Department for Education

Examining the London advantage in attainment: evidence from LSYPE

Research report

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An introduction to the London Effect

The London Effect, in its simplest form, refers to the higher attainment and progress of pupils in London compared to the rest of England in recent times. It is an effect which is most apparent amongst pupils from a disadvantaged background, more often defined by their eligibility for free school meals, and on whom the present report is focused. In general, we use the term 'the London advantage', because the London effect results in favourable educational outcomes for pupils in London.

The London Effect is, however, a complex phenomenon without a standard definition or single explanation. Existing literature on this topic has not produced conclusive evidence regarding the cause of such regional disparity and, as such, we investigate it further in this report.

The issue is complicated by the fact that it is not a static effect – there have been changes in both the size of the London advantage in attainment over time and in its apparent drivers. Furthermore, while secondary schooling is, of course, vital to the key stage 4 (KS4) attainment of pupils, their primary education also plays an important role.

As such, as well as looking at the apparent drivers of the London advantage in attainment in 2015, we also examine how this has changed since 2006. And we not only consider pupils' overall attainment at KS4, but also look at how much progress they have made between the end of their primary schooling (KS2) and the point at which they sit their GCSEs (KS4).

While much literature on this subject refers specifically to the *London* Effect, which suggests it is a phenomenon unique to London, it should be noted that similar attainment disparities are seen in other metropolitan areas. As such, our analyses exclude pupils living in Birmingham and Manchester on the basis that their inclusion would potentially mask or dilute some key findings[1].

[1] Sample sizes were not large enough to allow us to analyse pupils in Birmingham or Manchester as standalone comparator groups.

Factors driving the London advantage in 2015

In 2015, disadvantaged **pupils in London had an average best 8 score that was 46.7 points higher** than that of disadvantaged pupils in the rest of England – the equivalent of around **eight GCSE grades**. By way of illustration this could equate to the difference between a young person achieving eight C grades rather than eight D grades.

In the first stage of our analyses, which only considered structural factors (in common with much of the earlier investigation of the London Effect), **combined ethnicity, language, and immigration[2] differences were highly important and accounted for around a third of the overall London attainment** advantage among disadvantaged pupils. Whilst there is some debate about whether ethnic minority or immigration status is driving this effect, we found that ethnic differences were far more important. The effect was largely driven by the higher prevalence of disadvantaged pupils from Bangladeshi, Black African and 'other'[3] ethnic backgrounds living in London, who tended to have higher KS4 attainment than other disadvantaged groups.

Once we also took account of agency factors, **the importance of ethnicity, language, and immigration differences disappeared**. Instead, **the most important drivers of the London effect were parental expectations** about the young person going to university (accounting for 27.1% of the overall London effect), **hours spent on homework** (18% of the total effect), **academic self-belief** (17.5%), and **personal aspirations for Year 12** (7.8%). Parental **attendance at parent-teacher evenings**, which may to some extent serve as a wider proxy for parental engagement with their child's education, was also a relatively important factor in the London attainment advantage (5.5%).

Compared to disadvantaged White pupils, disadvantaged Bangladeshi, Black African and 'other' pupils were more likely to have higher aspirations and self-belief, to spend more time doing homework and to have parents with higher expectations and who were more likely to attend parent-teacher evenings. Together, these factors accounted for the estimated contribution of ethnicity, language, and immigration differences in our initial model.[4]

Our analysis also shows that **some of the structural factors specific to London may actually serve to *reduce* the size of the London advantage** in attainment. In

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[2] The term 'ethnicity, language, and immigration' is used throughout the report to capture the combined total effect of these three characteristics.
[3] This group consists primarily of young people from East Asian and White non-British backgrounds.
[4] It is important to note that our models cannot tell us whether these factors are driving the higher attainment of Bangladeshi, Black African and 'other' pupils. It is also plausible that higher attainment also contributes to their higher self-belief and aspirations and more studious behaviour.

particular, the relatively high levels of area deprivation among disadvantaged pupils in London (i.e. the proportion living in the most nationally disadvantaged areas) means the scale of the London attainment advantage may be smaller than it would have been otherwise. Overall, living in the most disadvantaged areas was associated with lower attainment, and more than two thirds (69.1%) of the disadvantaged pupils in London lived in the most disadvantage quintile nationally, compared to two fifths (39%) of pupils in the rest of England.

Overall, the model which incorporated both structural and agency factors was able to explain around two thirds (65.8%) of the London attainment advantage.

Changes between 2006 and 2015

The size of the London attainment advantage amongst disadvantaged pupils narrowed by the equivalent of almost two GCSE grades between 2006 and 2015 (reducing from 56.9 to 46.7 best 8 GCSE points). Underlying this change, there are a number of factors that could be at play, although we cannot confirm they are causal.

Increasing levels of confidence among disadvantaged pupils in the rest of England may have contributed to a decline in the London advantage over time. In 2006, disadvantaged London pupils were 1.6 times more likely to expect to get into university, than those in the rest of England (67.4% in London said they were 'very or fairly likely' to get in compared to 41.7% elsewhere), whereas the respective figure in 2015 was 1.4 times more likely (77.7% compared to 56.1%). As a consequence of this change, differences in university expectations made a smaller contribution to the London advantage in 2015.

Similar improvements in the relative expectations of parents were also evident**.** In 2006, parents in London were markedly more likely to want their children to stay in full time education, while those in the rest of England were more open to pathways such as apprenticeships or employment. By 2015 this difference had narrowed to near parity between London and the rest of England (the raising of the participation age to 18 may have played a role in this). Similarly, in 2006 almost twice as many London parents reported that it was very or fairly likely that their child would attend university compared to those living in the rest of England (77.5% compared to 40.7%). By 2015 this disparity had fallen such that parents in London were only 1.4 times more likely to expect a university pathway than those elsewhere (86.1% compared to 60.1%).

Overall declines in levels of truancy and risky behaviours were more rapid in the rest of England than in London between 2006 and 2015. In 2006, disadvantaged pupils in the rest of England reported that they were 1.5 times more likely to truant (33.1% compared to 21.8%) and 3 times more likely to engage in three or more risky behaviours

than disadvantaged pupils in London (18.6% compared to 6.2%). In 2015 the respective figures were just 1.1 (19% compared to 17.3%) and 1.5 times as likely (4.3% compared to 2.8%). Whilst these factors accounted for around a sixth of the London attainment advantage in 2006 (7.6 points) this had fallen to practically zero in 2015.

Levels of education among disadvantaged London parents improved over time. Whereas average levels of education among London parents were lower in 2006, and meant the London advantage might have otherwise been greater still, by 2015 disadvantaged London parents were more educated on average. However, along with the factors outlined above, this improvement was seemingly counteracted by an increase in the area level disadvantage London pupils experienced over time.

The London advantage in school progress

When we adjust for differences in prior attainment (at KS2) and consequently assess the London advantage in pupils' school progress, we get some measure of the extent to which the contribution of agency factors described above were a consequence of higher levels of prior attainment in London. For example, we get a sense of whether disadvantaged pupils in London and their parents had higher aspirations/expectations because they were already higher achievers, perhaps having benefitted from better primary education and/or other early life advantages.

Differences in prior attainment accounted for around one fifth of the London advantage in school progress in 2015 (19.3%), whereas its contribution had been less than one tenth in 2006 (7.9%). This was because of a widening gap in KS2 scores between disadvantaged London pupils and those in the rest of England over time (with disadvantaged pupils in London increasingly outperforming those elsewhere)[5].

Nevertheless, agency factors identified as being important to the London *attainment* advantage continue to be important in terms of the London advantage in *progress* as well (albeit less so). In particular, **the number of hours spent on homework was one of the most important drivers of the London progress advantage** (accounting for 14.2% of the total effect). Parental attendance at parent-teacher evenings also continued to be a significant factor to the London advantage in school progress (accounting for 4.1% of the effect).

Differences in parental aspirations/expectations between parents in London and those in the rest of England remained significantly important after adjustment for KS2 attainment

[5] The estimated difference in Key Stage 2 scores between disadvantaged London pupils and those in the rest of England sitting their GCSE exams in 2006, was 0.5 points (borderline significant). The Key Stage 2 difference for pupils sitting their GCSE exams in 2015 was 0.9 points.

(15.2%), suggesting they were more than simply a response to their child's earlier attainment. Despite this finding, we cannot say for certain that higher expectations of London parents were driving higher levels of progress. It is also quite possible that the reverse is true, with parents responding instead to their child's continuing level of progress. A reciprocal relationship is most likely, with **high parental expectations encouraging good progress and in turn good progress encouraging higher parental expectations**.

When looking at *progress*, the contributions of pupils' own aspirations/expectations and self-belief were approximately half that of their contribution to the London advantage in KS4 *attainment*. **Higher levels of prior attainment among disadvantaged London pupils therefore appeared to account for a large part of their higher level of self-belief and higher personal aspirations/expectations** in Year 11.

Ethnicity, language, and immigration differences were more important for explaining the London advantage in school progress. This was because **the attainment advantage of ethnic minority pupils described above was predominantly to do with their greater progress during secondary school**. Ethnic differences in key stage 2 scores were much smaller and non-significant.

Robustness of conclusions

As our analyses had to exclude individuals for whom there was missing data, the analysis sample differed slightly from the full sample. The main point to note is that the average attainment scores in the analysis sample were somewhat higher than those in the total sample. As such, our findings will be less applicable to the lowest attaining pupils.

Our models assume the associations between the factors described and pupil attainment would be similar in the rest of England to what they were in London if their distribution were also the same. We also estimated models in which associations with pupil attainment in the rest of England were assumed not to change. Overall, results of these two approaches were very consistent, however there were also some notable differences. The combined importance of ethnicity, language, and immigration differences remained consistent, however there were changes in their individual contributions. We should remain cautious, therefore, in attributing too much cause to these characteristics without recognising that they might be associated with different outcomes depending on where pupils lived.

What further questions could usefully be a topic of further research

Following the last point above, further research examining the individual contribution of ethnicity, languages and place of birth to attainment in London and in the rest of England at different points in time using larger samples would be useful for understanding the underlying dynamic of their contribution and how this may have changed.

Our study focuses on the attainment and progress of pupils at Key Stage 4, however we also highlight the growing importance of Key Stage 2 differences. Further research, examining the contributions of similar measured factors during primary school both on Key Stage 2 scores and their implication for agency factors during secondary school would be useful. This would help us further unpick the relationship between prior attainment, aspirations and behaviours.

Time spent on homework is clearly important to the London attainment advantage and merits further investigation. The complex lives of disadvantaged pupils may make addressing this via policy intervention a less straightforward opportunity for narrowing the gap than it might at first appear. Whilst the benefits of homework for pupil attainment has been previously demonstrated, a better understanding of *why* pupils outside London are spending less time on homework will be vital in determining how best to address the issue.

We considered a much broader range of factors for analysis initially, only retaining those that were significantly important. A number of additional school factors were found non-significant, which included admissions policy, school type, religious status, whether the school had a sixth form, the pupil to teacher ratio and the percentage of non-White British pupils and statemented pupils. A measure of primary school effectiveness was also non-significant. Similarly, the contribution of factors relating to the activities engaged in outside school, preferences for future employment, the quality and nature of relationship with parents, parental engagement with school life, access to extra paid for tuition, and self-reported relationships with teachers were also non-significant or very small (see appendix A).

Nevertheless, there were a number of factors that we were unable to include because we did not have an appropriate measure. In particular, other measures relating to the school, including a measure of school ethos, school curriculum, and both teaching practices and quality could potentially provide valuable additional findings.

Our analytical approach

The data which inform this report are primarily drawn from the Longitudinal Study of Young People, which captures the lives of pupils in England who undertook their GCSE

qualifications in 2015 (cohort II) and 2006 (cohort I). These data were supplemented by administrative data which provides details of the KS2 and KS4 attainment of each of the pupils in our analysis sample, alongside data on school and area characteristics taken from the National Pupil Database (NPD).

