



Department
for Education

Encouraging People into University

Research report

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Contents

List of figures	3
List of tables	4
Executive Summary	5
Introduction	7
The study	10
Results	13
Value for Money	17
Conclusions and next steps	18

List of figures

Figure 1: Example Letter from Rachel	12
Figure 2: Effect of treatments on application to university	14
Figure 3: Effect of treatments on application to Russell Group universities	14
Figure 4: Effect of treatments on Likelihood of being made an offer by a university	15
Figure 5: Effect of treatments on Likelihood of being made an offer by a Russell Group university	15
Figure 6: Effect of treatments on Likelihood of accepting an offer by a university	16
Figure 7: Effect of treatments on Likelihood of accepting an offer by a Russell Group university	16

List of tables

Table 1 Attendance to university by treatment received

17

Executive Summary

A growing body of empirical research suggests that young people from less advantaged backgrounds are less likely to apply to university, and apply to less selective universities, than more advantaged young people with the same grades or ability. In the United Kingdom Anders (2012), finds students from lower income families, apply to university less often, and to Russell Group universities especially less often, than students with higher incomes, even when controlling for attainment.¹ Similarly, in the United States, Hoxby and Turner (2013), observe similar patterns, observing that “only a minority of high-achieving, low income students apply to colleges in the same way that other high achieving students do”.² This is particularly confusing in light of the additional financial support available which can often make more selective institutions more affordable than less selective ones.³

Over the last three years the Behavioural Insights Team and the Department for Education have conducted a large scale randomised controlled trial that aims to partially address this problem. Drawing on academic research from the UK and the United States, letters written by university students from a similar background were sent to high achieving young people (students who scored more than 367 points on their best 8 GCSEs and went to schools which typically sent more than 20% of their high achieving students to their nearest higher education institution) during their first year in sixth form, encouraging them to aim higher in life. As part of this study,

- 11,104 young people, across 300 schools were part of the study.
- Students either received a letter from a male former student, sent to their school in November, or a letter from a female former student, sent to their home in April, or both letters, or neither letter.
- Outcomes are tracked through UCAS applications up to two years later (to allow students to apply during a gap year).

¹ Anders, J. (2012). The Link between Household Income, University Applications and University Attendance. *Fiscal Studies*, 33(2), 185–210

² Hoxby, C., & Turner, S. (2013). Expanding college opportunities for high-achieving, low income students. *Stanford Institute for Economic Policy Research Discussion Paper*, (12-014).

³ Hoxby, C., & Turner, S. (2013). Expanding college opportunities for high-achieving, low income students. *Stanford Institute for Economic Policy Research Discussion Paper*, (12-014).

- We find that there are no statistically significant effects on students' likelihood of applying to university overall.
- We find that receiving both letters significantly increases the chance of applying to a Russell Group University, from 19.9% to 23.2%.
- Receiving both letters significantly increases the chance of receiving and accepting an offer from a Russell Group University, from 8.5% to 11.4%.
- We estimate that the trial led 322 additional students to accept places at Russell Group Universities, compared to had the trial not taken place.

Introduction

Attending university is a life-changing opportunity that can bring high returns to both the individual and country.⁴ In an economy increasingly driven by knowledge and ideas, the supply of highly-skilled graduates is likely to become ever more important over coming years. Therefore, it is vital to sustain high levels of university attendance and a pipeline of graduates to meet the needs of employers and society.

The expansion of higher education in England has seen the number of young people progressing to university increase substantially over recent years. In 2016, 32.5% of 18 year olds in England entered higher education, the highest entry rate ever recorded.⁵ This means that last year young English people were 31% more likely to enter higher education than in 2006. There has been particular progress for students from disadvantaged backgrounds: in 2016 18 year olds from the least advantaged areas of England were 73% more likely to enter higher education than in 2006.^{6 7} These students were 51% more likely to enter a highly-selective university than five years' previously.⁸

However, there are still large socio-economic gaps in participation, with advantaged young people in England 2.4 times more likely to enter higher education than their disadvantaged peers.⁹ This gap is even wider at the most selective universities and in 2016 3.6% of disadvantaged young people from the least advantaged areas of England entered a highly selective university, compared to 21.3% of applicants from the most advantaged areas.¹⁰

⁴ Walker, I., & Zhu, Y. (2013). The impact of university degrees on the lifecycle of earnings: some further analysis.

