)	−0.06	53.14 (A)	53.17 (A)	−0.03	52.75 (A)	52.85 (A)	−0.10
GCSE points (grade) in English	52.35 (A)	52.62 (A)	−0.27	52.28 (A)	52.29 (A)	0.00	51.46 (B)	51.84 (B)	−0.37
GCSE points (grade) in maths	53.93 (A)	54.05 (A)	−0.12	53.85 (A)	54.04 (A)	−0.20	53.67 (A)	54.20 (A)	−0.53*
A-level points (grade) (average)	113.08 (B)	113.29 (B)	−0.21	112.68 (B)	112.54 (B)	0.14	109.06 (B)	109.51 (B)	−0.45
Take A-level in maths (prop.)	0.59	0.58	0.01	0.68	0.67	0.01	0.67	0.66	0.01
Take a science A-level (prop.)	0.52	0.52	0.00	0.65	0.66	−0.01	0.68	0.69	−0.01
Eligible for FSM (prop.)	0.39	0.38	0.01	0.26	0.26	−0.01	0.29	0.29	0.00
White British ethnic group (prop.)	0.27	0.27	0.00	0.25	0.25	0.00	0.20	0.21	0.00

Neighbourhood deprivation decile (IDACI)	8.15	8.10	0.05	8.15	8.15	0.00	8.22	8.22	0.00
% in neighbourhood:									
Own/mortgage for home	26.41	28.65	−2.24	29.08	29.48	−0.39	28.78	29.36	−0.57
Professional occupation	20.99	21.08	−0.09	21.59	21.57	0.02	21.19	21.21	−0.02
Degree	11.27	11.40	−0.13	10.46	10.51	−0.05	10.57	10.61	−0.04
A-level: three above C (prop.)	0.13	0.13	0.00	0.11	0.11	0.00	0.19	0.19	−0.01
A-level: three above B (prop.)	0.38	0.39	−0.02	0.39	0.40	−0.01	0.40	0.39	0.01
A-level: three above A (prop.)	0.31	0.30	0.01	0.36	0.36	0.00	0.29	0.29	−0.01
A-level: three above A* (prop.)	0.11	0.11	0.00	0.07	0.06	0.01	0.05	0.05	0.00
London region (prop.)	0.82	0.81	0.01	0.77	0.77	0.00	0.89	0.89	0.00

Characteristics	2012 cohort			2013 cohort			2014 cohort		
	SMF participants	Preferred control group	Difference	SMF participants	Preferred control group	Difference	SMF participants	Preferred control group	Difference
GCSE points (grade) (average)	52.39 (A)	52.54 (A)	–0.15	52.36 (A)	52.29 (A)	0.07	52.13 (A)	52.04 (A)	0.09
GCSE points (grade) (lowest of best eight)	35.95 (D)	35.47 (D)	0.48	38.26 (D)	37.80 (D)	0.46	37.89 (D)	37.32 (D)	0.56
GCSE points (grade) (lowest of best five)	51.55 (B)	51.79 (B)	–0.24	51.95 (B)	51.91 (B)	0.04	51.81 (B)	51.54 (B)	0.26
GCSE points (grade) in English	51.36 (B)	51.34 (B)	0.02	51.34 (B)	51.32 (B)	0.02	51.58 (B)	51.48 (B)	0.10
GCSE points (grade) in maths	53.66 (A)	54.41 (A)	–0.76**	53.06 (A)	53.57 (A)	–0.51	53.36 (A)	53.17 (A)	0.20
A-level points (grade) (average)	108.73 (B)	108.75 (B)	–0.02	110.07 (B)	109.56 (B)	0.51	107.31 (B)	107.02 (B)	0.29
Take A-level in maths (prop.)	0.73	0.75	–0.01	0.62	0.63	0.00	0.51	0.52	0.00
Take a science A-level (prop.)	0.71	0.71	0.00	0.62	0.62	0.00	0.55	0.55	0.00
Ever eligible for FSM (prop.)	0.55	0.57	–0.02	0.63	0.63	0.00	0.68	0.67	0.00
White British ethnic group (prop.)	0.17	0.17	0.00	0.27	0.27	0.00	0.26	0.24	0.02

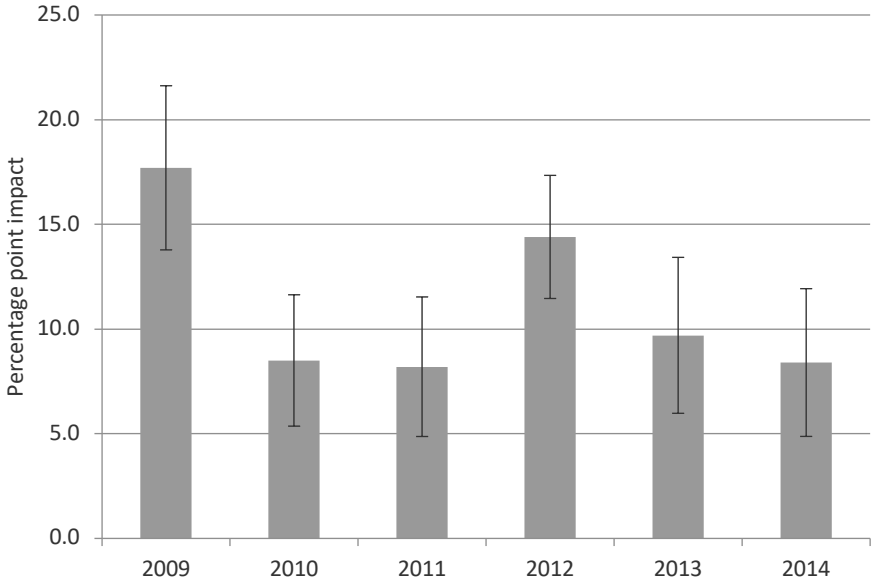
Neighbourhood deprivation decile (IDACI)	8.51	8.48	0.03	8.15	8.22	−0.07	7.95	8.01	−0.06
% in neighbourhood:									
Own/mortgage for home	27.18	27.77	−0.58	28.00	27.74	0.26	27.20	28.02	−0.82
Professional occupation	20.10	20.04	0.06	19.35	18.93	0.42	19.25	18.94	0.30
Degree	10.41	10.32	0.09	10.98	11.06	−0.08	10.63	10.52	0.12
A-level: three above C (prop.)	0.13	0.15	−0.02	0.18	0.19	−0.01	0.17	0.17	0.00
A-level: three above B (prop.)	0.37	0.36	0.01	0.36	0.36	0.00	0.37	0.36	0.01
A-level: three above A (prop.)	0.41	0.39	0.01	0.31	0.29	0.01	0.27	0.27	0.01
A-level: three above A* (prop.)	0.03	0.03	0.00	0.07	0.07	0.00	0.06	0.05	0.00
London region (prop.)	0.83	0.82	0.00	0.68	0.68	0.00	0.68	0.68	0.00

Note: *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively. A common sample is imposed: individuals are included if KS4 and KS5 results are reported, and university destination and subject choice is known. A higher IDACI decile corresponds to a more deprived area. ‘Prop.’ refers to proportion (between 0 and 1).

4. Estimated impact of SMF participation on university participation

Figures 4.1–4.7 show education outcomes of each SMF cohort to our preferred (cohort-specific) control group (described in Chapter 3). The difference in education outcomes between the SMF cohort and this group of pupils is represented by the bars in each panel. Figures 4.2–4.7 have two sets of bars. For these figures, the first set of bars shows the results without conditioning on attending HE: the outcomes for the SMF cohort compared with the whole control group, whether or not they attend HE. The second set of bars shows the results conditional on attending HE: the outcomes for the SMF cohort compared with the control group that attends HE.

Figure 4.1. Estimated impact of SMF programmes on university participation at age 18 or 19



Note: A common sample is imposed: SMF participants are included if KS4 and KS5 results are reported, and university destination and subject choice are known. Russell Group participation, 'Top 10' participation and subject choice outcomes are defined only for pupils who go on to university at age 18. The preferred control group is defined from PSM using nearest-neighbour matching according to the following characteristics: eligibility for FSM in the past six years, ethnic group, London region, local area characteristics (percentage of adults with professional occupations and degree-level qualifications; IDACI decile) and prior attainment (lowest grade at GCSE from five subjects; GCSE mean grade points; A-level mean grade points; whether three C/B/A/A* grades achieved at A-level; whether the following subjects – a science A-level, A-level maths, A-level English, GCSE English and GCSE maths – were taken and, for GCSE subjects and A-level English, whether the pupil received an A grade if so). Matching characteristics for the 2012 cohort exclude neighbourhood characteristics as address information is largely missing for this cohort. The mean of the dependent variable for the control group is: 76.5% for 2009; 83.6% for 2010; 79.9% for 2011; 78.0% for 2012; 78.3% for 2013; 79.4% for 2014.