Eligibility for free school meals, the defining characteristic of the sample for our analyses, was also drawn from the NPD. This is a key indicator of economic disadvantage used in education to direct resources towards young people who are economically deprived. The eligibility criteria for FSM are relatively complex but relate primarily to the parent or guardian's eligibility for a range of means tested state benefits[6]. Where we discuss 'disadvantaged young people' throughout the report, it is this group which we refer to.

The findings in this report were primarily derived using an Oaxaca and Blinder decomposition analysis method to estimate the contribution of a range of factors to the London advantage in pupil attainment and school progress.

The decomposition analyses were estimated in in two stages. First, we estimated the contributions of differences in *structural* factors between London and the rest of England, which includes differences in pupils' individual characteristics, their ethnicity, language, and immigration status, family backgrounds, schools, and areas. Structural factors are relatively (if not definitively) fixed and many of these are drawn from the administrative data sources which have provided the basis of many of the previous investigations into the London Effect.

Second, factors more often attributed to human *agency* were added to our model. These account for differences in pupils' educational aspirations and expectations, their levels of self-belief, reading habits, homework behaviours, extracurricular activity, truancy, engagement in risky behaviours, as well as the aspirations and expectations of their parents and peers. While it may appear that agency factors would be markedly easier for social policy to influence than structural factors, it should be noted that aspirations, self-belief and behaviours will themselves be structured according to the child/parent's lived experience and also be somewhat embedded.

By estimating our models in two stages we can assess the extent to which the London advantage is attributable to differences in the structural characteristics between London and the rest of England, and then subsequently also assess the extent to which the contribution of structural differences are mediated through related differences in pupils' aspirations, attitudes and behaviours (as well as their parents and peers).

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[6] Further details can be found at:
https://www.gov.uk/apply-free-school-meals

Attainment at KS4 was measured using the best 8 GCSE points score (a scale which allocates points according to the grades achieved in the young person's eight highest scoring GCSEs). Measures of progress were calculated by using KS2 attainment as a baseline measure.

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Chapter 1 Introduction

The London Effect is a complex phenomenon without a standard definition or single explanation. In its simplest form, it refers to the higher attainment and progress of pupils in London, compared to the rest of England in recent times, an effect which is most apparent amongst pupils from a disadvantaged background. As we go on to illustrate in a review of the literature, there is a lack of conclusive evidence regarding its cause, which warrants further analyses of more recent data.

In the present study, we carried out Oaxaca and Blinder decomposition analyses (Fortin, Lemieux, & Firpo, 2011; Jann, 2008) to estimate the contribution of a range of factors to the London advantage in pupil attainment and school progress. Using data from the Longitudinal Study of Young People, which captures the lives of pupils in England who undertook their GCSE qualifications in 2015 (cohort II) and 2006 (cohort I), we examine a broad range of factors with a view to understanding the London advantage, including those relating to the young person themselves, their family and peers, the schools they attended and the areas in which they lived

Chapter 2 Literature

Introduction

This literature review aims to examine the key findings from the existing evidence base. It sets out to examine how disadvantage can affect attainment; how the London Effect is defined; how London compares to other big cities; and how far ethnicity, the characteristics of those living in London, and London-based improvement initiatives can go in explaining the London Effect.

Overall, the literature identifies that London pupils outperform their peers elsewhere in England on key measures of educational attainment. This is especially true for disadvantaged pupils and for measures of high academic performance (8 or more GCSEs at A*-B level). The findings illustrate that the attainment gap between pupils in London and the rest of the country is now long-standing, emerging as an observable trend in the late 1990s, evident in both primary and secondary school qualifications. Though pupils in London have unique characteristics in a range of ways, the evidence to date suggests that this cannot fully explain the rapid improvement in the performance of London's disadvantaged pupils.

The underlying factors and policy initiatives influencing London's notably higher academic performance remain unclear, with no single factor explaining this success. Thus, developing a better understanding of the London Effect is important for developing effective education policy.

How does disadvantage affect attainment?

Disadvantage is strongly associated with lower educational outcomes at each stage of education (Lessof, Ross, & Brind, 2019; Lessof et al., 2018; Sutherland, Ilie, & Vignoles, 2015; Kiernan & Mensah, 2011; Dickerson & Popli, 2018). Furthermore, an attainment penalty can lead to the accumulation of disadvantage over a young person's life course (Blanden & MacMillan , 2016). Learning how the educational outcomes for disadvantaged pupils, in particular, in London are different to those for disadvantaged pupils in the rest of England could help identify potential improvements in educational outcomes for disadvantaged pupils across England.

A common measure for disadvantage is a pupil's eligibility for free school meals (FSM). In 2015, 66% primary school pupils eligible for FSM met the expected attainment standard at the end of Key Stage 2 (KS2) compared to 83% of their non-FSM peers(Allison, 2018). This was also true at the secondary school level where 33% of FSM pupils met the expected standard compared to 61% of non-FSM pupils at Key Stage 4 (KS4). This attainment gap between pupils is enduring and only closing slowly;

disadvantaged pupils fall back by approximately two months behind more affluent pupils for each year of secondary school, and it is estimated that it would take around 50 years for the disadvantage gap to close entirely (Andrews, Robinson, & Hutchinson, 2017).

However, the attainment gap does not lie solely between pupils of different socioeconomic backgrounds it is also found between pupils living in and outside of London. Furthermore, the difference in attainment between pupils in London and the rest of the country is even greater for disadvantaged pupils. London pupils from low income households are more likely to achieve five good GCSEs by the end of KS4: they outperformed their peers from the rest of the country by approximately 10 percentage points between the academic years 2006/7-2014/15 (Dunatchik, Wishart, Cartagena-Farias, & Smith, 2018). This means that the performance penalty of being disadvantaged is smallest for pupils in London. The gap between disadvantaged pupils in London and the rest of England is even more pronounced for measures of high performance as pupils eligible for FSM in London are more than twice as likely to achieve 8 or more GCSEs at A*-B grades compared to similar pupils in the rest of the country (Blanden, Greaves, Gregg, Macmillan, & Sibieta, 2015). Disadvantaged children have been observed to make better progress at age 5 in Key Stage 1 (KS1) in London compared to the rest of England as they underperform at age 3, but become the highest performing region by age 7 (Dunatchik et al., 2018). They also make faster progress during secondary school in relation to their prior attainment and high performance at KS2 is a key contributor to the improved performance at KS4 for disadvantaged London pupils over time (Blanden et al., 2015). Perhaps related to this, pupils in London are more likely to continue on to Higher Education (Crawford & Greaves, 2015) which further illustrates the success of education progress in London compared to the rest of England.

So what is the London Effect?

The ‘London Effect’ is a catch-all term that is used to describe the better performance of London at a point in time and its faster rate of improvement relative to elsewhere in England, since the late 1990s for disadvantaged pupils, and since the mid 2000s for all pupils. There is no standard definition of the London Effect across studies and this partly accounts for the disparity in findings set out in this literature review.

This trend of improved performance among London pupils is not a new phenomenon. London’s disadvantaged pupils began to outperform the rest of the country in the late 1990s in both primary and secondary stages of education (Blanden et al., 2015). Prior to this, disadvantaged pupils in London performed similarly to, or worse than, other regions. Outer London has consistently been the region with the highest attainment on the headline GCSE measure for several years. Though Inner London’s performance was worse than any other region in earlier years, by 2012 rapid improvement meant it had the second highest results after Outer London (Greaves, Macmillan, & Sibieta, 2014).

How does London compare to other big cities?

Focusing on the GCSE performance of disadvantaged pupils, Greaves et al. (2014) find that London's improvement is not unique. Other large cities such as Birmingham and Manchester - and to a lesser extent Bristol, Leeds and Sheffield – had also shown rapid improvements in the decade from 2004 to 2014. Additionally, Burgess (2014) finds that on various measures of GCSE performance, not only do Birmingham pupils outperform the rest of England, they do so to a greater extent than London pupils. This suggests that some 'big city factors' may be at play when explaining London's rapid improvement, however, what these factors are has not been defined by the literature. As a result, uncovering what a 'big city factor' involves may be able to explain what drives the London Effect.

What is the role of ethnicity in explaining the London Effect?

Disadvantaged pupils in London are more likely to have a number of characteristics associated with improved performance, such as being from a non-white ethnic background; having English as an additional language (EAL); and having a peer group that contains more disadvantaged children (Blanden et al., 2015). London's significantly higher share of high-performing ethnic minority pupils could be a key driver of its educational success. Studies take different stances on the role of ethnicity, reflective of their different focus.

Burgess (2014) uses a measure of pupil progress at GCSE on the basis that taking prior attainment into consideration provides a better measure of the effectiveness of secondary schools. He finds that London pupils progress faster than those elsewhere and argues this can be explained entirely by its ethnic mix of pupils. He argues that there would be no London Effect if London had the same ethnic composition as the rest of England, and this holds for each year considered in his study (2004-2013). Using FSM eligibility as a measure of disadvantage, Burgess goes on to demonstrate that white FSM eligible pupils are the lowest attaining major ethnic group across all indicators of KS4 attainment; there is a smaller proportion of this group amongst London's disadvantaged pupils, particularly in inner London. The higher proportion of pupils from ethnic backgrounds associated with high performance, such as Asian and Black African pupils, helps explain London's academic success. Overall, Burgess attributes this success primarily to its high concentration of non-white migrant families whose children have higher aspirations and ambitions than their disadvantaged white peers.

Besides aspirations, speaking English as an additional language is associated with higher academic performance in secondary school, though EAL pupils have lower attainment than non-EAL pupils in primary school (Demie, 2018). London has a higher percentage of EAL pupils compared to the rest of the country due to its higher migrant

and ethnic minority population. There are observed differences in attainment between EAL pupils in London and the rest of England, with London-based pupils performing better at reading, writing and maths in both KS2 and KS4. Additionally, the attainment gap between EAL and non-EAL pupils is smallest in London. Demie attributes the better performance of London's EAL pupils to a higher level of teaching and classroom support expertise in London compared to the rest of the country; effective progress monitoring systems, which help identify when pupils need additional support; and a high importance placed on English language acquisition for those who are not fluent in English.

However, ethnicity has not been found to totally explain the London Effect across the literature. Though Burgess (2014) finds it an effective explanation for the headline GCSE attainment measure, it is limited in its ability to explain measures of high attainment. For example, pupil demographics does not fully explain the high number of London pupils achieving 8 or more GCSEs at grades A*-B. Additionally, though ethnic mix may account for the difference in attainment amongst pupils in London and the rest of England, it does not fully explain the difference in performance amongst disadvantaged pupils, for example FSM eligible pupils (Greaves et al., 2014).

Furthermore, Blanden et al. (2015) find that, though ethnicity can explain a substantial part of the higher level of KS4 performance among disadvantaged pupils in London, only a small amount of the growth in *progress* can be explained by changes in the ethnic mix. For example, already high performing disadvantaged ethnic groups, such as Black African pupils, continue to perform well but do not show substantial improvement over time.

It has also been found that pupils in London across all ethnic groups, including white British pupils, outperform their peers in the rest of England (Baars et al., 2014; Cook, 2012; Lessof et al., 2018). Taking into consideration the contribution of ethnicity to London's success but also its limitations, further exploration of the underlying causes of the London Effect is needed to fully understand the role of ethnic mix and wider factors.

How similar are London pupils and parents to those living elsewhere?

As previously mentioned, London pupils are different in a number of ways compared to pupils in the rest of England, as are their parents. Compared to the rest of the country, in addition to the factors mentioned above, there are also clear differences in London's population characteristics. The population in London is more likely to be professional, highly educated and newly resident in the UK. As such, parents in London, with a higher level of education, are more likely to be involved with their children's education and may be better equipped to provide educational support (Dunatchik et al., 2018), London pupils may benefit from their parents' characteristics.

Though gentrification has been raised as a potential contributor to the development of the London Effect, the literature does not suggest this to be a good explanatory factor. The trends in these professional and qualifications characteristics look similar in London to elsewhere with a growth in the prevalence of these characteristics in all areas, not just in London (Baars et al., 2014; Greaves et al., 2014). As such, London has not been found to have gentrified at a faster rate than the rest of England in terms of the share of the population who are highly educated, in higher professional occupations and in the average growth of disposable income.