⁵ UCAS (2016). End of Cycle report.

⁶ The POLAR3 classification groups areas across the UK based on the proportion of the young population that participates in higher education. Disadvantaged students are defined as those from POLAR3 quintile 1 areas (those with the lowest rates of participation) and advantaged students are those from POLAR quintile 5 areas (those with the highest rates).

⁷ UCAS (2016). End of Cycle report.

⁸ Highly-selective is defined as 'higher tariff' in UCAS analysis. Institutions are grouped based on the average levels of attainment of their accepted applicants in recent cycles. A provider belongs to either the lower, medium, or higher Tariff group, and each group of providers accounts for around a third of all UK 18 year old acceptances in recent cycles.

⁹ UCAS (2016). End of Cycle report.

¹⁰ UCAS (2016). End of Cycle report.

Differing levels of attainment are a key explanation for this gap. For example, students eligible for free school meals are much less likely to achieve 5 or more A*-C grades at GCSE including English and Maths than their more advantaged peers (39.1% vs 66.7% in 2016).¹¹ This gap persists in later stages of education; for example in 2011, of those entering at least one A-level, just 4.1% of free school meals pupils achieved three or more A*-A grades, compared to 10.6% of other pupils.¹² Moreover, there is evidence to suggest that nearly twice as many advantaged as disadvantaged bright students take one or more of the A-level subjects seen as providing access to selective universities.¹³ This means some disadvantaged students do not have the right grades, in the right subjects, to successfully apply to these institutions.

However, the socioeconomic gap in university attendance cannot entirely be explained by differences in background characteristics and prior attainment.¹⁴ One possible explanation for the remaining gap is that disadvantaged young students are less likely than their advantaged peers to aspire to enter university, and selective universities in particular. Indeed there is research which shows that, once ability is controlled for, most of the difference in university entry is driven by application decisions.¹⁵ This is consistent with recent research that shows that aspirations and attitudes have a significant impact on rates of university attendance.¹⁶ For example, white working-class boys tend to associate higher education with “otherness” and find it difficult to reconcile the concept of academic study with their notions of working-class masculinity; this may be part of the reason that this group have such low rates of university attendance.¹⁷

The government has set clear goals on widening participation in higher education: to double the proportion of people from disadvantaged backgrounds entering university in

¹¹ DfE (2017). Revised GCSE and equivalent results in England, 2015 to 2016.

¹² A-level attainment of pupils eligible for free school meals in 2010/11 (Parliamentary Question, [116023] (9 July 2012)

¹³ Sammons, P., Toth, K., & Sylva, K. (2015). Subject to Background: What Promotes Better Achievement for Bright but Disadvantaged Students?. *Sutton Trust*.

¹⁴ Crawford, C., & Greaves, E. (2015). Socio-economic, ethnic and gender differences in HE participation.

¹⁵ Anders, J. (2012). The Link between Household Income, University Applications and University Attendance. *Fiscal Studies*, 33(2), 185–210

¹⁶ Bowes, L., Evans, J., Nathwani, T., Birkin, G., Boyd, A., Holmes, C., ... & Jones, S. (2015). Understanding progression into higher education for disadvantaged and under-represented groups.

¹⁷ Archer, L., Pratt, D., & Phillips, D. (2001). Working-class Men’s Constructions of Masculinity and Negotiations of (Non) Participation in Higher Education. *Gender and Education*, Vol. 13, No. 4., 431-449.

2020 compared to 2009, and to increase the number of black and minority ethnic (BME) students going to university by 20%.¹⁸ Since 2012 universities wishing to raise their fees above the basic rate have been required to develop annual “access agreements”, which set out how they will sustain or improve access for underrepresented groups. As a result, universities and colleges estimate they will spend £833.5 million to support access, student success and progression in 2017-18.¹⁹ However, although universities are taking steps to better evaluate their activities, there is currently little publicly available evidence on the effectiveness of programmes that might be scaleable at a national level.

There is a growing body of behavioural science research that can provide insights into individual decision-making and help shape policies to encourage students to make better choices for themselves. For instance, phenomena such as hyperbolic discounting can lead us to procrastinate, not making important actions that are in our interest, or gathering new information when the situation changes.²⁰ We may also be overly attentive to salient information (for example tuition fees), and so ignore important, but less immediately available, information - such as support available for students from families with low incomes.²¹ This may result in students from low-income backgrounds, who tend to be less well informed about university options, disproportionately relying on misconceptions to make post-16 study choices.^{22 23} In a growing and diverse higher education sector, this has significant implications.