The statistical significance of the difference in outcomes between the SMF cohort and the control group is represented by the confidence interval (black line) centred around the top of each bar. Where the difference is statistically significant from zero, the confidence interval does not cross zero.[12] This means that we can be confident that the difference between the two groups is not zero.[13]

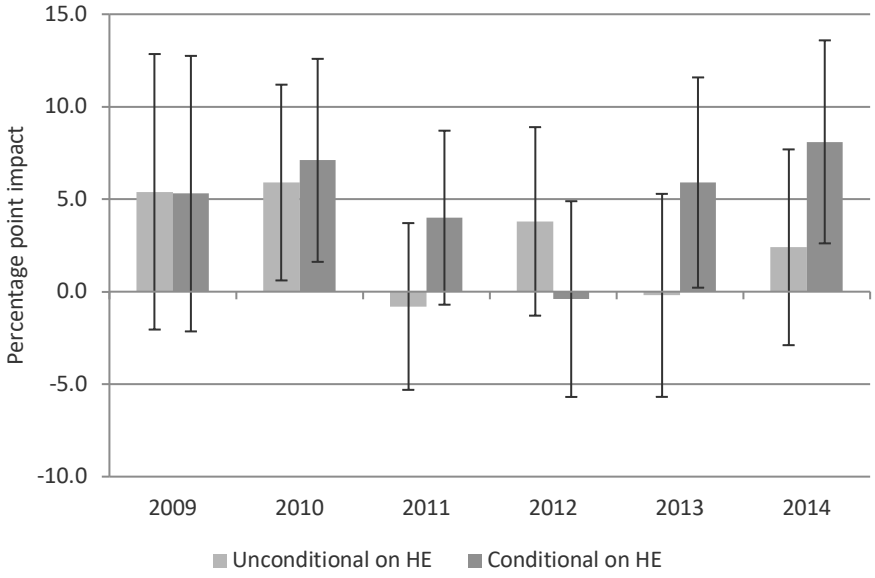
Relative to this preferred control group, Figure 4.1 shows that SMF participants were significantly more likely to attend university for all of the cohorts we consider. The size of this impact ranges from 8.2 percentage points (in 2011) to 17.7 percentage points (in 2009). These are substantial effect sizes on top of an already-high level of university attendance in the comparison group (around 80% across all cohorts). For example, across our cohorts of interest, there is around an 8 percentage point difference in the national population in the probability of attending university between those achieving at least three B grades (81%) and at least three A* grades at A-level (88%) (see Appendix F). The impact of the SMF programmes on increasing university participation is therefore roughly equivalent to increasing attainment for all pupils to at least three A* grades at A-level from at least three B grades.

Among the majority of students who do attend university one or two years after finishing A-levels, there is also some evidence that the SMF programmes have increased participants' chances of attending high-status institutions. Conditional on attending HE, we estimate that the SMF programmes had a positive impact on the chances of attending a Russell Group university, but these effects are only statistically significant for the 2010, 2013 and 2014 cohorts, with other cohorts aside from 2012 close to statistical significance. Unconditionally on HE attendance, the findings are generally positive although not statistically significant. Overall, given the prestige of attending a Russell Group institution (around a quarter of all those who attend university attend a Russell Group institution), these findings are sizeable and impressive, despite lacking statistical power. This size of the impact shown in Figure 4.2 for many cohorts would eliminate the difference in Russell Group participation between white students with at least three A grades at A-level, eligible or not for FSM (61% versus 66%). There is a strong gradient of Russell Group attendance by A-level attainment. For our cohorts of interest, Appendix F shows that 91% of those with at least three A* grades at A-level attend a Russell Group institution (conditional on going to university). This falls to 81% of those with at least three A grades, and 65% for those with at least three B grades. An impact of around 5 percentage points is therefore roughly the same as half the difference between those with at least three A grades and at least three A* grades, conditional on attending HE.

[12] These confidence intervals are based on a test that the difference between the SMF cohort and treatment group is zero. This premise is called the null hypothesis. 'Statistical significance' means that we can reject the null hypothesis that the difference between the SMF cohort and treatment group is zero. In this case, the tests are based on a 95% confidence interval. If a difference is statistically significant, this means that the chance of observing a difference at least as large as we do if the null hypothesis is actually true (the difference is actually zero) is less than 5%.

[13] Confidence intervals and significance tests are affected by the size of the sample: when the sample size (or the number of pupils in the SMF cohort) increases, more information is available and so the precision of the estimates increases, and the size of the confidence interval shrinks.

Figure 4.2. Estimated impact of SMF programmes on Russell Group university participation at age 18 or 19



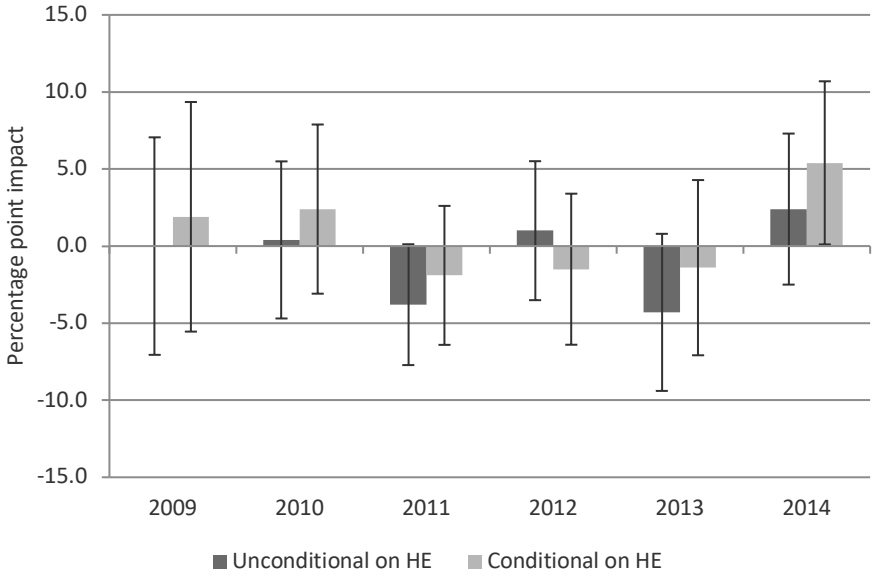
Note: See note to Figure 4.1. We present the results from two specifications. The first considers all SMF and control group students, whether or not they attended HE ('unconditional'). This reflects the overall impact of the SMF programme, including both its impacts on encouraging pupils to attend HE and its impacts on their choices once they get there. The second ('conditional') limits the analysis only to students who chose to attend HE, and so analyses how choices made at university differ between SMF and control group students. The mean of the dependent variable for the control group (unconditional on attending HE) is: 57.4% for 2009; 56.8% for 2010; 55.9% for 2011; 52.1% for 2012; 7.0% for 2013; 54.9% for 2014.The mean of the dependent variable for the control group (conditional on attending HE) is: 61.4% for 2009; 61.1% for 2010; 60.0% for 2011; 61.0% for 2012; 58.7% for 2013; 57.2% for 2014.

In contrast, there is more limited evidence that the SMF programmes increased participation in universities most frequently visited by top employers (Figure 4.3). The estimated effect is positive and close to statistically significant for the 2014 cohort only, conditional and unconditional on attending university. As for Russell Group participation, there is a strong gradient in access to Top 10 institutions by A-level attainment. For our cohorts of interest, Appendix F shows that 77% of those with at least three A* grades at A-level attend a Top 10 institution (conditional on going to university). This falls to 53% of those with at least three A grades, and 34% for those with at least three B grades. The estimated impact of the SMF programmes for the 2014 cohort is therefore roughly one-quarter of the impact of increasing A-level grades to a minimum of three A grades from three B grades for the cohort.

SMF participation does not appear to increase or decrease regional mobility between school and university, relative to the carefully chosen control group, aside from the 2012 cohort (see Figure 4.4). For this cohort, unconditional on attending HE, the SMF participants are 8.4 percentage points more likely to attend university in a different region. Conditional on attending HE, the estimated impact is positive but not statistically significant for later SMF cohorts. Overall, there is positive suggestive, but not conclusive, evidence that SMF cohorts may be more geographically mobile than their carefully constructed control group.

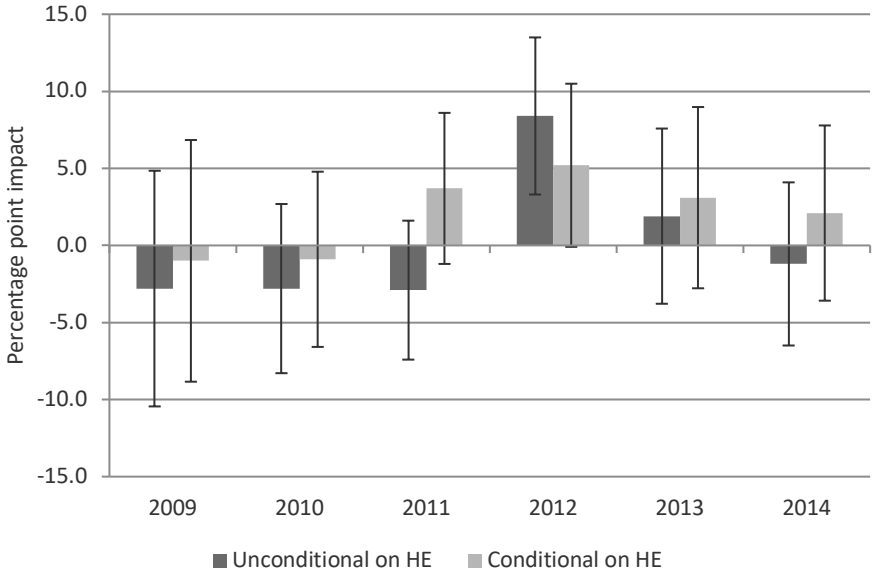
SMF programmes do not explicitly aim to affect subject choice, but formal or informal elements of the programmes may affect subject choice (for example, advice from mentors). Figures 4.5–4.7 consider the differences in subject choice between our preferred control group and the different SMF cohorts. Again, these outcomes are given unconditionally and conditional on going to university. Across both sets of outcomes, the patterns between unconditional and conditional results are similar. Overall, we find relatively limited evidence of impacts on subject choice, and the effects for business and finance, and law are often statistically insignificant and change sign from one cohort to the next. However, there is somewhat stronger evidence that the SMF programmes increased enrolment in politics courses at university; this appears to be especially true in later cohorts, when the effects are both larger and more statistically significant.