Additionally, parents of pupils from ethnic minorities have demonstrated a 'willingness to travel' to a higher performing school (Weldon, 2018). The higher proportion of pupils from ethnic minority groups in London compared to other parts of England may make this relevant to the London advantage. Although mean incomes differ between ethnic groups, meaning some groups are more able to pay higher housing prices to live in the catchment areas of desired schools, the willingness to travel prevalent in all other groups suggests that pupils' own place of residence is not a significant barrier to attending schools associated with higher attainment.

Overall, studies therefore dismiss gentrification as an explanation for London's disadvantaged pupils performing better over time.

How do London-based improvement initiatives contribute to the London Effect?

There is some argument that targeted school improvement interventions and increased funding for London schools have driven the London Effect. Several policy initiatives centred around school improvement have targeted secondary schools in London since the early-mid 2000s, including the London Challenge, Teach First and Sponsored Academies, as well as improved support from local authorities. These have been cited by some as explanations of London's success (Baars et al., 2014) due to their promotion of the better use of data, a new culture of accountability, practitioner-led professional development and leadership.

However, assessment of the direct impact of such policies is hampered by the lack of robust evidence. Further, studies have found that the London Effect predates the introduction of these major interventions, thereby ruling them out as primary drivers of London's academic success (Blanden et al., 2015; Greaves et al., 2014). Gorard and Siddiqui (2019) identify that London schools were recipients of higher levels of funding prior to interventions such as the London Challenge and began their school improvement projects with an already higher level of attainment and a lower poverty gap.

However, higher levels of funding for London schools does not provide a full explanation for their high performance. London schools receive more funding than in the rest of England due to a higher proportion of disadvantaged pupils and higher salary costs: London schools spend approximately 40% more per pupil than schools outside London. However, this predates the London Effect by several decades as this differential was higher still in the 1980s (Belfield & Sibieta, 2016). This suggests that funding alone is unlikely to be a key contributor of London's improvement.

Although it can be argued that school improvement initiatives and funding have played a role in sustaining London's improvement from primary to secondary school levels, and may have helped to formalise best-practice in school management and leadership, there is less evidence showing that they have driven London's academic success. While some common cultures and practices among high performing schools in London have been identified, these are also repeated to some extent outside of the capital and cannot be said provide the necessary conditions for the London Effect(Baars, Shaw, Mulcahy, & Menzies–LKMco, 2018). There is general agreement that there is no single factor, policy or otherwise, that explains the London Effect and it is likely to represent a complex combination of factors over a sustained period.

Literature summary

Different studies have defined and measured the London Effect in different ways. The term is used to describe the better performance of London at a point in time and its faster rate of improvement since the mid to late 1990s relative to elsewhere, both for disadvantaged pupils and all pupils. This lack of a standard definition across the literature partly accounts for the disparity in findings and makes necessary the further exploration of the phenomenon.

In summary, the literature identifies that London outperforms the rest of the country on key measures of attainment, and this is particularly the case for disadvantaged pupils. This long-standing gap cannot be fully explained by its observable pupil and parent characteristics or by policy interventions. London's pupils are different in many ways to their peers in the rest of England, but this does not totally account for the rapid improvement of London's academic performance, nor does this explain why London's schools have improved. The lack of conclusive evidence warrants further analyses of more recent data in order to gain a richer understanding of this phenomenon, which may be the result of a complex interplay of all the factors identified in the literature over a sustained period of time, and perhaps other unobserved factors.

Chapter 3 Methods and Data

Oaxaca and Blinder decomposition

The Oaxaca and Blinder method decomposes group differences in mean scores or a prevalence – in this case, differences in mean 'best 8 points score' at key stage 4 – between disadvantaged pupils living in London and disadvantaged pupils living elsewhere in England – into 'explained' and 'unexplained' differences. 'Explained differences' are the differences in attainment attributed to *differences in the distribution of endowments,* in this case, differences in the distribution of factors that predict attainment. For example, differences in levels of parental education or the ethnic minority composition of London and the rest of England. 'Unexplained differences' are differences in attainment attributed to *differences in coefficients* (or associations between each factor and attainment) [7]. For example, parental education may be a stronger predictor of pupil attainment in London than it is in the rest of England.

In line with previous studies that have used decomposition analysis to understand the London effect, we only report the 'explained differences' here. These are differences directly observable from the data and are considered therefore more robust. For example, a significant part of the London advantage in attainment is attributed to the greater prevalence of non-UK born pupils living in London who have higher levels of attainment on average, which is something we can observe and explain using our data. However, our analysis also shows that the attainment advantage associated with being non-UK born was greater *outside* London in 2006. The reasons for this are not directly observable in our data and therefore considered 'unexplained'.

Decomposition analysis allows us to estimate the unique contribution of each factor or set of factors to the London advantage in attainment. These were then converted into percentages of the total London advantage explained. Quite often the joint contribution of a set or sets of factors are estimated together under a domain. For example, in this case, the joint contribution of ethnic minority group, language spoken in the home and place of birth (UK or elsewhere) were estimated under the domain 'ethnicity, language, and immigration'. This approach is especially useful where sample sizes are small, but also allows us to understand and compare the contributions from different spheres of pupils' lives. Nevertheless, it is often still useful to know which, if any, of the underlying factors are driving the contribution of a domain, so the 'unpacked' results are also presented.

[7] 'Unexplained differences' also includes any difference in attainment we were unable to explain using the measures include in our model.

Stages of Analysis

Our analyses follow a set of logical steps beginning first with a decomposition of the London advantage in attainment 2015. This is followed by a comparison with the findings of an identical analysis for 2006, which tells us whether and why the London advantage has changed over time. In the second part of our study we focus on the period during secondary school only, examining the difference in school progress between completion of key stages 2 and 4. Throughout our analyses we also consider how changes to the assumptions that underlie our analyses might alter our conclusions.

Decomposition of the London advantage in attainment in 2015

We begin with a decomposition of the London advantage in best 8 GCSE points score for 2015. As with all of our models the decomposition analyses are estimated in in two stages. First, we estimate the contributions of differences in structural factors between London and the rest of England, which includes differences in pupils' individual characteristics, their ethnicity, language and immigration status, family backgrounds, schools, and areas. This comprises many of the factors previously examined using data from the national pupil database (NPD), as well as additional factors that are available in LSYPE.

Second, factors more often attributed to human agency[8] were added to our model. These account for differences in pupils's educational aspirations and expectations, their levels of self-belief, reading habits, homework behaviours, extracurricular activity, truancy, engagement in risky behaviours, as well as the aspirations and expectations of their parents and peers. By following a two staged approach, we can first estimate the extent to which the London advantage is attributable to differences in the structural characteristics of London and the rest of England, and second, to assess extent to which their influence is mediated through related differences in aspirations, attitudes and behaviours (including those of parents and peers).

Comparisons across time

We then repeat our analyses in a decomposition of the London advantage in best 8 GCSE points score for 2006. Differences in the attainment of disadvantaged pupils living

[8] Although these are called agency factors we should avoid assuming *too much* agency in their interpretation. For example, the experiences and opportunities of disadvantaged young people (and their parents) are significantly limited when compared to those of their more affluent peers, which then has implications for their aspirations, self-belief and behaviours (Hoskins and Barker, 2017, Willis, 1977).

in London and the rest of England can be linked to differences in the distribution of factors known to predict attainment across place. By comparing our results across time, we can also link consistencies or changes in our results with continuity or change in the distribution of these factors across time.

This is especially useful because our data is observational[9] and cannot therefore tell us whether a relationship is causal or not. By linking changes in the contribution of factors across time with changes in their relative distribution across place, we can get a little closer to identifying the most likely direction of association. Furthermore, findings that we are able to replicate using an identical yet independent source of data collected at two different points of time, can also be considered more robust.

Changing the underlying assumptions

Decomposition analyses requires making an important assumption about the nature of the associations between our factors and pupil attainment. The associations used to estimate the models described above are from the full sample (i.e. a sample that includes disadvantaged pupils in London and the rest of England), adjusted for all of the other factors in the model, and includes an indicator for place of residence. In other words, these are the average (or pooled) associations, which lie somewhere between the separate associations for London and the rest of England. The assumption being that if the distribution of a factor in the rest of England was the same as what it was in London, then we would also expect its association with pupil attainment to be more similar to that in London (although not necessarily exactly the same).

An alternative assumption, and one which we explore here, is that the associations would in fact remain the same in the rest of England. In other words, the associations with pupil attainment are those estimated using the rest of England sample only. In truth we cannot know how the associations would behave if the distributions were changed. However, by comparing our findings this way, it provides us with a better understanding of what might happen. We would argue, for example, that consistent findings are more robust and that the lack of consistency means we should be cautious in our conclusions. There might be other factors at play that remain unaccounted for in our models, perhaps reflecting an unobserved interaction between factor and place.

Decomposition of the London advantage in school progress

We also then conduct analysis which adjusts for differences in pupils' prior attainment (Key Stage 2 tests sat at the end of Primary school). This has two important implications

[9] Unlike experimental data, where causality of factors is identified through their direct manipulation.

for our analyses. First, the nature of what is being examined changes from differences in KS4 attainment to differences in the educational progress pupils made during secondary school. Second, the estimated contributions of factors that we previously examined are further adjusted for pupil ability (measured at age 11), and by definition, all of the factors that would have contributed to differences in measured ability at age 11. By comparing our results for school progress with those for attainment, we can get some measure of the extent to which previous contributions to the London advantage are a consequence of higher prior attainment in London. For example, a measure of the extent to which higher aspirations/expectations of London parents are a result of higher levels of key stage 2 attainment among London pupils. Alternatively, there may be evidence of a consistency in contribution of some factors, highlighting their key relevance during this period.

Understanding the importance of prior attainment is especially relevant to the London advantage in attainment. One of the hypotheses behind the London effect is that differences in the quality of primary education is driving the London effect (Greaves et al., 2014). Assuming this is correct, we would expect that differences in key stage 2 scores explain the largest part of the London advantage in key stage 4 attainment. In Chapters 6 we present the findings from a decomposition of the London advantage in school progress for both 2015 and 2006, assuming average associations with attainment. These analyses are then repeated under the assumption that associations with pupil attainment remained the same in the rest of England.

Data

The Longitudinal Study of Young People in England (LSYPE)

Our study uses data from the Longitudinal Study of Young People in England (LSYPE) cohorts 1 (also known as 'Next Steps') and 2 (also known as 'Our Future').

Both cohorts track the lives of young people from the age of 13/14 (Year 9) through to the completion of their schooling and beyond. While the study employs a mixed mode methodology in its later years, all data in this report were sourced from waves which were conducted using a face to face interviewing methodology, primarily drawing upon the third wave of each cohort when the young people were aged 15/16 (Year 11). Parents were also interviewed during these early waves, meaning that measures of parental aspiration/expectation and involvement in parent-teacher evenings were asked directly of the parents themselves rather than indirectly via the young person.

The use of both cohorts enables us to compare our findings across two independent yet identical data sources, providing far greater insight than that gained from an assessment of the London advantage at one point in time only.

Previous research on the London advantage in key stage 4 attainment tended to use data from the National Pupil Database (NPD) and was, with notable exceptions, limited therefore, to assessing the contribution of a restricted range of structural factors, such as differences in ethnic minority composition. In most cases, factors such as these do not directly contribute to differences in pupils' attainment but are instead linked with a range of mediating factors that more readily explain attainment(Schoon, Martin, & Ross, 2007). LSYPE has a very broad range of factors which we can explore in our analysis, including aspirations, attitudes, values, behaviours, as well as those relating to pupils' parents and peers.

Study sample

The study sample comprises disadvantaged pupils living in London or the rest of England who sat their GCSE exams in 2006 (LSYPE I) or 2015 (LSYPE II). Consistent with previous studies we define disadvantage in terms of eligibility for Free School Meals. This is a key indicator of economic disadvantage used in education to direct resources towards pupils who are economically deprived. The eligibility criteria for FSM are relatively complex but relate primarily to the parent or guardian's eligibility for a range of means tested state benefits[10].