Research has shown that providing personalised information on the application process and cost associated with higher education causes high-achieving low-income students in the US to apply to and attend more and better colleges.²⁴ This is despite the fact that

¹⁸ <http://www.publications.parliament.uk/pa/bills/cbill/2016-2017/0004/en/17004en03.htm>

¹⁹ OFFA (2016). 2017-18 Access Agreements: institutional expenditure and fee levels.

²⁰ Rubinstein, A. (2003). “Economics and psychology”? The case of hyperbolic discounting. *International Economic Review*, 44(4), 1207-1216

²¹ Gabaix, X., & Laibson, D. (2005). Shrouded attributes, consumer myopia, and information suppression in competitive markets (No. w11755). National Bureau of Economic Research.

²² Avery, Christopher and Thomas J. Kane. 2004. “Student Perceptions of College Opportunities: The Boston COACH Program.” In C. M. Hoxby (Ed.), *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It*, p. 355-394. Chicago: University of Chicago Press.

²³ Behavioural Insights Team (2016). “Moments of Choice”.
<http://www.behaviouralinsights.co.uk/publications/moments-of-choice/>

²⁴ Hoxby, C., & Turner, S. (2013). Expanding college opportunities for high-achieving, low income students. Stanford Institute for Economic Policy Research Discussion Paper, (12-014).

information provided is readily available online. One interpretation of this is that small friction costs to gathering information about university disproportionately influence behaviour, and that delivering that information directly can overcome these friction costs. In contrast with resource intensive outreach activities, the cost of this type of intervention is very low.

There is a clear need for similar timely, low cost interventions that can raise aspirations amongst students from disadvantaged backgrounds in England. There is also a weight of evidence suggesting that behavioural science has considerable potential to improve outcomes in this area. For example, Silva et al (2015) find that inspirational talks from a young person from a similar background is effective at increasing interest in attending university, while Hoxby and Turner (2013), find that waiving the small (\$6), application fee to selective colleges increases application rates. In this paper we report the results of a randomised trial conducted in partnership between the Behavioural Insights Team and the Department for Education.

The study

The study was developed during the Autumn of 2013. The sample of the study were all students who were 'on track' to attend a selective institution (that is, they received 367 GCSE points from their 8 best GCSEs or equivalent, and where more than 20% of high achieving students attended the Higher Education Institution (HEI) that was closest to the school.

For logistical reasons, we conducted a cluster randomised controlled trial. As such, all students in a particular school who met the criteria above (good GCSE grades) received the same materials. Our sample therefore consists of 11,104 students, spread across 300 schools, an average of 37 students per school.

Schools were randomly assigned to one of four different conditions. A control condition, who received no intervention, and three treatment conditions, which are described below.

Treatment 1: Letter from Ben

The first treatment condition was a letter, delivered to schools in November of 2013. Each letter (see below) was printed on Department for Education headed paper, and in an envelope addressed to the student. All envelopes for the same school were sent contained in a single, larger envelope addressed to the school.

The letter, which was written by Ben, a student at the University of Bristol at the time of the study, emphasised several facts thought to be important for this cohort in deciding to attend university. That different universities offer different opportunities, that employers care which university you go to, and that more selective universities can actually be

cheaper for students from low income families than less selective universities. The letter was written from Ben, and mentioned that he himself had suffered from these misconceptions. Every letter was hand signed by Ben.

Treatment 2: Letter from Rachel

Participants in the second condition were sent a letter to their home address in April of 2014. These letters were written by Rachel, who was also a student at Bristol at the time of the study, using the letter from treatment 1 as a template, and so emphasised the same things. These letters were also printed on DfE headed paper and signed by Rachel.

Treatment 3: Letter from Ben and Rachel

Participants in this condition received both a letter to school from Ben in November and a letter to their home from Rachel in April. This group can be thought of as receiving both treatment 1 and treatment 2.