Figure 4.3. Estimated impact of SMF programmes on Top 10 university participation at age 18 or 19



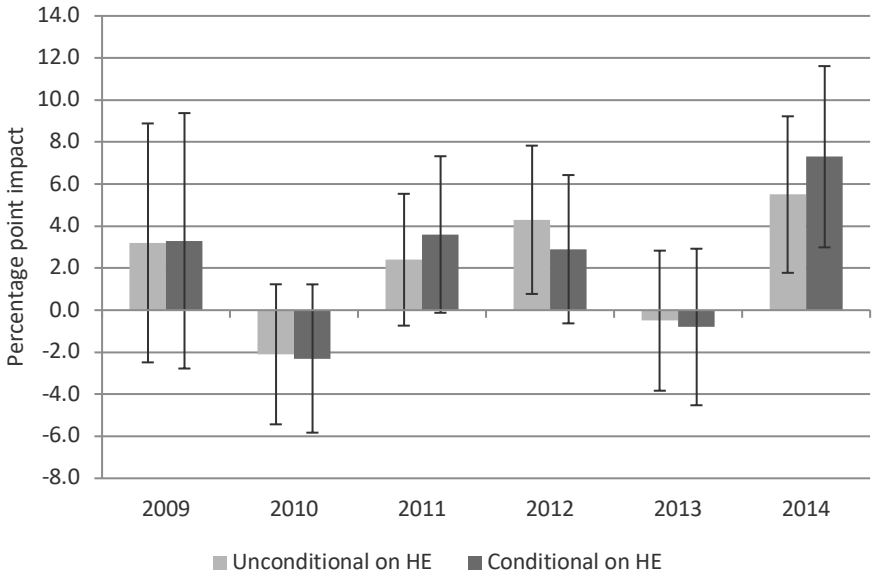
Note: See note to Figures 4.1 and 4.2. The mean of the dependent variable for the control group (unconditional on attending HE) is: 31.4% for 2009; 30.6% for 2010; 29.4% for 2011; 27.3% for 2012; 32.2% for 2013; 28.7% for 2014. The mean of the dependent variable for the control group (conditional on attending HE) is: 31.4% for 2009; 31.2% for 2010; 31.7% for 2011; 32.0% for 2012; 33.2% for 2013; 30.1% for 2014.

Figure 4.4. Estimated impact of SMF programmes on regional mobility in university participation at age 18 or 19



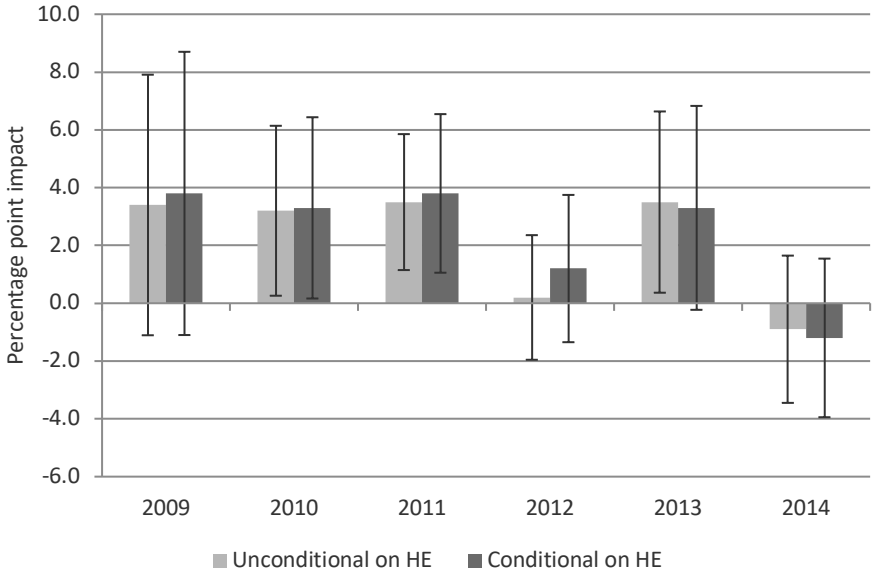
Note: See note to Figures 4.1 and 4.2. Regional mobility is an indicator for attending a university outside the student's home region. The mean of the dependent variable for the control group (unconditional on attending HE) is: 50.1% for 2009; 53.8% for 2010; 51.5% for 2011; 41.4% for 2012; 48.5% for 2013; 48.6% for 2014. The mean of the dependent variable for the control group (conditional on attending HE) is: 51.2% for 2009; 56.3% for 2010; 52.8% for 2011; 48.7% for 2012; 54.2% for 2013; 51.8% for 2014.

Figure 4.5. Estimated impact of SMF programmes on subject choice: business and finance at age 18 or 19, conditional on attending university



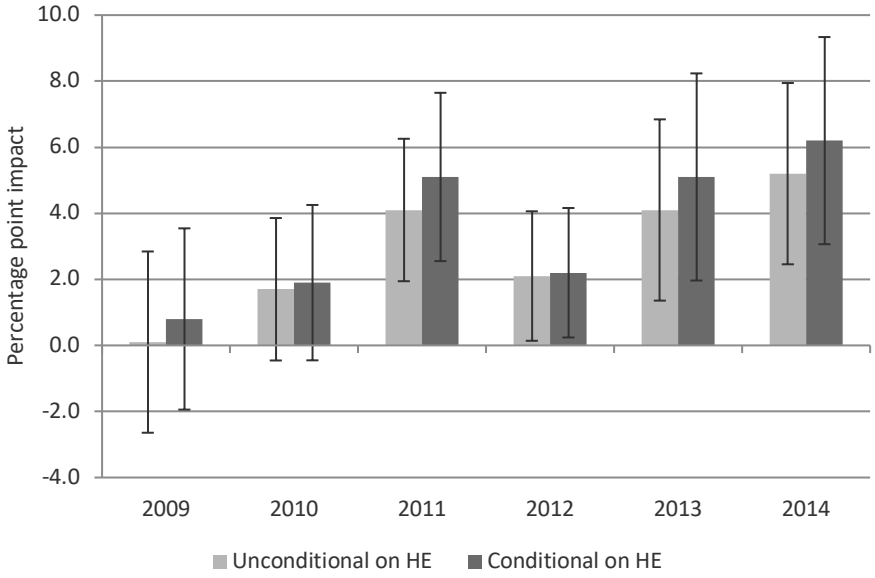
Note: See note to Figure 4.1. The mean of the dependent variable for the control group (unconditional on attending HE) is: 14.3% for 2009; 11.9% for 2010; 11.6% for 2011; 9.9% for 2012; 9.8% for 2013; 10.7% for 2014.The mean of the dependent variable for the control group (conditional on attending HE) is: 15.4% for 2009; 12.9% for 2010; 12.6% for 2011; 12.0% for 2012; 11.4% for 2013; 11.2% for 2014.

Figure 4.6. Estimated impact of SMF programmes on subject choice: law at age 18 or 19, conditional on attending university



Note: See note to Figure 4.1. The mean of the dependent variable for the control group (unconditional on attending HE) is: 7.2% for 2009; 5.2% for 2010; 4.0% for 2011; 4.6% for 2012; 5.0% for 2013; 6.7% for 2014. The mean of the dependent variable for the control group (conditional on attending HE) is: 7.5% for 2009; 5.8% for 2010; 4.9% for 2011; 5.1% for 2012; 6.3% for 2013; 7.8% for 2014.

Figure 4.7. Estimated impact of SMF programmes on subject choice: politics at age 18 or 19, conditional on attending university



Note: See note to Figure 4.1. The mean of the dependent variable for the control group (unconditional on attending HE) is: 3.1% for 2009; 2.4% for 2010; 2.6% for 2011; 1.9% for 2012; 2.9% for 2013; 3.3% for 2014. The mean of the dependent variable for the control group (conditional on attending HE) is: 2.6% for 2009; 2.6% for 2010; 2.6% for 2011; 2.0% for 2012; 2.8% for 2013; 3.5% for 2014.

5. Differences in outcomes across SMF programmes

The SMF has run a variety of programmes from the 2012 cohort onwards. The Aspiring Professionals Programme (APP) was the predominant programme across all cohorts, with residential programmes expanding over time. Around 40 pupils participated in the J.P. Morgan residential programme in the 2012 cohort, expanding to Jacobs, KPMG and Linklaters residential programmes in 2014. The Whitehall programme supported around 60 pupils in the 2012 cohort and around 90 in the 2013 and 2014 cohorts.

It is interesting to consider whether student outcomes for these different programmes are different from the core APP. This evaluation problem is even harder than for the evaluation of SMF programmes as a whole, as pupils sign up for residential programmes in their area of interest. Although a researcher could find a comparison group of pupils with similar observable background characteristics, administrative data do not let us observe – or match on – these specific interests. The small sample sizes are an additional problem when exploring the independent impact of residential SMF programmes.