Previous research has found similar advantages in key stage 4 attainment among disadvantaged pupils in other large cities, in particular, Manchester and Birmingham (Greaves et al. 2014). We considered including these Manchester and Birmingham pupils together with those in London to increase our overall sample and assess a 'metropolitan advantage' in attainment. However, sample sizes were too small for us to adequately capture the attainment advantage identified in these cities. As a consequence we decided to exclude these pupils altogether as an alternative, which was including them as part of the 'rest of England' sample, would have diluted the attainment difference we were interested in measuring. For reasons of sample size, our London sample includes pupils in both Inner and Outer London, despite previous research showing a stronger London effect for Inner London. We also excluded pupils attending special schools because there were too few in our sample for us to adequately capture.

Eligible samples for analysis in the study comprised 1,751 respondents in 2006 (LSYPE I), and 1,547 in 2015 (LSYPE II). Excluding respondents with missing information on any measure used in our multivariate models meant that our samples for decomposition analyses comprised 1,064 respondents in 2006, and 1,009 in 2015.

[10] Further details can be found at: https://www.gov.uk/apply-free-school-meals

Measures

Outcome measures

Our focus is on the London advantage in key stage 4 best 8 points score, which measures attainment in terms of GCSE grades or their equivalents for the best 8 GCSEs achieved (6 points on this scale is equivalent to one GCSE grade). In addition, we explore the London advantage in school progress made during secondary school - which is measured as best 8 points score adjusted for prior attainment at key stage 2.

Factors for explaining the London advantage

As we note above, the decomposition analyses were estimated in two stages. First, we examined the contribution of differences in structural factors between London and the rest of England to the London advantage in attainment, before assessing the additional contribution of differences in agency type factors. The concept of structure and agency has been borrowed from sociology(Sewell, 1992) and is used here to distinguish between factors relating to the young person over which they or their parents have little (or far less) control, and those over which they can exert greater agency.

Structural factors include individual characteristics such as their gender and ethnicity, but also their parents'[11] level of education, the structure of the family in which they live, and levels of Free School Meal eligibility at the school they attend.

Agency factors are those such as pupils' (and their parents') aspirations, attitudes, values and behaviours. Despite the distinction, it's important to note that structural factors, particularly those associated with disadvantage, can limit the experiences and opportunities that pupils (and their parents and peers) are exposed to, which will help shape their aspirations and self-belief, for example.

Structural factors

We assessed the contribution of five structural domains comprised of thirteen underlying factors. These included:

Individual Characteristics

- SEN status

[11] Of course a parent could enrol in courses to improve their level of education, suggesting a degree of agency here. However, they have far less control over the freedoms their current education affords them, both in terms of the type of work they can do that also includes whether or not this offers them the freedom to enrol in such a course.

- Gender

Ethnicity, language, and immigration status

- Ethnic group (White, Mixed Race, Indian, Pakistani, Bangladesh, Black African, Black Caribbean, 'Other'[12])
- Languages spoken in the home (English only, English first and other language(s), Other language first or main, Bilingual)
- Place of birth (UK or elsewhere)

Family background

- Parental education (Degree or equiv., HE below degree, A level or equiv., GCSE or equiv., Other, None)
- Tenure (Owner occupier/part own, Council, Housing association, Private rent, Other)
- Family structure (Two natural/foster parents, Step family, Single parents, no parents)

School characteristics

- Size (total number of fulltime pupils)
- % eligible for free school meals (FSM)
- % unauthorized absences (half-days)

Area

- Area level deprivation (IDACI quintile)

Agency factors

We assessed the contribution of ten agency domains comprised of fourteen underlying factors. These included:

Personal aspirations/expectations

- Aspirations for Year 12 (FTE A levels, FTE A level plans not certain, Learn a trade/Work based training/PTE, Work fulltime, Something else, Undecided)
- University expectations (Likelihood of applying to university to do a degree: Very likely, fairly likely, not very likely, not at all likely, don't know/undecided)

[12] Includes pupils from other ethnic backgrounds including East Asian

Self-belief

- Self-rated ability in school work (Very good, above average, average, below average, not at all good, don't know)
- Expect to get into university if applied (Very likely, fairly likely, not very likely, not at all likely, don't know, not applicable)

Reading (Frequency of reading: most days, more than once a week, once a week, less than once a week, hardly ever, never)

Homework (How many hours spent doing homework a week: 11 or more hours, 6-10 hours, 3-5 hours, 1-2 hours, less than 1 hour, none)[13]

Extra-curricular activity

- Used school sport facilities outside lessons (5 times a week or more, 3-4 times a week, once or twice a week, less than once a week, never, not available)
- Attended school clubs or societies (5 times a week or more, 3-4 times a week, once or twice a week, less than once a week, never, not available)

Truancy (Did not play truant, played truant for particular lessons/the odd day or lesson, several days at a time, several weeks at a time)

Risky behaviours (Count of whether in the last 12 months the young person had: been a current frequent smoker, current frequent drinker, had tried cannabis, engaged in petty crime, had taken part in fighting or a public disturbance[14])

Parental aspirations/expectations

- Aspirations for Year 12 (FTE, Learn a trade/training course/work with training, Apprenticeship, Work without training, Something else, Don't know)
- University expectations (Likelihood of child applying to university to do a degree: Very likely, fairly likely, not very likely, not at all likely, don't know)

Parental engagement in child's education (Attended parent-teacher evenings: at least one parent attended, neither parent attended)

Aspirations of peers for Year 12 (Most of the young person's friends intends to: stay in FTE, leave FTE, something else, don't know)

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[13] This is one of the rare instances where the measurement varied across cohorts. In 2006, young people were asked how often they were set homework (most days, once a week at least, occasionally < 1 per week, hardly ever, never). Interestingly, and despite this difference, our models show that both were equally important for the London advantage in attainment/school progress.
[14] In 2006 the question was 'had hit or attached anyone'.

Variable selection

A far broader range of factors were first considered for analysis, reflecting the wealth of appropriate measures available in LSYPE. In an initial step we assessed the individual contribution of these factors to the London advantage in attainment and considered the items' level of missingness. The results of these analyses are presented in Appendix A.

A factor will contribute to the London advantage in attainment if it fulfils two conditions. Its distribution in London should be different to its distribution in the rest of England, and it should also be associated with attainment. If neither or just one of these conditions applies, then it will not contribute to the London advantage in attainment.

Further details for the factors used in our final decomposition analyses are provided in Appendix B, describing its distribution in London and in the rest of England, and its association with attainment (best 8 points score) in London, the rest of England, and overall (i.e. averaged across geographical area). This information is useful in the interpretation of the final decomposition models as it can help us understand why and how a factor contributes to the London effect. For example, a factor with a small association with attainment may nevertheless be important if the difference in its distribution between London and the rest of England is especially large. Alternatively, its distribution may be relatively similar across place, but its association with attainment might be large.

This information is also useful for comparing changes in the contributions of factors over time. It tells us whether a change is the consequence of a factor's changing distribution, its changing association with attainment, or both. Where appropriate we refer to this initial analysis to illustrate the mechanisms behind some of the factors driving the London advantage.

In our final selection of measures, consideration was given to the balance between the inclusion of factors previously shown as important, levels of item missingness, and where there was evidence of a significant contribution to the London attainment. Measures were also required to be available in both cohorts to enable a comparison over time.

Limitations

As with most secondary data analyses, missing data at the variable level contributes to a significant degree of missingness overall. This has the potential for biasing our conclusions. Concerted effort has been made to reduce the impact of missingness throughout the study. For example, where the most important measures were concerned, an attempt was made to balance sample loss with model informativeness, so that our final model remains both useful as well as representative of the underlying associations in the wider population. In the end, many models were estimated, each

containing different variations of covariates and levels of missingness. Those factors that are shown to be important in our final models remained consistently important throughout.

In 2010, two teachers' unions voted for a boycott of the SATs for year 6 pupils because of concerns about too strong a focus on testing and disquiet about school league tables and their impact on schools with disadvantaged pupils. A substantial number of schools took part and, as a result, the LSYPE2 data set has missing KS2 data for approximately 30% of the cohort. Given the necessity of having KS2 scores for measuring progress through the school system, DfE funded RAND Europe and Cambridge University to construct imputed data sets which could be used to approximate KS2 attainment in projects such as ours. A carefully developed and valid method of data imputation was employed that adequately accounts for missingness (seeSaunders et al. (2016) for further detail of the methods employed) [15].

Consequently, we linked imputed KS2 data to our survey data sets for the purpose of our analysis of the London advantage in school progress. Since the recommended approach to using this data is to incorporate multiple variants of the imputed data, we employed a specific STATA command enabling our analysis to handle this particular complexity. Given small sample sizes we also report borderline significant findings (those at $p < .1$, for which there is a ten percent chance that an effect will not exist in the wider population). The standard cut-off in the social sciences is $p <= .05$ (or 5 percent chance), although $p <= .1$ is often accepted within economics.

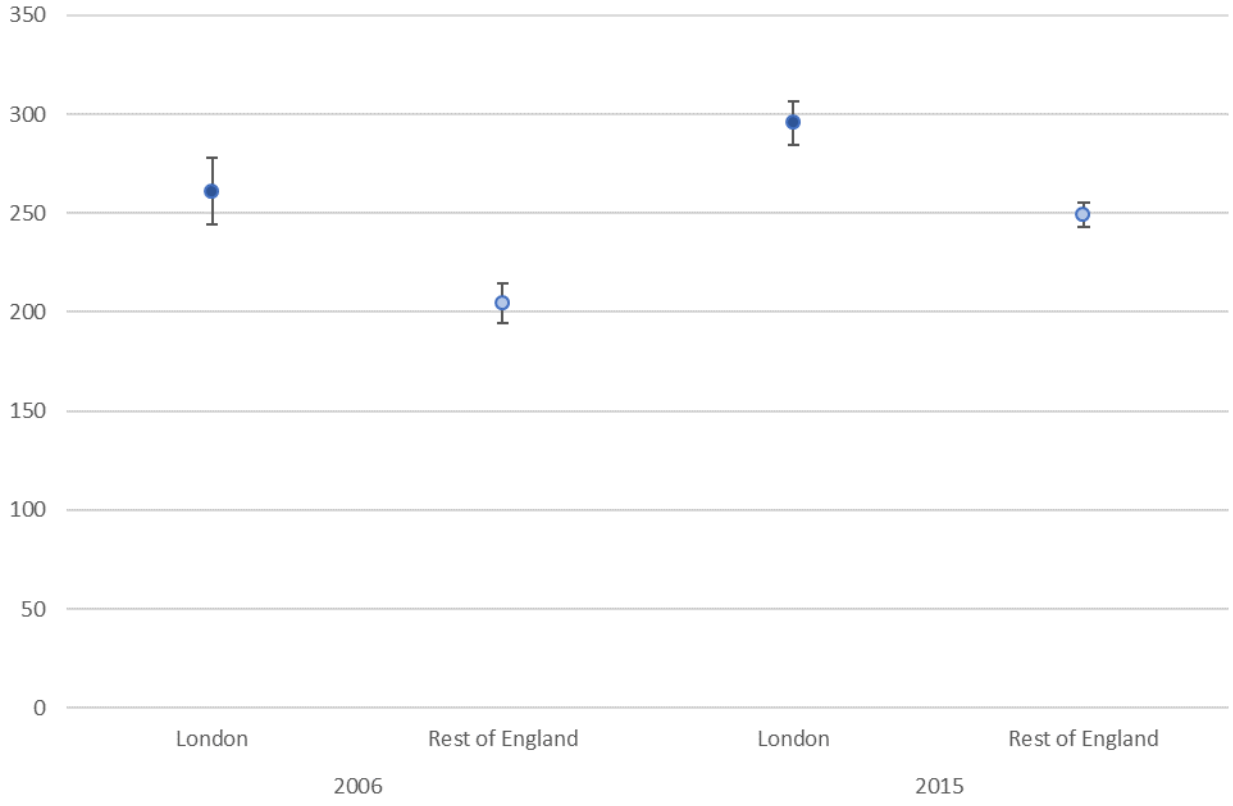
Finally, there are a number of factors that we would have liked to include for which we did not have an appropriate measure. In particularly, further measures relating to the school, including a measure of school ethos, school curriculum, and both teaching practices and quality.