Figure 1: Example Letter from Rachel



Please send any queries to:
Department for Education
Sanctuary Buildings
Great Smith Street
London
SW1P 3BT
www.education.gov.uk/help/contactus/dfe

[full name]
[House number]
[Street]
[Town / City]
[Postcode]

A message from Rachel Prescott, currently studying at University of Bristol

Dear [firstname]

You may have received a letter from Ben, a student at the University of Bristol, congratulating you on your fantastic GCSE results. I'd like to add my congratulations! I am also studying at the University of Bristol – and wanted to follow up Ben's letter by reminding you that, with the grades you have achieved, you have more options open to you than most.

When I received my GCSE results in 2010, I had good grades and wanted to continue my education, but had no idea where to start looking. I decided to apply to university and after doing some research online and attending several open days I realised that there are so many opportunities to study at prestigious universities for students who have achieved grades like yours and mine.

I remember how difficult it was to choose a University. Each one is so different and you'll have many things to consider when deciding, such as the type of courses they offer and where they are based. The majority of people assume that the more prestigious universities are the most costly. This is not necessarily true, as these universities often provide larger grants or bursaries (money you are given and don't have to pay back) and government maintenance loans are more generous if you do choose to live away from home. I now live 200 miles from home, but have not suffered financially for doing so.

It's a very exciting time – but also important as the choices you make will affect your future. I would advise you to do plenty of research, visit open days and speak to students and lecturers. To remind you of the websites that can help, <http://university.which.co.uk/> gives you honest advice about different places you could choose, www.gov.uk/student-finance and www.moneysavingexpert.com/students/student-loans-guide can help with any financial questions you may have.

I hope this letter helps you to realise that you've a great future ahead of you.

Yours sincerely,

Research has shown that providing young people with better information on the costs and benefits of attending different universities helps them make better decisions about their future. The Department for Education has arranged for pupils that have performed very well in their GCSEs to receive letters from a current university student explaining how to find out more.

Results

Participants in the trial who are going to apply to university will mainly have done so in either the 2014-2015 academic year (if they applied while in year 13), or the 2015-2016 academic year (if they applied after year 13; for example, while on a gap year). Data were therefore collected based on applications to start university either in September 2015, or in September 2016.

UCAS provided the Department for Education with data that allowed us to determine how many of the young people in each school in our sample applied to university, how many applied to a Russell Group university, how many were made an offer by those universities, and how many students accepted offers. Although the Russell Group is not a perfect proxy for selective universities (there are many selective universities outside the grouping), given that the letters did not mention the Russell Group specifically, it seems a good proxy for aiming at more selective institutions.

Based on the number of students within each school who were in our sample initially, we created a pseudo-individualised dataset by expanding the dataset to contain one observation per student, rather than one observation per school.²⁵ This method of pseudo-individualisation is made more challenging by limitations to the data provided by UCAS for data protection reasons. In particular, when five or fewer participants from a given school engaged in a behaviour (for example, applying to a Russell Group University), the number is rounded to the nearest five. This means that for some schools, where 1 or 2 students applied, the data understate the number of applications (as 0 applications), and for schools where 3 or 4 students applied, the data overstate the number of applications (as 5 applications). Due to the random assignment of schools to the treatments, this should not favour one treatment group or another, although it may mean that the exact *levels* of some outcome measures may not be reliable.

Analyses were conducted using a linear prediction model in which the probability of a given participant applying to university estimated by regressing their pseudo-individual outcome on their treatment assignment. To control for the fact that randomisation took place at the level of the school, standard errors in these regressions are clustered at the level of the school.

The figures below show the results of this study for our six outcome measures.

²⁵ We note that the ranking of conditions and approximate effect sizes are not influenced by this expansion.