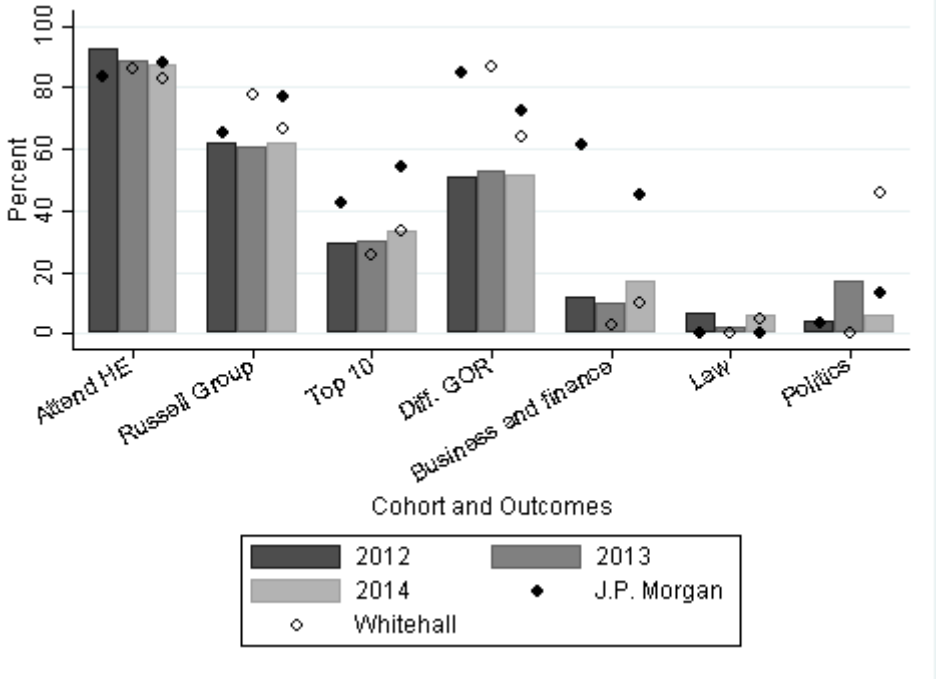
To give some flavour of the outcomes for SMF participants across programmes, Figure 5.1 shows the HE outcomes for those on the main APP and those on the Whitehall (in white diamonds) and J.P. Morgan (in black diamonds) residential programmes. The smaller programmes are only included where there are more than 20 participants per programme in the common sample. These are descriptive statistics only; because of the additional evaluation challenges, we have not made any attempt to construct a credible comparison group as we did in Chapter 4.

There are similar rates of progression to HE in the two years following A-levels across all cohorts and programmes, of over 80%. Conditional on going to university, over 60% of SMF students on the APP attend a Russell Group institution. As we saw in Figure 3.1, this is around double the percentage of the national population of A-level pupils (who attend university) that attend such high-status institutions each year. However, the percentage is even higher for those on the Whitehall and J.P. Morgan residential programme: the 2013 Whitehall programme and the 2014 J.P. Morgan programme cohorts each saw around 80% of participants attend a Russell Group institution, conditional on attending university.

Those participating in the J.P. Morgan programme have a markedly higher percentage of students attending a Top 10 institution, which are those most visited by employers each year. Those on the Whitehall programme are more similar to the APP for this outcome, which, as we saw in Figure 3.1, was around twice as likely as those from the national population of A-level pupils who attend university.

Taken together, these descriptive statistics strongly suggest that pupils on the two residential programmes were more likely than participants in the APP (and much more likely than A-level pupils as a whole) to attend high-status institutions. However, we cannot conclude from these statistics whether the residential programme itself caused these different outcomes (for example, through better mentoring or links to higher-status institutions), or whether these outcomes reflect the underlying differences in who was eligible for and who chose to opt into these particular programmes.

Figure 5.1. Education outcomes for SMF participants, by cohort and programme



Note: Bars show the outcomes of SMF participants on the APP. 'Attend HE' means the student attends higher education (university) in the first or second year after A-level completion. All other outcomes are conditional on attending HE. 'Russell Group' means the student attends an institution that is part of the Russell Group. 'Top 10' means the student attends an institution that is one of the top 10 most visited by employers. 'Diff. GOR' means that the student attends an institution in a different Government Office Region to their region of residence for A-levels. The definitions for 'Business and finance' and 'Law' subjects can be found in Appendix D. The bars show the percentages for the common sample of SMF participants on the APP. The white and black diamonds show the percentages for all SMF participants on the Whitehall and J.P. Morgan residential programmes, respectively

The final bars show the percentage of the SMF cohort that chose a business and finance, law, and politics subject. Pupils on the J.P. Morgan residential programme were more likely than those on the APP to take a course defined as business and finance. This is likely to reflect, in part, the pre-existing interests of the pupils; however, it is possible that the experience of and guidance through the programme also had some role. There are no noticeable differences for law, and few for politics, where the exception is the 2014 cohort on the Whitehall residential programme.

6. Alternative comparison groups

There have been significant delays to this evaluation due to challenges in accessing the appropriate data. Organisations may need to use alternative comparison groups based on less precise, but easier to access, national statistics if they are not able to make the substantial time investment into waiting for individual-level data to construct comparison groups. For this reason, this section presents the average HE outcomes for alternative comparison groups of students in Appendix F. Organisations can choose which group of students is most similar to their participants to act as a 'rough and ready' counterfactual group. For example, if a programme was designed to serve high-achieving (at least three A grades at A-level) non-white pupils eligible for FSM from London, Table F.1 shows that counterfactual outcomes (the average HE outcomes for this group) are (for the 2014 cohort): 85% attend university in the first two years after A-levels, and of these students, 76% attend a Russell Group institution, 52% attend a Top 10 institution, and 71% attend an institution outside their home region of London.

7. Conclusions

Improving social mobility is a priority for the current government,[14] and there is great interest in the effectiveness of programmes designed to improve education outcomes for relatively disadvantaged young people in the UK.

Participation in one of the SMF programmes significantly increased attendance at university, between 8.5 percentage points (in 2010 and 2011) and 18 percentage points (in 2009). This is an economically meaningful impact, given the already high rate of attendance for young people with good A-level results across social backgrounds (Chowdry et al., 2013). There is some suggestion that subject choice was also affected, amongst those who go to university, with some increases in the likelihood of studying business and finance, and politics, in particular.

Conditional on attending university, there is no consistent evidence that the SMF programmes improved participation at high-status institutions defined both by Russell Group status and the frequency of visits by top employers. Participation at a Russell Group institution is consistently higher for SMF participants than their preferred control group, but not statistically significantly so.

This report has demonstrated the data and methods that can be used to evaluate the impact of the SMF programmes by using administrative data to create a reasonable comparison group. Such methods could also potentially be adopted to evaluate the impact of other programmes with clear eligibility criteria and reasonably rich data on participants, but without access to an experimental control group. Where timely research is required, however, alternative, coarser comparison groups (such as those presented in Chapter 6) may be appropriate.

Our approach has been to construct a credible group of pupils to represent the 'counterfactual' outcomes for the SMF participants (or the likely outcomes for this group in the absence of the SMF programmes). To do so, we used a range of observable characteristics (including eligibility for FSM, prior attainment and subject choice, and neighbourhood characteristics) to select similar non-participants and we 're-weighted' the individuals in this comparison group to 'look' as similar as possible to SMF participants. This matching process worked well: our preferred comparison group has similarly high levels of prior attainment and background characteristics, similar A-level subject choice and neighbourhood context to the SMF cohorts.

There are limitations to analysis of this kind, however, which must be borne in mind. First, it is not possible to construct a group of similar pupils in terms of unobservable characteristics such as motivation or desired professional career prior to participation on an SMF programme. Despite the rich data available to us, there are likely to be some characteristics of SMF participants that are systematically different to the group of pupils who look most similar on the basis of observable characteristics. This is because SMF participants have been sufficiently motivated to apply to the programme, and are perhaps more likely to have a professional career in mind prior to participation.

[14] https://www.gov.uk/government/speeches/britain-the-great-meritocracy-prime-ministers-speech

Second, our estimates rely on the outcomes we observe for SMF participants being representative of SMF participants as a whole. This is unlikely to hold in practice, as SMF participants included in the analysis (those who respond to the SMF survey on university destinations and/or were captured in an online search) differ in observable ways from SMF non-respondents, as outlined in Table B.2. For example, where outcomes are observed, SMF participants had significantly higher attainment at GCSE and A-level than those not observed, and are much more likely to take maths or science at A-level. If these characteristics are correlated with education participation, then our estimates of the impact of the SMF programmes are likely to be biased. It must also be considered that the participants in the sample found through online searches are potentially more likely to have ended up in professional occupations than those without an online profile.

It is not possible to assess the scale of any potential bias, but if the estimates are biased, then it is likely that they are biased upwards (i.e. higher than the true impact of the SMF programme). Notwithstanding these concerns, given the magnitude of the estimated effects, it is likely that the programme has a positive effect on the likelihood of attending university. This is a striking finding given the SMF's focus on targeting high-attaining pupils, and is likely to lead to improved employment outcomes.

There is concerning evidence, however, that even attending a high-status institution with high grades does not lead to equal employment outcomes for those from more and less affluent backgrounds (Crawford et al., 2016). These authors conclude that:

> 'While much of the policy emphasis to date has focused on widening access to university, including to high-status institutions, our research highlights a need for policy intervention throughout the student life-course, to ensure equality of opportunity and outcomes for those from different socio-economic backgrounds.'

Programmes such as the Social Mobility Foundation therefore have a crucial role in striving to equalise opportunities for those from more and less advantaged backgrounds.