[15] A technical report for this work can be found here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/578541/20161205_Technical_report_FINAL.pdf

Chapter 4 Differences in attainment between London and the rest of England

Figure 1 below shows the average best 8 points score among disadvantaged pupils living in London and those in the rest of England for 2006 and 2015. The London advantage in attainment was 46.7 in 2015, and 56.9 in 2006. This represents a significant difference in attainment of between eight and nine GCSE grades, which could be the difference between gaining 8/9 C grades and 8/9 D grades. The *decrease* in the London advantage between 2006 and 2015 was 10.2 points, or almost two grades.

Figure 1 Best 8 points score among disadvantaged pupils in London and the rest of England (2006 and 2015)



Once we exclude individuals with missing data from our final multivariate models, average scores for best 8 attainment in 2015 were 315.8 (or 7% higher) for London, and 279.3 (or 12% higher) for the rest of England. In 2006, the respective figures were 283.4 (or 9% higher) for London, and 237.7 (or 16% higher) for the rest of England. It is possible therefore, that our findings will be less applicable to the lowest attaining pupils. We also underestimate the London advantage in attainment by 10.2 points in 2015, and 11.2 points in 2006.

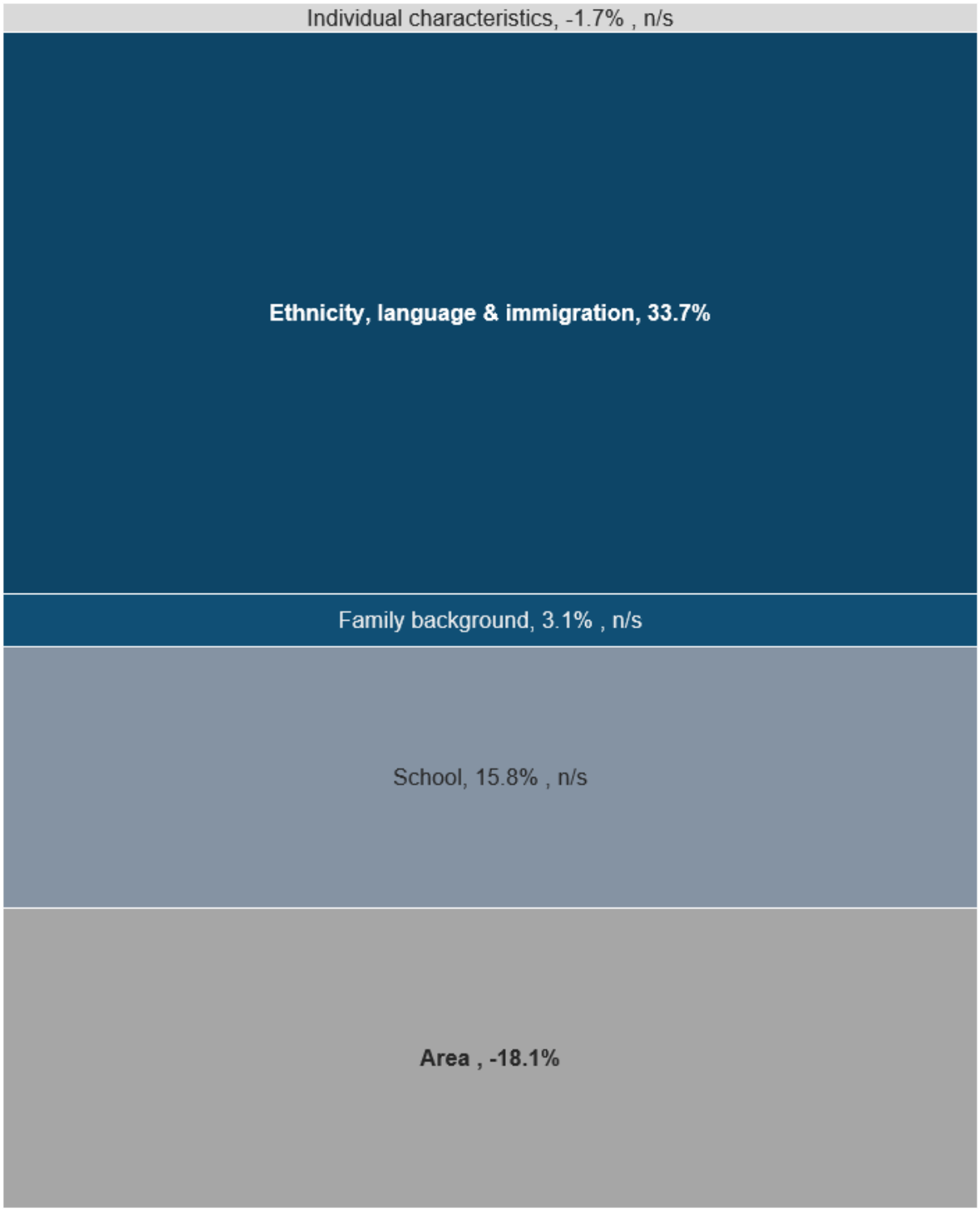
Chapter 5 Decomposition of the London advantage in Attainment

The contribution of structural factors to the London advantage in attainment in 2015

Figure 2 below, presents the findings of a decomposition analysis of the London advantage amongst young people from disadvantaged backgrounds in KS4 attainment in 2015, showing the extent to which the difference in attainment was attributable to differences in the structural characteristics of the lives of pupils living in London compared to those in the rest of England (RoE)[16]. This includes differences in individual characteristics, their ethnicity, language and immigration status, family background, the schools they attend and the areas in which they live. Table 1 unpacks these findings further, showing the contribution attributed to each of the individual factors that make up these domains. Throughout our description of the findings, figures in bold are statistically significant a p<.05, italicised figures are borderline significant at p<.1, and non-significant results are identified by the abbreviation n/s.

[16] Rest of England as defined here excludes Manchester and Birmingham. Disadvantaged pupils living in these districts have shown a similar attainment advantage relative to those living in the rest of England. If we were to include them with our rest of England sample this would dilute the London advantage we are seeking to explain.

Figure 2 The contribution of structural factors to the London advantage in attainment (2015)



Note: Contributions in bold are statistically significant at p<.05 unless indicated

Table 1 The contribution of structural factors to the London advantage in attainment (2015)

Domain	Factor	%
Individual characteristics	Gender	1.0%
	SEN	-2.8%
Ethnicity, language, and immigration	Ethnicity	23.8%
	Language spoken in home	7.8%
	Place of birth	2.1%
Family background	Parental education	4.0%
	Tenure	-4.3%
	Family type	3.4%
School	School size	4.2%
	Percent FSM	1.8%
	Unauthorized absences	**9.7%**
Area	**Area deprivation**	**-18.1%**

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Overall, differences in the distribution of structural factors between London and the rest of England accounted for 32.8% of the London advantage in attainment. This was predominantly attributable to the combined ethnicity, language, and immigration[17] differences between London and the rest of England (RoE), which accounted for one third (**33.7%**) of the London advantage, including differences in ethnic minority composition (23.8% n/s), languages spoken in the home (7.8% n/s) and place of birth (2.1% n/s)[18]. Although differences in ethnic minority composition made the largest contribution overall, there is of course significant overlap between these three measures. When we assessed their contributions individually, differences in ethnic minority composition still made the largest contribution (**42.9%**) but language spoken in the home was also important (**19%**). Birthplace remained unimportant (2.1% n/s).

The importance of ethnicity, language, and immigration differences for explaining the London advantage has been at the forefront of other studies examining the London effect (Blanden et al., 2015; Burgess, 2014; Greaves et al., 2014), which illustrate very large differences in the ethnic minority composition between London and the rest of England, and its link with higher attainment.

[17] The term 'ethnicity, language, and immigration' is used throughout the report to capture the combined total effect of these three characteristics.

[18] It is worth noting that the individual contribution each factor was non-significant in the full model, illustrating the benefit of combining conceptually similar/overlapping factors into domains, particularly when sample sizes are small.

Figure 3 Percentage of disadvantaged pupils from different ethnic groups in London and RoE (2015)

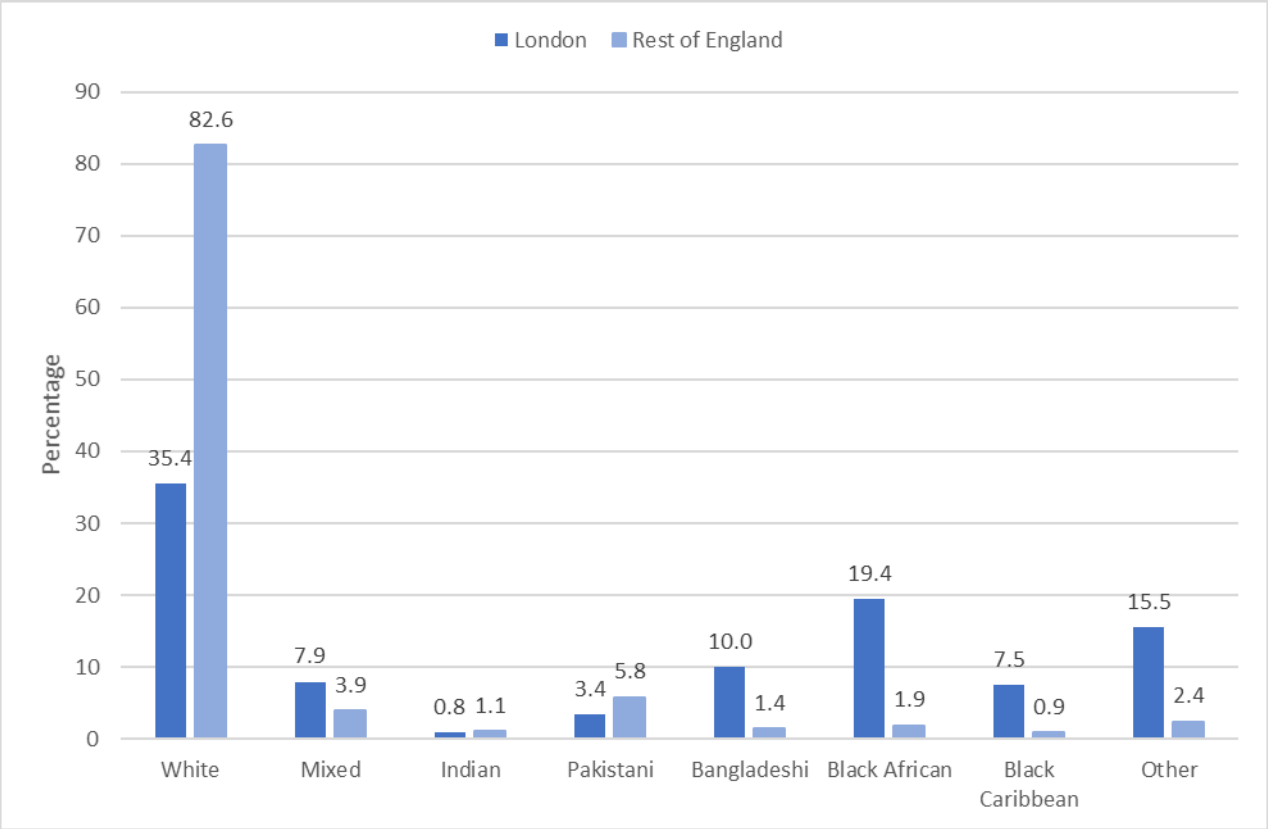
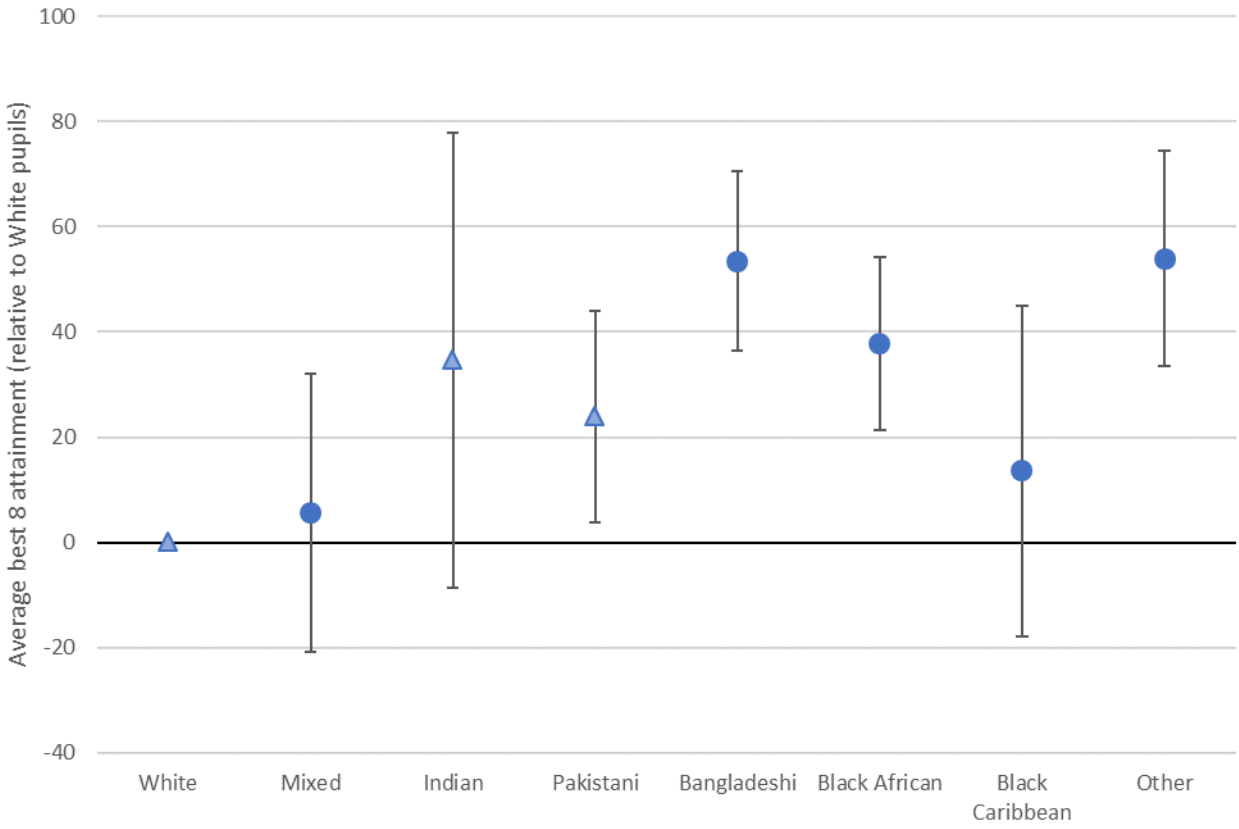