Figure 2: Effect of treatments on application to university

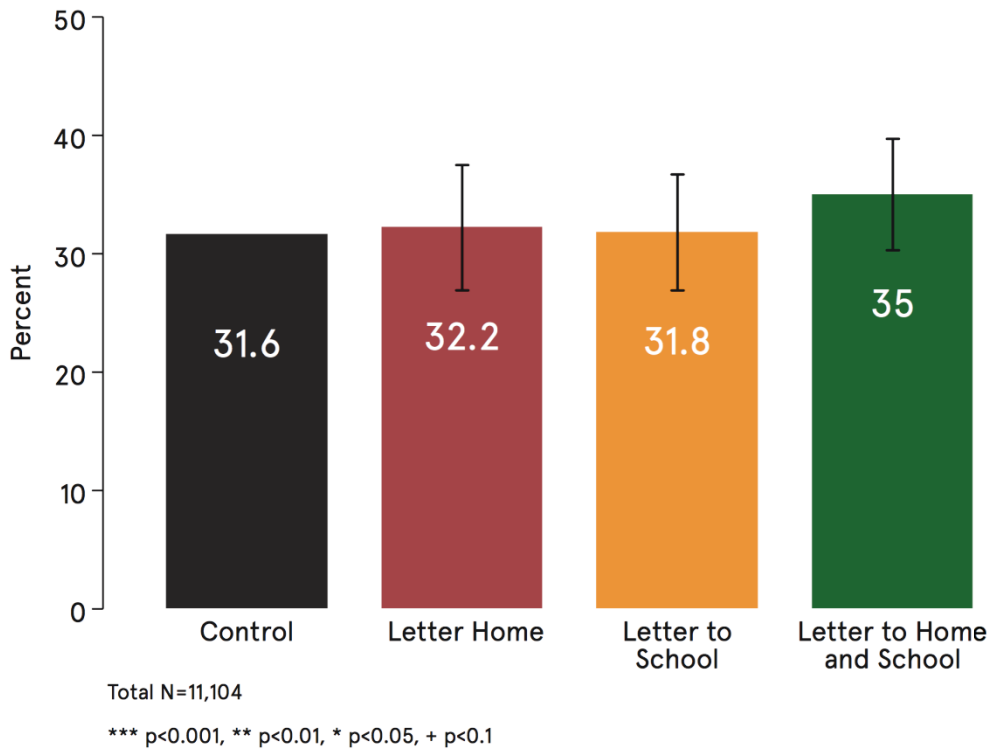


Figure 3: Effect of treatments on application to Russell Group universities

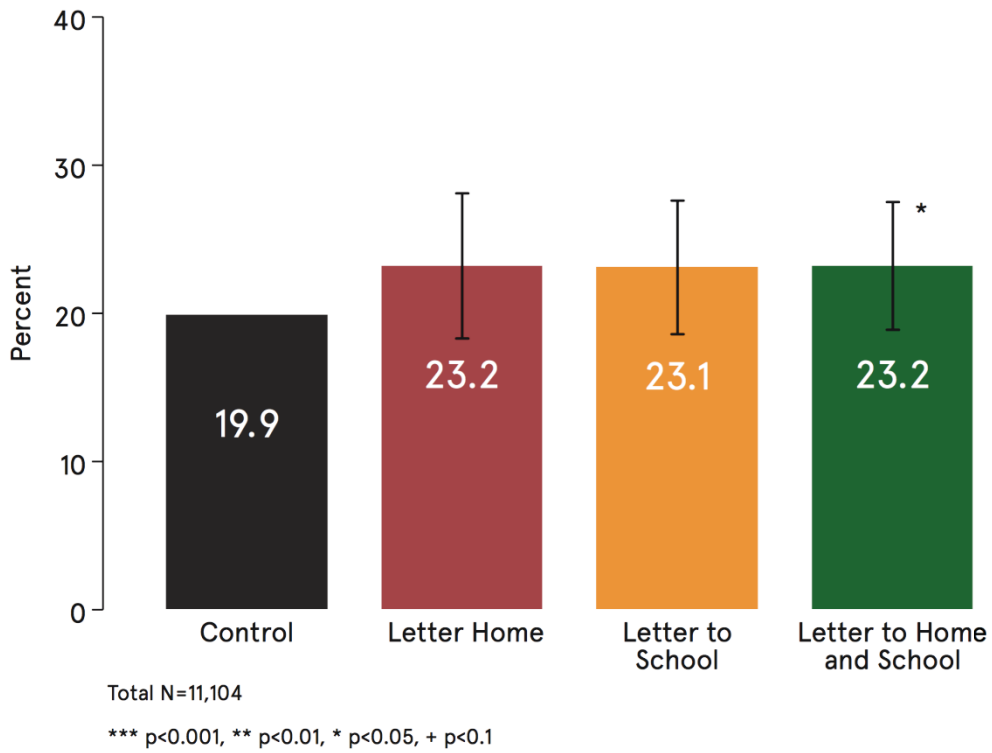


Figure 4: Effect of treatments on Likelihood of being made an offer by a university