Appendix A. Propensity score matching

Propensity score matching relies on constructing a suitable comparison group on the basis of a wide range of characteristics that are observable to the researcher (i.e. available in the data at their disposal). The key assumptions underlying this approach are as follows. First, it must be assumed that, conditional on all observable characteristics included in the model, the outcomes for the treatment and comparison groups would be identical in the absence of the intervention; this is known as the conditional independence assumption (CIA). Second, there must be some degree of common support between the characteristics of pupils in the treatment and comparison areas (i.e. there must be some individuals in the comparison group who 'look' like the individuals in the treatment group); otherwise it will be impossible to find a suitable match for these individuals.

For the CIA to hold, the researcher must be able to observe all of the characteristics that are relevant both for determining whether the individual is in the treatment group or comparison group and for determining the outcomes of interest. This means that the availability and selection of characteristics on which to match is crucial to the likelihood of the CIA holding. On the one hand, the larger the number of characteristics that must be included in the model, the better the researcher accounts for differences between the treated and comparison groups; on the other hand, the harder it becomes to find a perfect match for each individual. One way to get around this problem is to estimate a propensity score, which is a simple way of summarising an individual's characteristics into their propensity to be treated. This means that, rather than finding an exact match for each individual in the treatment group in terms of all of their observable characteristics, similar individuals can be found in terms of this summary propensity score.

The propensity score is simply the predicted probability of treatment from a discrete choice model where the dependent variable is a binary variable equal to one if the individual is in the treatment group, and to zero if they are in the comparison group. All characteristics that are thought to predict either the likelihood of treatment or the outcomes of interest should be included in the model.

Once the propensity score has been estimated, individuals in the comparison group are weighted according to how closely matched they are to each individual in the treatment group. There are a number of different approaches to undertaking this weighting process, for example, giving weight only to those individuals in the comparison group that are closest in absolute terms to a particular individual in the treatment group (nearest-neighbour matching), allocating a fixed weight to all individuals within a certain absolute distance (radius matching), or allocating weight depending on how close they are to each individual in the treatment group (weighted smoothed matching).

Appendix B. Information available about the SMF participants

Table B.1. Available information about SMF participants

Characteristics	2009 SMF cohort	2010 SMF cohort	2011 SMF cohort	2012 SMF cohort	2013 SMF cohort	2014 SMF cohort
Eligibility for FSM	Yes	Yes	Yes	No	Yes	Yes
Eligibility for EMA	Yes	Yes	Yes	No	No	No
Ethnic group	Yes	Yes	Yes	Yes	Yes	Yes
Parents' education	Yes	Yes	Yes	Yes	Yes	Yes
School name	Yes	Yes	Yes	Yes	Yes	Yes
Postcode	Yes	Yes	Yes	Yes	Yes	Yes
Parents' occupation	Yes (subset)*	To follow	To follow	Yes	Yes	Yes
Household income	No	No	No	Yes	Yes	Yes
GCSE grades	Yes	Yes	Yes	Yes	Yes	Yes
A-level choices and grades	Yes	Yes	Yes	Yes	Yes	Yes
University participation	Yes	Yes	Yes	Yes	Yes	Yes
University chosen	Yes	Yes	Yes	Yes	Yes	Yes
Course chosen	Yes	Yes	Yes	Yes	Yes	Yes
Degree outcome	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Employment status	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Sector of employment	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Salary	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*

Note: * We observe this information for the subset of the cohort that responded to an SMF survey of their employment following graduation.

Table B.2. Comparison of SMF participants included and excluded from analysis due to missing data

Characteristics	2009			2010			2011		
	Included	Excluded	Difference	Included	Excluded	Difference	Included	Excluded	Difference
GCSE points (grade) (average)	52.9 (A)	52.2 (A)	0.691*	53.0 (A)	51.7 (B)	1.284***	52.6 (A)	51.6 (B)	0.958***
GCSE points (grade) (lowest of best eight)	49.9 (B)	48.9 (B)	0.998	49.4 (B)	47.5 (B)	1.809***	49.0 (B)	48.2 (B)	0.817
GCSE points (grade) (lowest of best five)	53.1 (A)	52.5 (A)	0.609	53.4 (A)	51.6 (B)	1.806***	52.7 (A)	51.7 (B)	1.065***
GCSE points (grade) in English	52.4 (A)	52.1 (A)	0.236	52.2 (A)	50.3 (B)	1.947***	51.5 (B)	50.9 (B)	0.561
GCSE points (grade) in maths	53.9 (A)	53.3 (A)	0.571	53.8 (A)	51.8 (B)	2.006***	53.6 (A)	52.7 (A)	0.863**
A-level points (grade) (average)	113.1 (B)	105.5 (B)	7.630**	112.6 (B)	111.4 (B)	1.221	108.9 (B)	100.2 (B)	8.737**
Take A-level in maths (%)	58.3	12.4	46***	67.3	8	59.3***	67.2	12.4	54.8***
Take a science A-level (%)	51.5	7.2	44.3***	64.3	9.8	54.5***	67.4	13.3	54.1***
Eligible for FSM	38.7	46.9	−8.1	26.3	28.6	−2.2	29.7	33.6	−3.9
White British ethnic group	26	16.5	9.5*	24.6	25	−0.4	19.7	15.9	3.8
IDACI decile	8.3	8.6	−0.362	8.2	8.4	−0.196	8.3	8.5	−0.199
% in neighbourhood:									
Own/mortgage for home	26.1	28.1	−2.055	29.1	27.3	1.769	28.8	24.6	4.221***
Professional occupation	11	10.6	0.365	11.2	10.3	0.884	11.5	10.8	0.718
Degree	11.2	10.2	1.018*	10.5	10.5	−0.007	10.6	10.2	0.422

Characteristics	2012			2013			2014		
	Included	Excluded	Difference	Included	Excluded	Difference	Included	Excluded	Difference
GCSE points (grade) (average)	52.5 (A)	51.3 (B)	1.171***	52.3 (A)	51.4 (B)	0.831***	52.1 (A)	51.7 (B)	0.368
GCSE points (grade) (lowest of best eight)	48.5 (B)	47.1 (B)	1.429***	48.6 (B)	47.9 (B)	0.734	48.6 (B)	48.6 (B)	0.036
GCSE points (grade) (lowest of best five)	52.5 (A)	51.4 (B)	1.079***	52.4 (A)	51.5 (B)	0.928**	52.1 (A)	52.0 (B)	0.17
GCSE points (grade) in English	51.4 (B)	50.3 (B)	1.067**	51.3 (B)	50.6 (B)	0.740*	51.5 (B)	50.8 (B)	0.729**
GCSE points (grade) in maths	53.6 (A)	51.8 (B)	1.801***	53.1 (A)	52.4 (A)	0.68	53.3 (A)	53.5 (A)	−0.14
A-level points (grade) (average)	108.8 (B)	109.9 (B)	−1.011	109.2 (B)	108.3 (B)	0.852	106.9 (B)	104.1 (B)	2.844
Take A-level in maths (%)	72.6	47.7	24.8***	61.8	54.9	6.9*	50.2	17.3	33***
Take a science A-level (%)	69.5	49.7	19.8***	62.6	48.6	14***	55.6	15.9	39.7***
Eligible for FSM	56.1	50.3	5.8	62.6	66	−3.4	66.6	71.6	−5
White British ethnic group	17.3	37.4	−20.1***	25.8	29.6	−3.9	24.2	27	−2.8
IDACI decile	8.6	7.9	0.607***	8.2	7.7	0.473**	8	8	0.005
% in neighbourhood:									
Own/mortgage for home	27.2	31.1	−3.946***	28	29.5	−1.537	27.3	28.7	−1.465
Professional occupation	10.3	10.4	−0.079	9.5	10.3	−0.781	10	10	0.036
Degree	10.4	10.7	−0.258	10.9	10.7	0.274	10.7	10.6	0.058

Note: *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively. A common sample is imposed: individuals are included if KS4 and KS5 results are reported, and university destination and subject choice are known. A higher decile corresponds to a more deprived area. Area characteristics are not reported for the 2012 cohort as the sample size with recorded postcode is too low.