Figure 3 shows differences in proportion of disadvantaged pupils from different ethnic groups in London and in the rest of England. Most obvious is the significantly smaller proportion of disadvantaged White pupils attending schools in London (35.4% of all disadvantaged pupils in London compared to 82.6% in the rest of England), but also significantly more Bangladeshi, Black African, Black Caribbean, 'other' pupils (which includes East Asian and other White non-British) and those of Mixed-race lived-in London than in the rest of England. As figure 4 shows, some of these groups have significantly higher levels of key stage 4 attainment on average, than White pupils, in particularly, Bangladeshi (54 pts higher), Black African (38 pts) and Other pupils (also 54 pts) (figure 5), which then contributes to the higher overall average attainment in London.

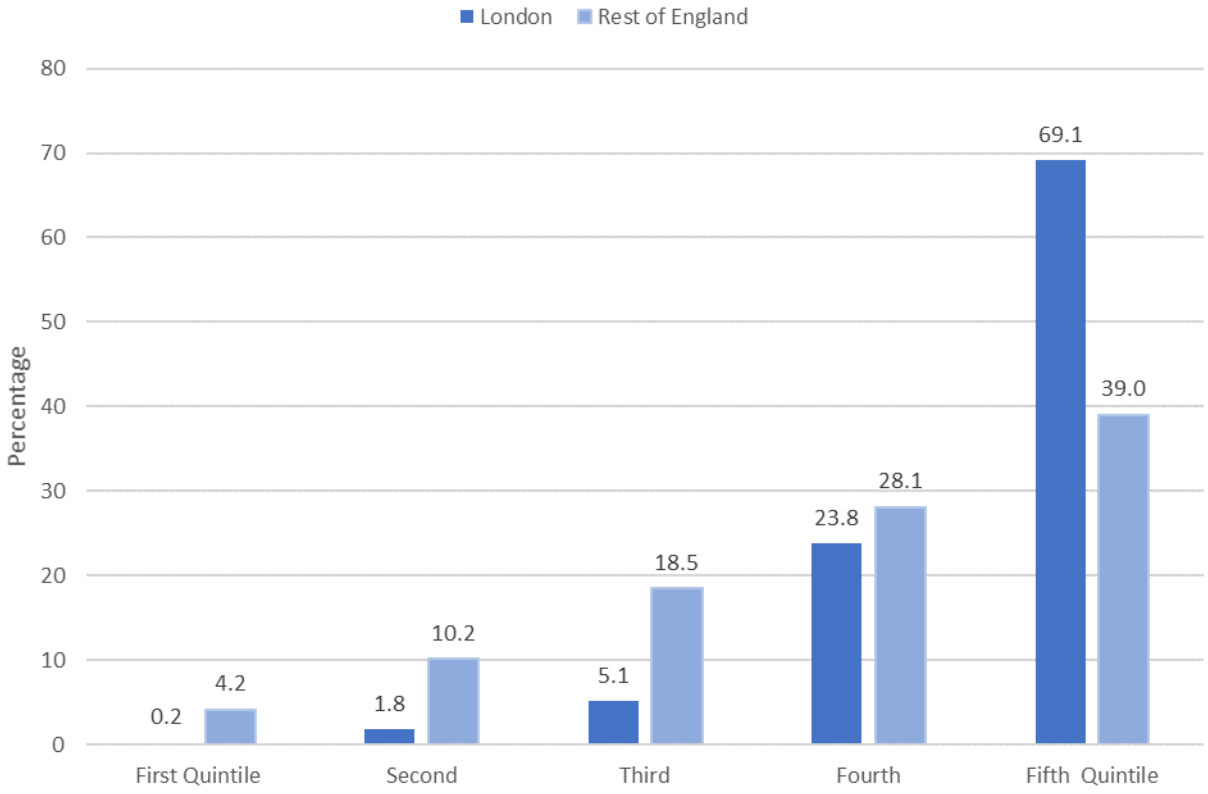
Figure 4 Average best 8 attainment by ethnic group (2015)



Note: Light blue triangles=groups more prevalent in the rest of England

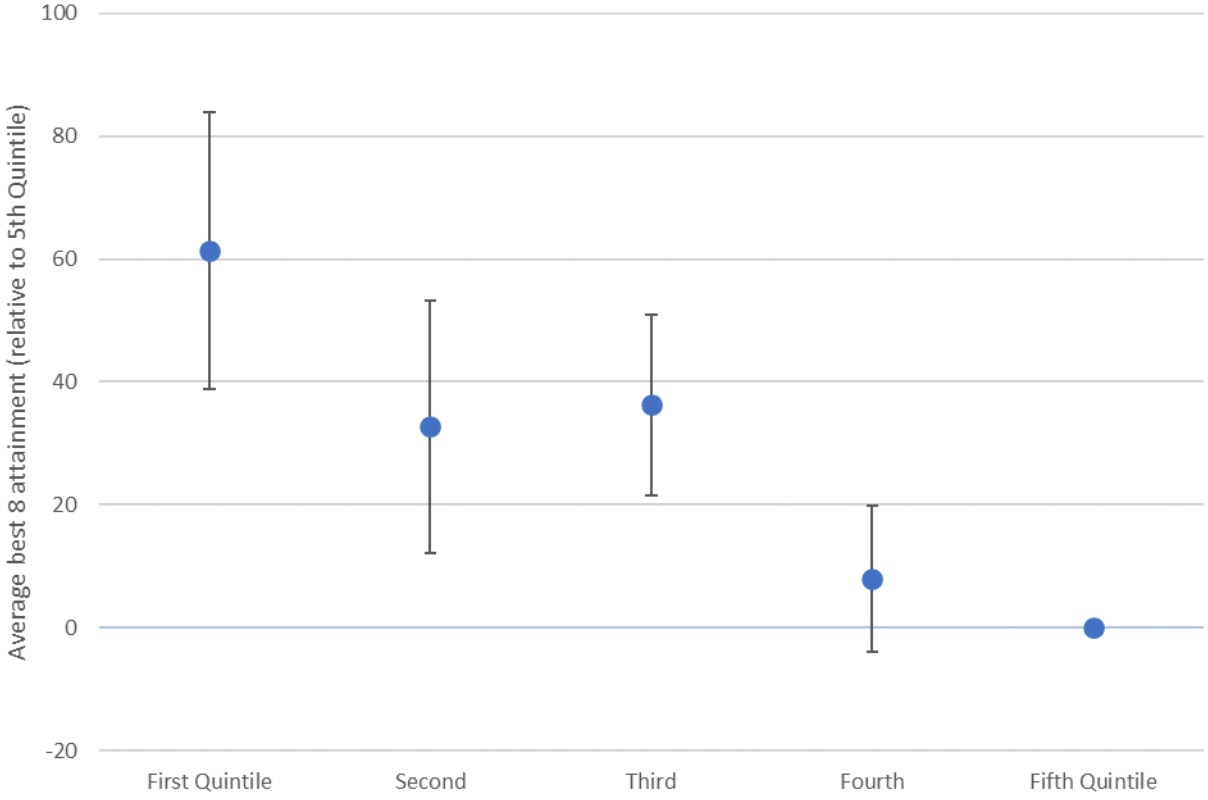
Collectively, differences in measured school factors between London schools and those in the rest of England made a moderate, although non-significant, contribution to the London advantage in attainment (15.8% n/s). This was predominantly driven by a significant contribution for differences in levels of unauthorized absences between London schools and those in the rest of England (**9.7%**). Schools outside London had higher levels of unauthorized absences on average, and higher absenteeism was associated with lower pupil attainment (Average sessions missed due to unauthorized absences in the rest of England: 1.7%; and London: 1.1%; association with pupil attainment: coefficient: **-10.3**).

Figure 5 Percentage of disadvantaged pupils in each IDACI quintile in London and RoE (2015)



In contrast to the above, the contribution relating to differences in area level deprivation (Income Deprivation Affecting Children Index (IDACI)) experienced by disadvantaged London pupils and those in the rest of England was negative (**-18.1%**). This tells us that differences in area deprivation and its association with pupil attainment actually favoured those in the rest of England. If the distribution of disadvantage in the rest of England was the same as it was in London, the London advantage would have been greater still (18.1% greater, or a GCSE grade higher). As figures 5 and 6 show, disadvantaged pupils living in London were almost twice as likely to be living in the most disadvantaged neighbourhoods where average levels of attainment was between five and ten GCSE grades lower than among those living in the three top quintiles.