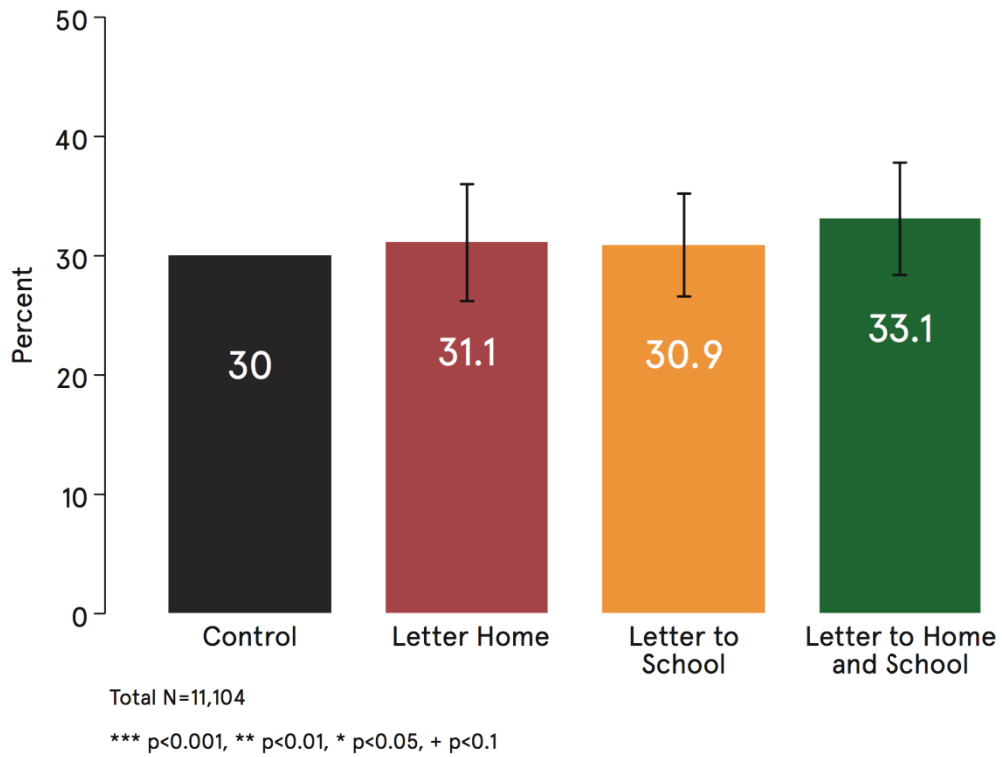


Figure 5: Effect of treatments on Likelihood of being made an offer by a Russell Group university