Appendix C. Comparison of online and survey-only sample

Table C.1. Comparison of online and survey-only samples

Characteristics	2009			2010			2011		
	Online	Survey	Difference	Online	Survey	Difference	Online	Survey	Difference
GCSE points (grade) (average)	52.9 (A)	52.2 (A)	0.728	53.2 (A)	51.9 (B)	1.277***	52.7 (A)	52.3 (A)	0.411
GCSE points (grade) (lowest of best eight)	50.0 (B)	48.8 (B)	1.213	49.5 (B)	48.4 (B)	1.043	49.1 (B)	48.4 (B)	0.783
GCSE points (grade) (lowest of best five)	53.2 (A)	51.6 (B)	1.556	53.5 (A)	52.2 (A)	1.290**	52.8 (A)	52.2 (A)	0.608
GCSE points (grade) in English	52.3 (A)	53.1 (A)	–0.804	52.4 (A)	50.6 (B)	1.817***	51.7 (B)	50.1 (B)	1.577**
GCSE points (grade) in maths	54.0 (A)	52.4 (A)	1.614	54.0 (A)	53.0 (A)	0.986	53.8 (A)	52.4 (A)	1.450**
A-level points (grade) (average)	113.6 (B)	107.6 (B)	5.988	114.6 (B)	99.0 (C)	15.559***	110.0 (B)	102.3 (B)	7.673***
Take A-level in maths (%)	58.5	56.3	2.3	68.8	57.1	11.6	66.7	70.4	–3.7
Take a science A-level (%)	51.6	50	1.6	63.9	67.3	–3.5	65.6	77.8	–12.2**
Eligible for FSM	36.7	62.5	–25.8*	27.2	20.4	6.8	28.5	37	–8.6
White British ethnic group	27.1	12.5	14.6	22.8	36.7	–13.9*	20.6	14.8	5.8
IDACI decile	8.2	8.4	–0.197	8.2	7.8	0.442	8.2	8.3	–0.097
% in neighbourhood:									
Own/mortgage for home	26.4	22.2	4.252	28.6	32.4	–3.796*	28.9	28.6	0.217
Professional occupation	10.9	12	–1.177	10.8	13.5	–2.657*	11.6	10.9	0.755
Degree	11.2	11.9	–0.759	10.4	10.8	–0.438	10.6	10.4	0.205

Characteristics	2012			2013			2014		
	Online	Survey	Difference	Online	Survey	Difference	Online	Survey	Difference
GCSE points (grade) (average)	52.5 (A)	52.4 (A)	0.064	52.3 (A)	52.4 (A)	−0.17	52.1 (A)	51.9 (B)	0.227
GCSE points (grade) (lowest of best eight)	48.5 (B)	48.3 (B)	0.22	48.7 (B)	48.3 (B)	0.406	48.6 (B)	48.6 (B)	0.011
GCSE points (grade) (lowest of best five)	52.4 (A)	53.0 (A)	−0.623	52.4 (A)	52.3 (A)	0.097	52.2 (A)	51.6 (B)	0.586
GCSE points (grade) in English	51.4 (B)	51.5 (B)	−0.125	51.3 (B)	50.9 (B)	0.406	51.5 (B)	51.6 (B)	−0.182
GCSE points (grade) in maths	53.6 (A)	54.0 (A)	−0.395	53.1 (A)	52.3 (A)	0.783	53.3 (A)	53.4 (A)	−0.109
A-level points (grade) (average)	108.9 (B)	108.7 (B)	0.212	110.2 (B)	99.8 (C)	10.342***	107.0 (B)	106.4 (B)	0.641
Take A-level in maths (%)	71.6	77.1	−5.5	62.9	51.4	11.5	50.8	47	3.8
Take a science A-level (%)	69.2	71.1	−1.9	62	68.6	−6.5	55.8	54.5	1.2
Eligible for FSM	54.7	62.7	−7.9	62.6	62.9	−0.2	65.5	72.7	−7.2
White British ethnic group	16.7	20.5	−3.8	26.1	22.9	3.2	21.3	40.9	−19.6***
IDACI decile	8.7	7.8	0.957***						
% in neighbourhood:									
Own/mortgage for home	26.6	30	−3.341**	28.5	23.2	5.300**	26.8	29.6	−2.78
Professional occupation	10.2	10.9	−0.716	9.7	7.4	2.324**	9.9	10.6	−0.646
Degree	10.3	11	−0.666*	11.1	9.7	1.413**	10.6	10.9	−0.306

Note: *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively. A common sample is imposed: individuals are included if KS4 and KS5 results are reported, and university destination and subject choice are known. A higher decile corresponds to a more deprived area. 'Online' includes those with HE outcomes found through online searches and may or may not have responded to the survey. 'Survey' includes those who responded to the survey and were not found in online searches. Area characteristics are not reported for the 2012 cohort as the sample size with recorded postcode is too low.

Appendix D. Classification of subjects into broad areas

Table D.1. Classification of subjects in HESA student record data (1)

Accountancy	Architecture	Business and finance	Engineering	Law	Media	Medicine and dentistry
N4 Accounting	H5 Naval architecture	L1 Economics	H0 Broadly-based programmes within engineering and technology	M0 Broadly-based programmes within law	P1 Information services	A1 Pre-clinical medicine
	K0 Broadly-based programmes within architecture	N1 Business studies	H1 General engineering	M1 Law by area	P2 Publicity studies	A2 Pre-clinical dentistry
	K1 Architecture	N2 Management studies	H2 Civil engineering	M2 Law by topic	P3 Media studies	A3 Clinical medicine
	K2 Building	N3 Finance	H3 Mechanical engineering	M9 Others in law	P4 Publishing	A4 Clinical dentistry
	K3 Landscape design	N5 Marketing	H4 Aerospace engineering		P5 Journalism	A9 Others in medicine and dentistry
	K4 Planning urban	N6 Human resource management	H6 Electronic and electrical engineering		P9 Others in mass communications and documentation	B0 Broadly-based programmes within subjects allied to medicine

	K9 Others in architecture	N7 Office skills N8 Tourism N9 Others in business and administrative studies	H7 Production and manufacturing engineering H8 Chemical H9 Others in engineering			B1 Anatomy B2 Pharmacology B3 Complementary medicine B5 Ophthalmics B6 Aural and oral sciences B8 Medical technology B9 Others in subjects allied to medicine D1 Pre-clinical veterinary medicine D2 Clinical veterinary medicine and dentistry

Table D.2. Classification of subjects in HESA student record data (2)

Politics	Science and technology	Other (humanities)	Other (maths)	Other (social sciences)	Other (vocational)	Other (other)
L2 Politics	C0 Broadly-based programmes within biological sciences	Q0 Broadly-based programmes within languages	G0 Broadly-based programmes within mathematical sciences	C8 Psychology	B4 Nutrition	D6 Food and beverage studies
L4 Social policy	C1 Biology	Q1 Linguistics	G1 Mathematics	L0 Broadly-based programmes within social studies	B7 Nursing	Y0 Combined
	C2 Botany	Q2 Comparative literary studies	G2 Operational research	L3 Sociology	C6 Sports science	
	C3 Zoology	Q3 English studies	G3 Statistics	L6 Anthropology	D4 Agriculture	
	C4 Genetics	Q4 Ancient language studies		L7 Human and social geography	D5 Forestry	
	C5 Microbiology	Q5 Celtic studies		L9 Others in social studies	L5 Social work	
	C7 Molecular biology	Q6 Latin studies			X0 Broadly-based programmes within education	
	C9 Others in biological sciences	Q7 Classical Greek studies			X1 Training teachers	

	D3 Animal science	Q8 Classical studies			X2 Research and study skills in education	
	D9 Others in veterinary sciences	Q9 Others in linguistics			X3 Academic studies in education	
	F0 Broadly-based programmes within physical sciences	R1 French studies			X9 Others in education	
	F1 Chemistry	R2 German studies				
	F2 Materials science	R3 Italian studies				
	F3 Physics	R4 Spanish studies				
	F4 Forensic and archaeological science	R5 Portuguese studies				
	F5 Astronomy	R6 Scandinavian studies				
	F6 Geology	R7 Russian and East European studies				
	F7 Ocean sciences	R9 Others in European languages				

	F8 Physical and terrestrial geographical and environmental sciences	T1 Chinese studies				
	F9 Others in physical sciences	T2 Japanese studies				
	G4 Computer science	T3 South Asian studies				
	G5 Information systems	T4 Other Asian studies				
	G6 Software engineering	T5 African studies				
	G7 Artificial intelligence	T6 Modern Middle Eastern studies				
	G92 Others in computing sciences	T7 American studies				
	J1 Minerals technology	T9 Others in Eastern ...				
	J2 Metallurgy	V0 Broadly-based programmes within historical and philosophical studies				
	J3 Ceramics and glasses	V1 History by period				

	J4 Polymers and textiles J5 Materials technology not otherwise specified J6 Maritime technology J7 Industrial biotechnology J9 Others in technology	V2 History by area V3 History by topic V4 Archaeology V5 Philosophy V6 Theology and religious studies V9 Others in historical and philosophical studies W0 Broadly-based programmes within creative arts and design W1 Fine art W2 Design studies W3 Music W4 Drama W5 Dance				

		W6 Cinematics and photography W7 Crafts W8 Imaginative writing W9 Others in creative arts and design				

Table D.3. Classification of subjects in SMF data (1)

Accountancy	Architecture	Business and finance	Engineering	Law	Media	Medicine and dentistry
Accounting and finance	Architectural technology	Actuarial science and mathematics	Aerospace engineering	Criminology and law	Communications media and society	Biomedical science
Accounting with business management	Architecture	BA Business management	Automotive engineering	Honours law	German and international media and communication	Biomedical sciences
Business accounting and finance	Civil engineering and architecture	BA Economics and business management	Biochemical engineering	Law	Media and communications	Biomedicine
Business with accounting and finance	Landscape architecture	Banking and finance	Chemical engineering	Law (llb)	Multimedia	Bioveterinary science
Economics and accounting	K3 Landscape design	Banking and international finance	Civil engineering	Law and criminology	Public relations	BSc Biomed
Finance and accounting	K4 Planning urban	BSc Economics	Computer engineering	Law llb	Spanish and international media and communications	Clinical sciences
	K9 Others in architecture	BSc International management (china)	Electrical and electronics engineering	Law with French	Television and film production	Dentistry
		Business economics and finance	Electrical and electronic engineering	Law with French law		Diagnostic radiography