Figure 6 Average best 8 attainment among disadvantaged pupils in each IDACI quintile (2015)



The contribution of structural and agency factors to the London advantage in attainment in 2015

Figure 7 The contribution of structural and agency factors to the London advantage in attainment (2015)

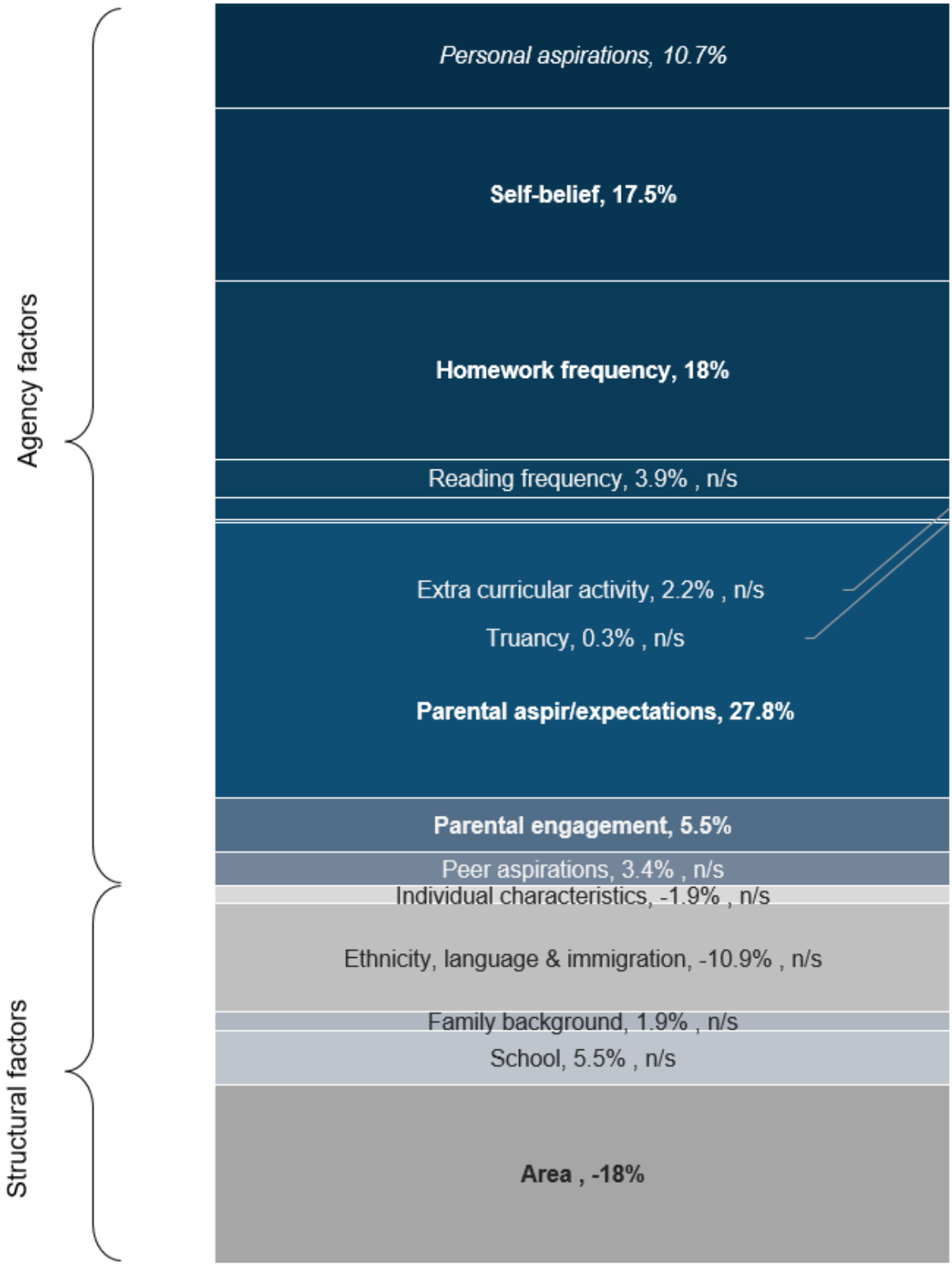


Table 2 The contribution of structural and agency factors to the London advantage in attainment (2015)

Structural factors: domain	**Factor**	**%**
Individual characteristics	Gender	0.1%
	SEN	-1.9%
Ethnicity, language, and immigration	Ethnicity	-3.5%
	Language spoken in home	-9.0%
	Place of birth	1.6%
Family background	Parental education	-1.6%
	Tenure	0.4%
	Family type	3.1%
School	School size	-0.3%
	Percent FSM	-1.3%
	Unauthorized absences	**7.1%**
Area	**Area deprivation**	**-18.0%**
Agency factors: domain	**Factor**	**%**
Personal aspirations	**Personal aspirations for Year 12**	**7.8%**
	University aspirations	2.9%
Self-belief	*Expect to get into university if applied*	*12.5%*
	Self-rated ability in school work	*5.0%*
Homework frequency	**Homework frequency**	**18.0%**
Reading frequency	Reading frequency	3.9%
Extracurricular activity	Uses sch sports facilities outs lessons	0.9%
	Attends school clubs or societies	1.3%
Truancy	Truancy	0.3%
Risky behaviours	Risky behaviours	0.0%
Parental aspirations /expectations	Parental aspirations Year 12	0.7%
	Parental expectations re university	**27.1%**
Parental engagement	**Attends parent-teacher evenings**	**5.5%**
Peer aspirations for Year 12	Peer aspirations for Year 12	3.4%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Figure 7 above shows the extent to which the London advantage in attainment in 2015 can be attributed to differences in both structural and agency factors, characteristic of the lives of disadvantaged pupils living in London and in the rest of England (RoE). Additional agency factors were those that accounted for differences in pupils' aspirations, self-belief, and behaviours, as well as those of their parents and peers. Table 2 unpacks these findings further, showing the contribution attributed to each of the individual factors that make up the domains.

With the addition of agency factors, we were able to explain 65.8% of the London advantage in attainment in 2015. As expected, the inclusion of agency factors had a very discernible impact on the contribution of structural factors already in the model. Foremost was the substantial decline in the contribution related to ethnicity, language, and immigration differences, which became negative and non-significant (-10.9% n/s). The previously large, although non-significant, contribution associated with differences in ethnic minority composition disappeared (-3.5% n/s) and the contribution of language differences became negative (-9.0% n/s), remaining non-significant.

Their decline was a direct consequence of including factors that explained the ethnicity, language, and immigration difference in attainment (although it's important to remember that association does not imply causation, meaning these factors are not necessarily the cause of higher attainment among ethnic minority pupils, more of which will be said later).

As we already noted, larger numbers of Bangladeshi, Black African and 'Other' pupils lived in London compared to the rest of England, and that these three groups, in particular, had higher levels of attainment. As figures 8 through to 12 show below, these three ethnic groups were also more likely to have those factors which were most associated with the London advantage in attainment, as we show further below.

Figure 8 Year 12 aspirations by ethnic group (2015)

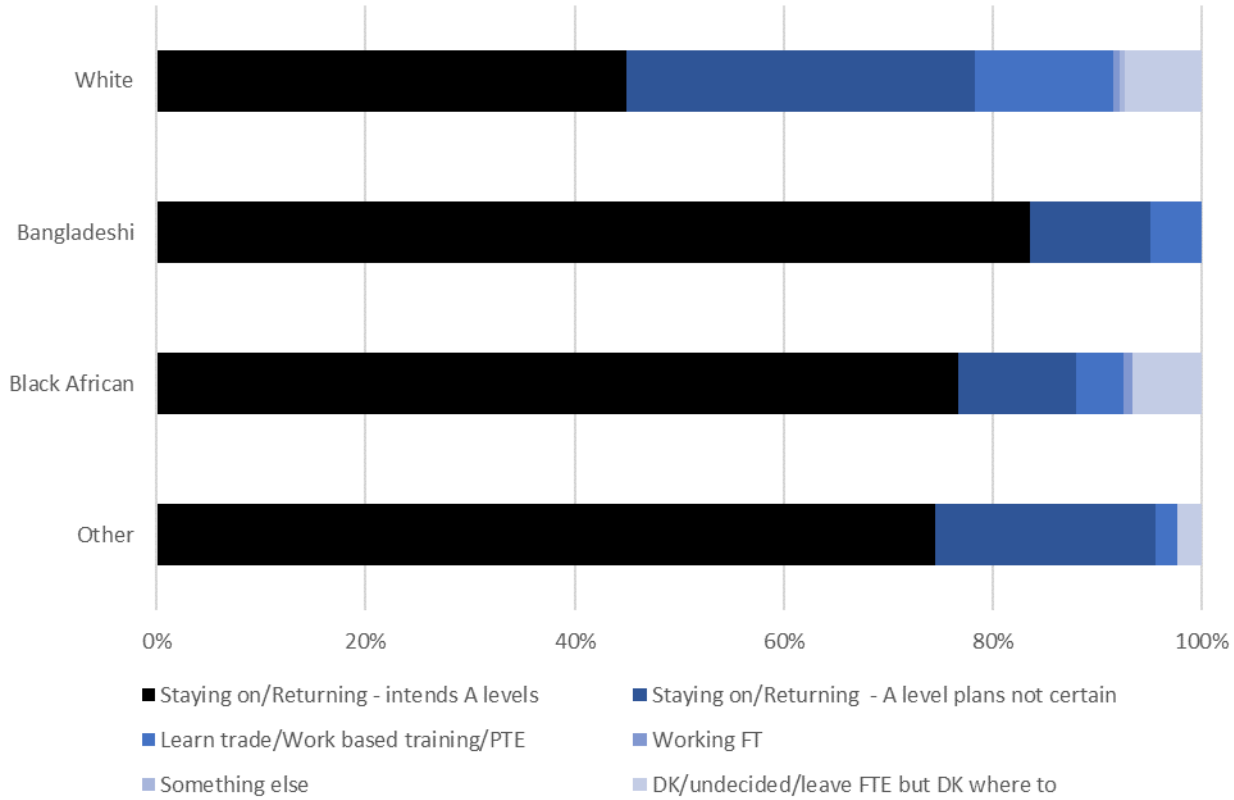


Figure 9 Expectations of getting into university if applied by ethnic group (2015)

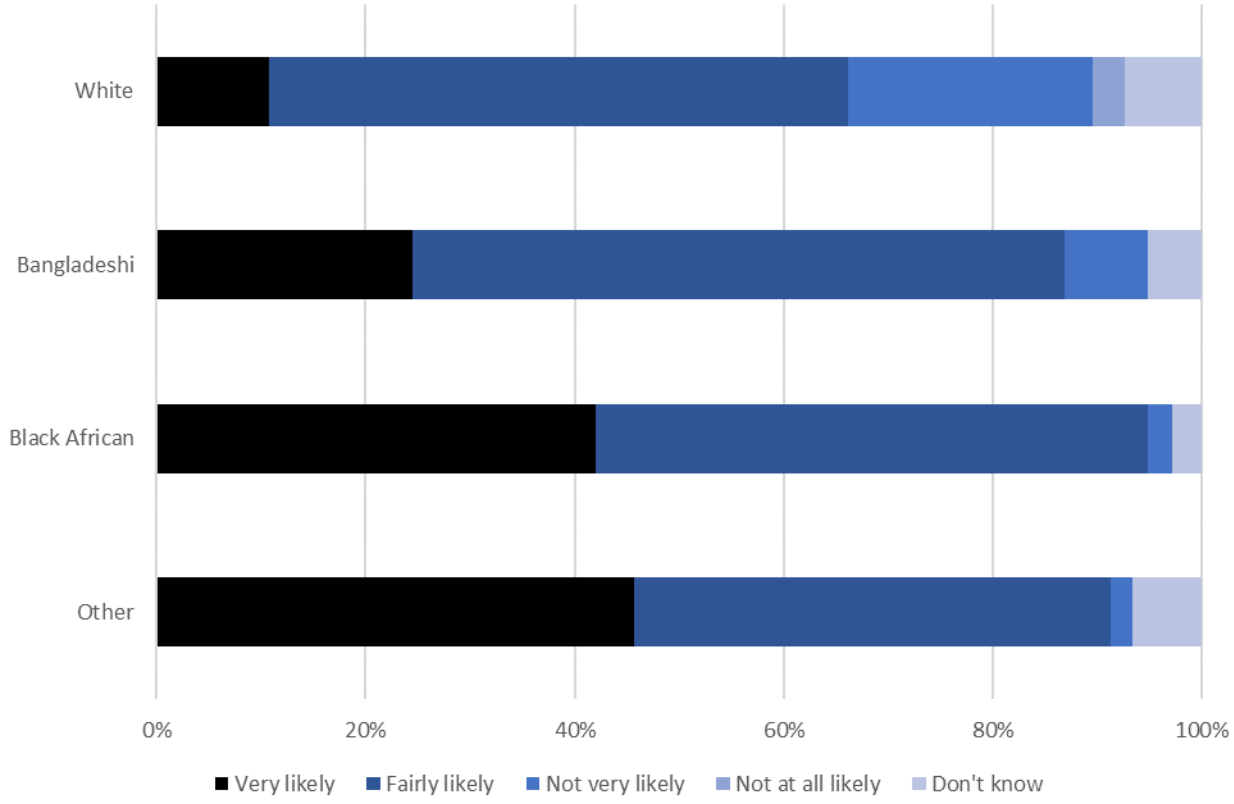


Figure 10 Amount of homework done in a week by each ethnic group (2015)