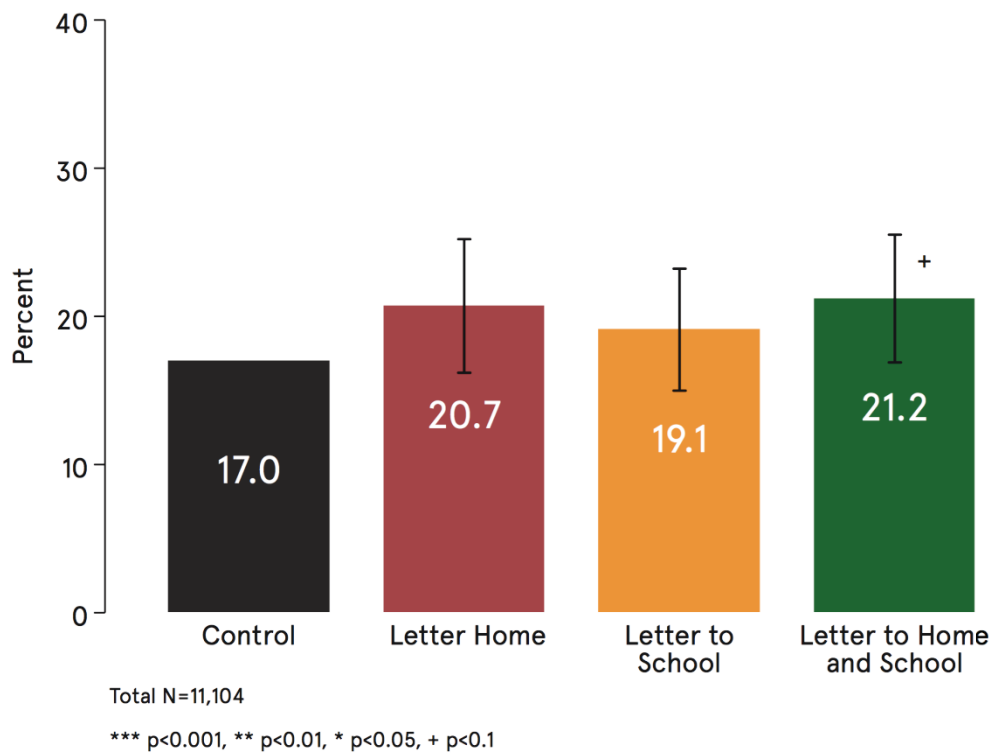


Figure 6: Effect of treatments on Likelihood of accepting an offer by a university

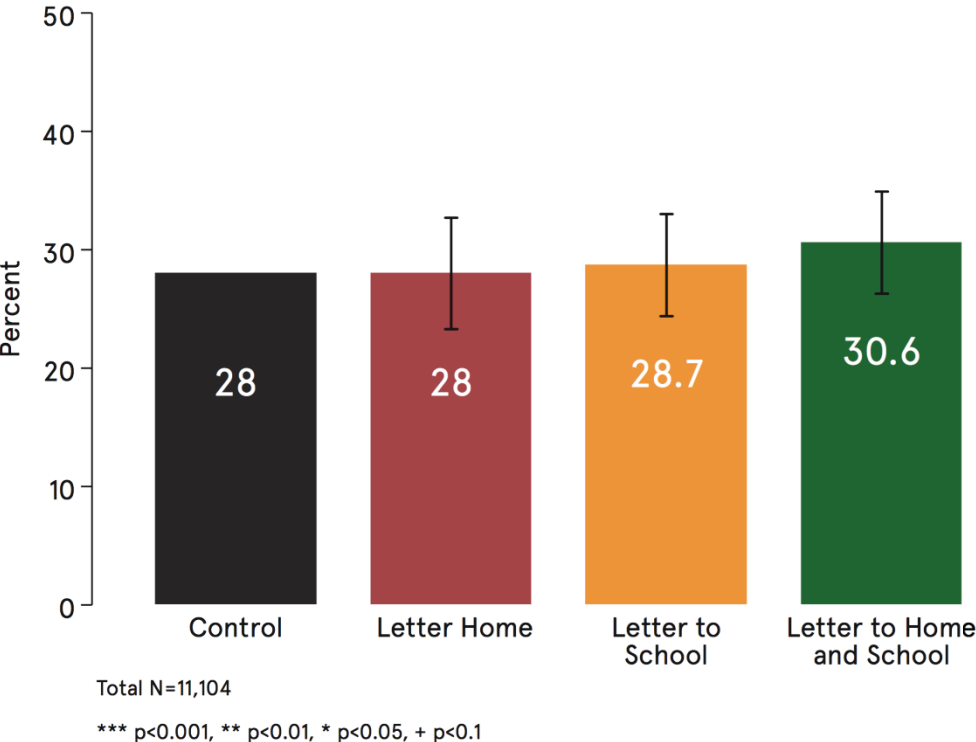
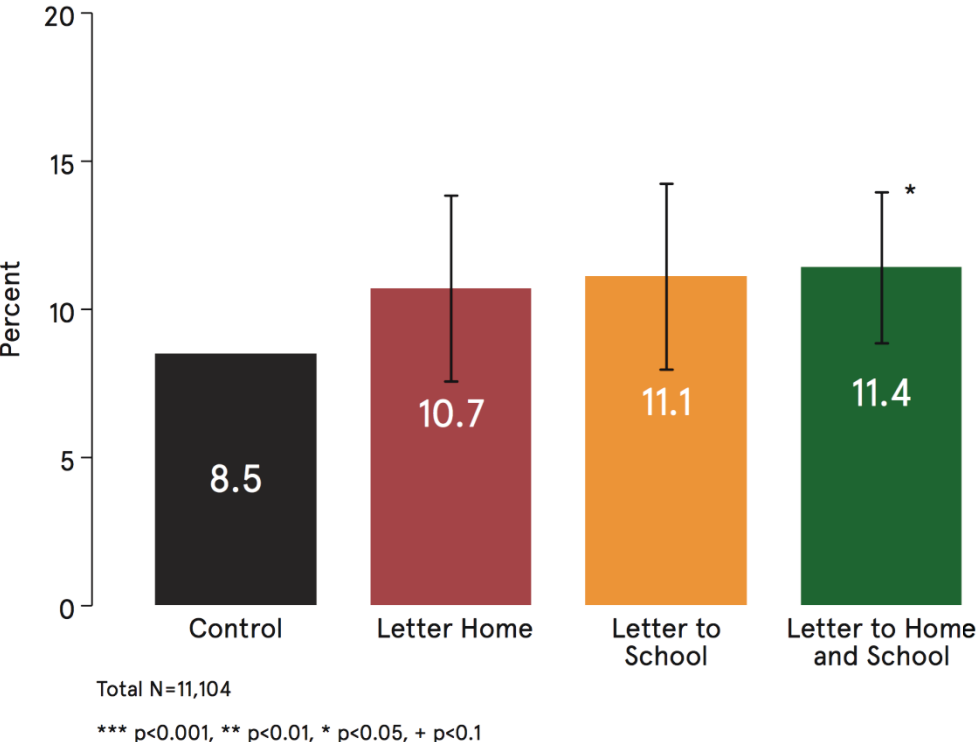