		Business finance	Electronic engineering	Law with German		Extended Medical Degree Programme (EMDP)
		Business management	Engineering	Law with law studies in Europe		Medicine
		Business mathematics and statistics	General engineering	IIb law		Medicine–psychology integrated degree
		Business studies	Manufacturing and mechanical engineering	Sociology with law		Medicine and surgery
		Business studies w/economics	Mechanical engineering			Optometry
		Economics	Mechanical engineering with a year in industry			Orthoptics
		Economics and philosophy	Medical engineering			Pharmacology
		Economics and business finance	Petroleum engineer			Pharmacy
		Economics and finance	Science and engineering foundation programme			Veterinary medicine
		Economics and geography	Science and engineering foundation programme (ffx3)			
		Economics with finance				
		Economics with French				

		Financial economics Financial mathematics Information management and business studies Information management for business Marketing management Mathematics and economics Mathematics and finance Mathematics business management and finance Maths and economics Maths with economics Maths with finance Sociology and business management				

Table D.4. Classification of subjects in SMF data (2)

Politics	Science and technology	Other (humanities)	Other (maths)	Other (social sciences)	Other (vocational)	Other (other)
Economics and politics	Artificial intelligence and cybernetics	Ancient world studies	Mathematics	Cultural studies	Adult nursing	
Government and economics	Biochemistry	Archaeology	Mathematics and music	Early childhood studies	Digital animation and interactive design	
Government and history	Biochemistry and molecular medicine	Art	Mathematics BSc	Psychology	Fashion buying and design	
History and international relations	Biological sciences	BA Geography	Mathematics with statistics	Psychology and child development	Foundation degree in professional photography	
History and politics	Biology	Classical archaeology and ancient history	Maths	Sociology	Interior design	
International politics	Chemistry	Classical studies	Pure mathematics	L9 Others in social studies	Photography	
International relations and Arabic	Chemistry with a year abroad	Contemporary Chinese studies			Physiotherapy	
International relations with English and Spanish	Chemistry with biochemistry	Contemporary theatre and performance			Veterinary nursing	
Philosophy politics and economics	Computer science	Dance			X2 Research and study skills in education	

Politics	Computer science and artificial intelligence	Education with English and drama			X3 Academic studies in education	
Politics and Hispanic studies	Computing	English			X9 Others in education	
Politics and international relations	Ecology	English and drama				
Politics with international studies	Forensic science	English and German literature				
PPE	Genetics	English and linguistics				
PPS	Geology	English language				
PPSIS	Human biosciences	English language and linguistics				
Social policy and economics	ICT	English language and literature				
	Information management and computing	English language and literature				
	Medical biochemistry	English lit				
	Medical physics	English literature				
	Medicinal and biological chemistry	English with creative writing				

	MSc Chemistry with French	European studies				
	Natural science	European studies and Spanish				
	Natural sciences	Foundation diploma in art and design				
	Natural sciences biological	French				
	Neuroscience	French and Spanish				
	Physics	Geography				
	Physiological sciences	History				
	Science and engineering foundation programme biological sciences 4 year	History and American studies				
	Sport and exercise science	History and French joint degree				
	J6 Maritime technology	Japanese studies				
	J7 Industrial biotechnology	Literature and language in education				
	J9 Others in technology	Modern history				
		Philosophy				

		Spanish Spanish and French Theology				

Appendix E. Defining a common sample

Table E.1. Defining a common sample: remaining sample after each condition is imposed

SMF cohort	No condition (England)	Observe HE participation	Observe Russell Group status*	Observe 'Top 10' status*	Observe whether different GOR*	Observe broad subject area	Observe KS4 results	Observe KS5 results	Total
2009: treatment	303 (301)	250	250	250	250	241	228	204	67%
2009: control	300,705	300,705	300,705	300,705	300,705	295,655	287,841	198,716	66%
2010: treatment	507 (507)	507	427	426	426	425	425	395	78%
2010: control	305,798	305,798	305,798	305,798	305,798	300,399	291,880	195,956	64%
2011: treatment	666 (665)	580	576	576	576	576	576	552	83%
2011: control	316,174	316,174	316,174	316,174	316,174	311,203	302,939	199,277	63%
2012: treatment	650 (640)	536	534	534	534	532	494	485	75%
2012: control	326,932	326,932	326,932	326,932	326,932	320,766	312,557	197,363	60%
2013: treatment	683 (633)	505	502	502	502	436	394	380	56%
2013: control	333,984	333,984	333,984	333,984	333,984	327,693	319,423	193,519	58%
2014: treatment	859 (805)	649	646	646	646	552	551	446	52%
2014: control	395,913	395,913	395,913	395,913	395,913	389,036	370,611	198,347	50%

Note: * Conditional on HE participation.

Appendix F. Alternative comparison groups

Table F.1. Alternative comparison groups for other programmes: the average outcomes for groups of students across cohorts.

Example students	SMF cohort	Attend HE (%)	Russell Group (%)	Top 10 (%)	Diff. GOR (%)
			Conditional on attending HE		
Students attaining at least three A* grades at A-level	2009	84	92	74	80
	2010	91	91	72	79
	2011	86	91	77	79
	2012	89	92	79	78
	2013	89	92	79	80
	2014	89	91	79	79
	2009–14	88	91	77	79
Non-white students attaining at least three A* grades at A-level	2009	80	94	74	67
	2010	88	94	73	67
	2011	85	95	73	68
	2012	87	95	81	66
	2013	90	95	82	71
	2014	90	95	82	69
	2009–14	87	95	78	68
Non-white FSM students attaining at least three A* grades at A-level	2009	78	91	63	51
	2010	89	88	71	56
	2011	82	91	69	49
	2012	87	90	76	56
	2013	84	93	80	61
	2014	90	94	79	57
	2009–14	85	91	74	55
White students attaining at least three A* grades at A-level	2009	85	92	74	83
	2010	91	90	72	81
	2011	87	90	78	82
	2012	89	91	79	81
	2013	89	91	79	83
	2014	89	90	79	82
	2009–14	88	91	77	82

White FSM students attaining at least three A* grades at A-level	2009	85	90	69	69
	2010	87	77	62	83
	2011	78	93	75	65
	2012	87	85	72	72
	2013	91	92	82	76
	2014	87	87	80	74
	2009–14	86	87	73	73
Students attaining at least three A grades at A-level	2009	80	81	50	79
	2010	89	79	49	78
	2011	83	80	53	78
	2012	84	82	54	79
	2013	85	83	57	81
	2014	85	82	58	79
	2009–14	84	81	53	79
Non-white students attaining at least three A grades at A-level	2009	79	74	42	65
	2010	86	73	44	67
	2011	80	78	49	69
	2012	80	80	51	70
	2013	88	78	48	72
	2014	85	77	53	69
	2009–14	83	77	48	69
Non-white FSM students attaining at least three A grades at A-level	2009	76	77	43	60
	2010	89	78	49	60
	2011	75	93	65	68
	2012	78	92	60	64
	2013	92	89	63	61
	2014	81	82	56	53
	2009–14	83	85	56	60
Non-white FSM students from London attaining at least three A grades at A-level	2009	79	74	42	66
	2010	85	72	43	68
	2011	80	76	47	70
	2012	80	78	49	72
	2013	88	76	45	74
	2014	85	76	52	71
	2009–14	83	75	47	70

Non-white FSM students from outside London attaining at least three A grades at A-level	2009	77	63	33	71
	2010	86	59	31	71
	2011	79	64	35	71
	2012	81	67	35	71
	2013	81	69	38	73
	2014	81	69	38	72
	2009–14	81	65	35	71
White students attaining at least three A grades at A-level	2009	79	62	34	60
	2010	85	58	31	61
	2011	81	64	36	62
	2012	82	68	39	62
	2013	83	70	41	63
	2014	83	71	41	64
	2009–14	82	66	37	62
White FSM students attaining at least three A grades at A-level	2009	77	56	29	38
	2010	86	50	26	44
	2011	82	58	33	42
	2012	81	65	34	47
	2013	82	68	37	50
	2014	83	67	38	46
	2009–14	82	61	33	45
White FSM students from London attaining at least three A grades at A-level	2009	78	53	19	35
	2010	89	48	19	44
	2011	83	59	26	41
	2012	82	64	27	44
	2013	83	67	31	48
	2014	83	68	32	43
	2009–14	83	61	26	43
White FSM students from outside London attaining at least three A grades at A-level	2009	77	59	40	43
	2010	84	52	34	44
	2011	80	56	42	44
	2012	81	66	43	50
	2013	80	68	43	52
	2014	83	67	45	50
	2009–14	81	62	41	48

Students attaining at least three B grades at A-level	2009	76	63	33	73
	2010	86	59	30	73
	2011	79	64	35	73
	2012	80	66	35	73
	2013	81	69	37	75
	2014	80	69	37	74
	2009–14	81	65	34	74
Non-white students attaining at least three B grades at A-level	2009	75	54	27	61
	2010	83	51	25	62
	2011	78	54	30	62
	2012	78	60	29	62
	2013	83	62	30	65
	2014	81	62	31	64
	2009–14	80	58	29	63
Non-white FSM students attaining at least three B grades at A-level	2009	79	49	21	60
	2010	85	53	24	67
	2011	78	55	30	64
	2012	75	57	24	65
	2013	83	64	36	60
	2014	77	65	28	64
	2009–14	79	57	27	64
Non-white FSM students from London attaining at least three B grades at A-level	2009	74	55	29	61
	2010	83	51	25	61
	2011	78	54	29	61
	2012	79	61	30	61
	2013	83	62	29	66
	2014	81	61	32	64
	2009–14	80	58	29	63
Non-white FSM students from outside London attaining at least three B grades at A-level	2009	58	38	20	68
	2010	66	35	18	69
	2011	60	39	21	70
	2012	61	40	21	69
	2013	63	41	21	71
	2014	63	41	21	70
	2009–14	62	39	20	70

White students attaining at least three B grades at A-level	2009	56	33	17	67
	2010	64	31	16	68
	2011	57	35	18	67
	2012	59	37	18	68
	2013	60	37	19	69
	2014	61	38	18	68
	2009–14	60	35	18	68
White FSM students attaining at least three B grades at A-level	2009	54	33	16	66
	2010	62	30	15	67
	2011	56	33	17	67
	2012	58	36	17	68
	2013	59	35	18	68
	2014	60	35	17	67
	2009–14	58	34	17	67
White FSM students from London attaining at least three B grades at A-level	2009	53	30	15	65
	2010	61	28	14	66
	2011	54	31	16	65
	2012	57	32	16	66
	2013	58	34	17	66
	2014	58	34	16	66
	2009–14	57	31	15	66
White FSM students from outside London attaining at least three B grades at A-level	2009	52	29	14	65
	2010	60	27	13	65
	2011	53	31	16	65
	2012	55	32	16	66
	2013	57	31	16	66
	2014	58	32	15	64
	2009–14	56	30	15	65
Area deprivation (classified by IDACI): 1st decile (least deprived 10%)	2009	58	38	20	68
	2010	66	35	18	69
	2011	60	39	21	70
	2012	61	40	21	69
	2013	63	41	21	71
	2014	63	41	21	70
	2009–14	62	39	20	70

Area deprivation (classified by IDACI): 2nd decile	2009	56	33	17	67
	2010	64	31	16	68
	2011	57	35	18	67
	2012	59	37	18	68
	2013	60	37	19	69
	2014	61	38	18	68
	2009–14	60	35	18	68
Area deprivation (classified by IDACI): 3rd decile	2009	54	33	16	66
	2010	62	30	15	67
	2011	56	33	17	67
	2012	58	36	17	68
	2013	59	35	18	68
	2014	60	35	17	67
	2009–14	58	34	17	67
Area deprivation (classified by IDACI): 4th decile	2009	53	30	15	65
	2010	61	28	14	66
	2011	54	31	16	65
	2012	57	32	16	66
	2013	58	34	17	66
	2014	58	34	16	66
	2009–14	57	31	15	66
Area deprivation (classified by IDACI): 5th decile	2009	52	29	14	65
	2010	60	27	13	65
	2011	53	31	16	65
	2012	55	32	16	66
	2013	57	31	16	66
	2014	58	32	15	64
	2009–14	56	30	15	65
Area deprivation (classified by IDACI): 6th decile	2009	51	27	14	61
	2010	58	24	12	63
	2011	53	28	13	61
	2012	56	29	14	62
	2013	57	29	15	63
	2014	57	30	14	62
	2009–14	55	28	14	62

Area deprivation (classified by IDACI): 7th decile	2009	51	25	13	59
	2010	58	23	11	61
	2011	53	27	13	59
	2012	56	29	14	60
	2013	57	28	14	60
	2014	58	29	14	60
	2009–14	55	27	13	60
Area deprivation (classified by IDACI): 8th decile	2009	51	23	11	54
	2010	58	21	10	55
	2011	54	24	12	53
	2012	57	26	13	54
	2013	58	25	12	56
	2014	60	25	12	55
	2009–14	56	24	12	55
Area deprivation (classified by IDACI): 9th decile	2009	52	20	11	49
	2010	57	19	9	50
	2011	55	21	11	50
	2012	57	23	12	51
	2013	60	23	12	51
	2014	61	24	11	50
	2009–14	57	22	11	50
Area deprivation (classified by IDACI): 10th decile (most deprived 10%)	2009	53	18	8	40
	2010	59	17	8	43
	2011	57	19	10	43
	2012	58	21	10	45
	2013	61	22	11	46
	2014	63	23	10	46
	2009–14	59	20	9	44
At least three A grades: area deprivation (classified by IDACI): 1st decile (least deprived 10%)	2009	81	84	53	82
	2010	90	83	51	80
	2011	84	84	56	81
	2012	86	85	57	80
	2013	87	85	60	82
	2014	85	84	62	82
	2009–14	86	84	56	81

At least three A grades: area deprivation (classified by IDACI): 2nd decile	2009	82	83	53	81
	2010	89	81	50	80
	2011	82	81	54	80
	2012	85	82	56	80
	2013	86	85	59	82
	2014	87	85	58	80
	2009–14	85	83	55	80
At least three A grades: area deprivation (classified by IDACI): 3rd decile	2009	80	83	51	79
	2010	89	80	50	78
	2011	82	80	53	80
	2012	83	83	55	79
	2013	85	81	57	81
	2014	85	82	59	80
	2009–14	84	81	54	80
At least three A grades: area deprivation (classified by IDACI): 4th decile	2009	80	80	49	79
	2010	89	80	49	77
	2011	82	81	53	78
	2012	84	82	55	77
	2013	85	83	58	81
	2014	84	82	57	79
	2009–14	84	81	54	78
At least three A grades: area deprivation (classified by IDACI): 5th decile	2009	80	81	50	77
	2010	89	77	49	76
	2011	82	81	53	77
	2012	81	82	54	78
	2013	83	81	56	78
	2014	83	83	59	78
	2009–14	83	81	53	77
At least three A grades: area deprivation (classified by IDACI): 6th decile	2009	79	81	50	75
	2010	88	77	47	77
	2011	81	80	50	73
	2012	84	81	54	75
	2013	84	81	59	77
	2014	84	84	58	76
	2009–14	83	80	53	76

At least three A grades: area deprivation (classified by IDACI): 7th decile	2009	81	80	50	74
	2010	88	77	47	72
	2011	83	80	52	72
	2012	83	80	53	74
	2013	85	84	56	74
	2014	85	83	57	72
	2009–14	84	80	52	73
At least three A grades: area deprivation (classified by IDACI): 8th decile	2009	80	81	50	68
	2010	89	79	47	66
	2011	83	77	49	65
	2012	85	82	53	67
	2013	85	82	54	70
	2014	84	84	57	68
	2009–14	84	81	52	67
At least three A grades: area deprivation (classified by IDACI): 9th decile	2009	79	81	49	66
	2010	87	79	47	63
	2011	81	83	54	66
	2012	81	83	57	64
	2013	83	83	57	65
	2014	82	83	59	59
	2009–14	82	82	54	64
At least three A grades: area deprivation (classified by IDACI): 10th decile (most deprived 10%)	2009	78	81	47	55
	2010	87	78	47	55
	2011	81	81	50	53
	2012	78	84	57	55
	2013	83	85	62	56
	2014	84	85	61	52
	2009–14	82	82	54	54
At least three B grades: area deprivation (classified by IDACI): 1st decile (least deprived 10%)	2009	78	68	37	77
	2010	88	65	34	76
	2011	80	70	39	77
	2012	82	71	39	77
	2013	83	73	41	79
	2014	82	73	42	78
	2009–14	82	70	39	77

At least three B grades: area deprivation (classified by IDACI): 2nd decile	2009	78	65	35	76
	2010	87	61	32	75
	2011	79	66	37	75
	2012	81	69	36	76
	2013	82	71	39	77
	2014	82	72	39	76
	2009–14	81	67	37	76
At least three B grades: area deprivation (classified by IDACI): 3rd decile	2009	77	65	34	74
	2010	86	60	31	74
	2011	78	64	35	76
	2012	80	69	36	75
	2013	81	70	38	76
	2014	81	69	39	77
	2009–14	81	66	35	75
At least three B grades: area deprivation (classified by IDACI): 4th decile	2009	76	62	33	74
	2010	85	59	31	73
	2011	78	64	35	74
	2012	80	67	35	74
	2013	81	70	39	75
	2014	80	68	36	75
	2009–14	80	65	35	74
At least three B grades: area deprivation (classified by IDACI): 5th decile	2009	76	62	32	74
	2010	85	59	31	73
	2011	77	63	35	74
	2012	79	65	34	74
	2013	80	67	37	74
	2014	80	68	37	74
	2009–14	80	64	34	74
At least three B grades: area deprivation (classified by IDACI): 6th decile	2009	75	61	33	71
	2010	85	56	29	72
	2011	78	61	32	69
	2012	80	63	33	71
	2013	80	66	37	72
	2014	80	68	36	71
	2009–14	80	62	33	71

At least three B grades: area deprivation (classified by IDACI): 7th decile	2009	76	59	31	69
	2010	85	56	28	68
	2011	79	61	32	68
	2012	81	65	34	69
	2013	82	68	36	69
	2014	81	68	37	68
	2009–14	81	63	33	69
At least three B grades: area deprivation (classified by IDACI): 8th decile	2009	77	59	30	64
	2010	86	54	28	64
	2011	81	58	31	63
	2012	84	64	34	62
	2013	81	66	35	65
	2014	81	66	36	64
	2009–14	82	61	32	64
At least three B grades: area deprivation (classified by IDACI): 9th decile	2009	77	58	31	58
	2010	86	54	27	59
	2011	80	61	35	61
	2012	80	63	35	59
	2013	81	66	36	60
	2014	82	66	37	57
	2009–14	81	61	33	59
At least three B grades: area deprivation (classified by IDACI): 10th decile (most deprived 10%)	2009	78	55	28	49
	2010	87	52	26	52
	2011	81	57	31	51
	2012	80	63	32	51
	2013	83	66	37	54
	2014	82	67	36	51
	2009–14	82	60	32	52

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