Figure 7: Effect of treatments on Likelihood of accepting an offer by a Russell Group university



As can be seen from the figures above, there are no statistically significant effect of any of our letters on outcomes relating to university in general. However, we do find consistently more positive effects on more selective (Russell Group) universities. Although each letter increases rate of application, offer and acceptance of offers at Russell Group universities, these effects are not statistically significant at the 5% level.

On the other hand, participants who received *both* letters to their school and to their home were significantly more likely both to apply to a Russell Group university and to accept an offer from a Russell Group university: increasing the proportion of students accepting an offer from these universities from 8.5% to 11.4%, an increase of 2.9 percentage points. Although the effect of receiving both letters on the probability of being made an offer by a Russell Group university was not statistically significant at the 5% level, it was statistically significant at the 10% level. Overall, it seems reasonable to conclude that these letters are effective both at boosting aspiration, and getting students to act on this aspiration.

Value for Money

Our results have shown that a simple intervention, targeted at high achieving students from low income families, can substantially increase the rate at which these students apply to selective universities, are made offers by those universities, and accept those offers once they receive them.

Although the intervention is simple, it is not free, and so it is appropriate to consider whether the letters represent value for money. The Department for Education estimates the total cost of administering the letters at £10,000. In total, 11,489 letters were sent, at an average cost of £0.87 per letter. We estimate that 222 additional young people attended a selective university as a result of this trial (see table 1), at a cost of £45.05 per additional student

Table 1 Attendance to university by treatment received

Treatment	Sample Size	Estimated attendance (if control)	Actual attendance	Difference
Letter Home	2,717	230	291	61
Letter to School	2,863	243	319	76
Both Letters	2,959	252	338	86
Overall	8,539	726	948	222

Conclusions and next steps

This large scale trial has demonstrated that receiving letters from role models from similar backgrounds has a substantial effect on the likelihood of students from who might have not applied to selective universities applying to, being offered a place at, and accepting a place at, a Russell Group university.

The goal of our letters was to encourage applications to more selective universities; though not perfect, we consider Russell Group a good proxy for selective universities in general. We have found in particular that although there is some benefit of receiving a letter either to home or to school, there is an additional benefit to receiving letters both at home and at school.

The fact that students who receive our treatments also receive offers from selective universities, rather than simply applying to them, and are no less likely to receive or accept offers from universities overall, suggests that our intervention is working on the type of young person identified by Anders (2012) - students with good grades who nevertheless do not apply to selective universities.

It is noteworthy that although our interventions have been successful on one margin, we see no overall effects on the likelihood of students applying to university. One direction for future research in this area would be to investigate whether different interventions might influence this broader behaviour. Similarly, the letters sent have had a significant effect, but there are still many young people in our cohort who could apply to more selective universities than they do. It seems likely that for many young people, the letters sent in this trial were not impactful, but a different letter, perhaps from a more specific role model, could be. We should also recognise that there are multiple agents involved in the decision to apply to University, including students' parents and teachers. Future research could investigate whether messages more targeted to participants' own needs or identity, or which communicate with other people in their networks, could encourage young people missed by our intervention. Finally, this research has focused on a highly salient moment in a student's life - when they are thinking about applying to university - but in many cases will be too late to influence the grades that give them a chance to access to university.



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