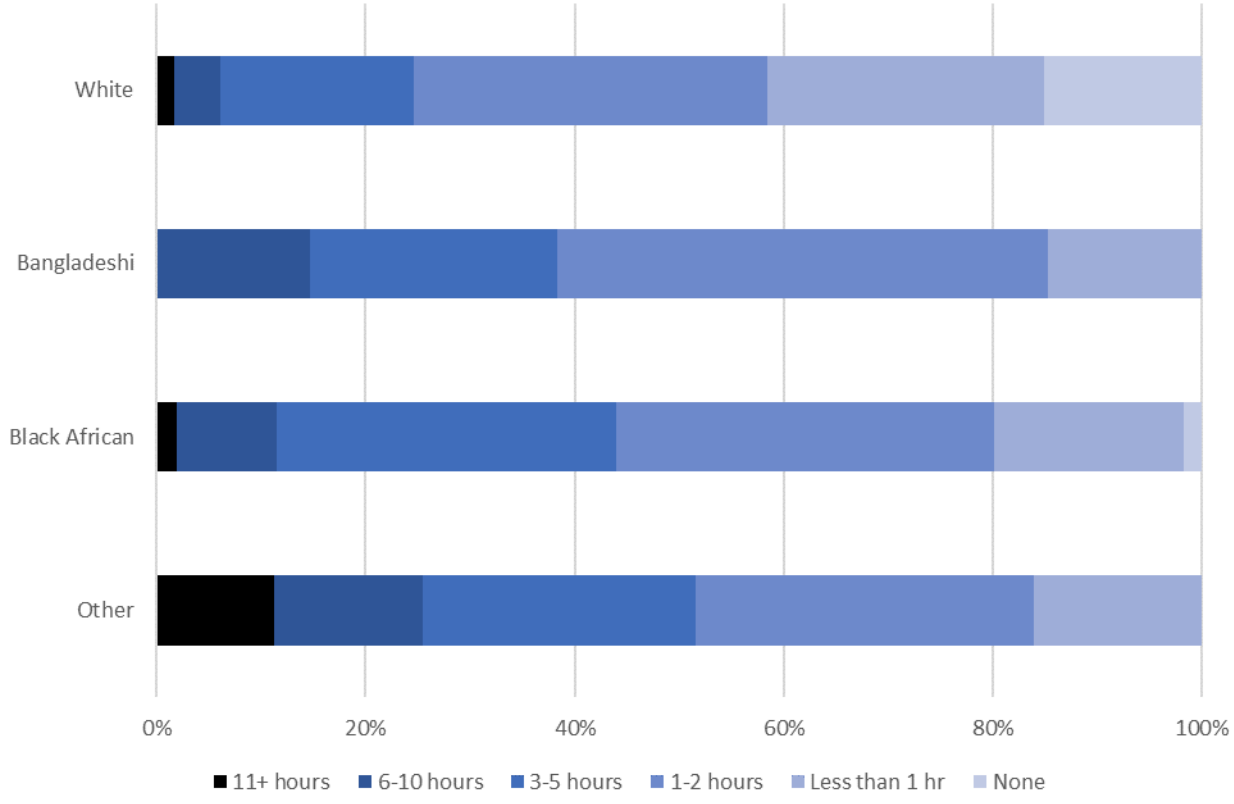


Figure 11 Parental university expectations by ethnic group (2015)

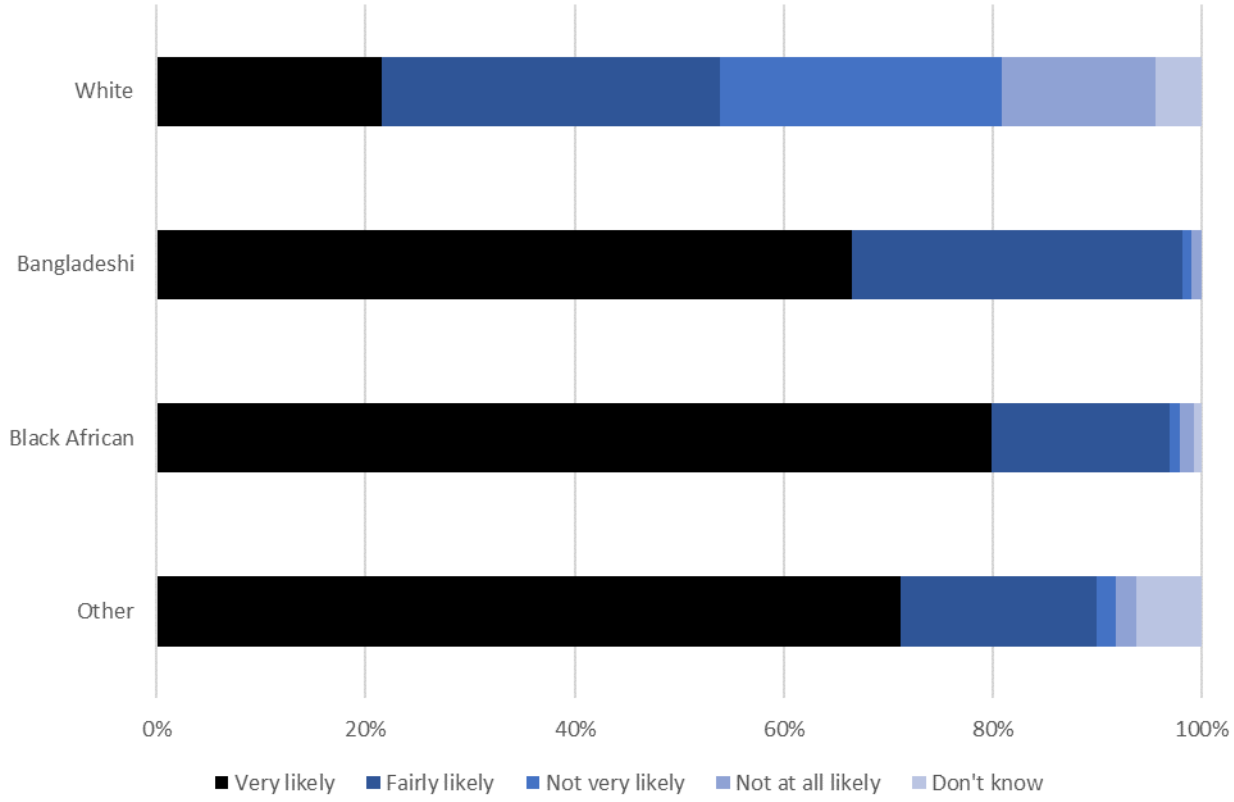
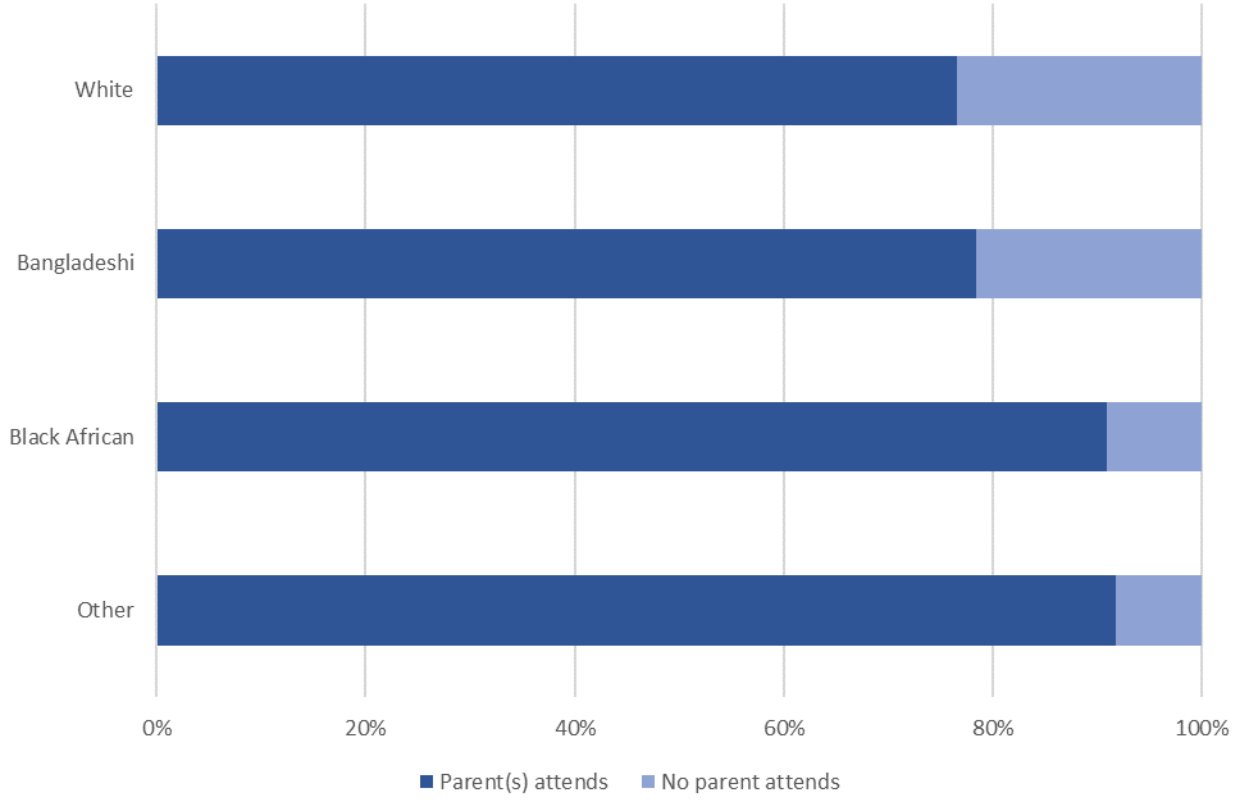


Figure 12 Parent attendance at parent-teacher evenings by ethnic group (2015)



Bangladeshi, Black African and 'other'[19] pupils were among those most likely to intend to study A levels (84%, 77%, and 74% respectively, compared to 45% of White pupils), expect to get into university if they applied (87%, 95%, and 91% respectively, thought they were very or fairly likely to get in compared to 66% White pupils), do more homework (85%, 80%, and 84% respectively, did at least one hour, 38%, 44% and 52% respectively did at least 3 hours, compared to 58% and 25%, for White pupils), have parents who expected them to go to university (98%, 97%, and 90% respectively, had parents who felt it was very or fairly likely they would go to university compared to 54% for White pupils). The parents of Black African and 'Other' parents were also more likely to attend parent teacher evenings than parents of White pupils (91% and 92% respectively, compared to 77%). Interestingly the parents of Bangladeshi pupils were only *as* likely to attend (78%).

There was also a substantial decline in the contribution of measured school differences after adjusting for agency factors (5.5% n/s), although the underlying contribution of unauthorized absences (**7.1%**) remained statistically significant. The contribution of area deprivation remained unchanged (**-18.0%**), however, which suggests the effect of living in a disadvantaged area was *not* mediated through the agency factors now included in our model.

Differences in levels of parental aspirations and/or expectations made the largest contribution to the London advantage in attainment (**27.8%**), followed by differences in homework frequency (**18.0%**), self-belief (**17.5%**) and a small yet significant contribution related to differences in levels of parent educational engagement (**5.5%**). There was also a small to moderate contribution, which was borderline significant, related to differences in personal aspirations and/or expectations (*10.7%* borderline significant).

Differences in university expectations was driving the parental aspirations/expectations contribution overall (**27.1%** compared to 0.7% n/s for parental aspirations for Year 12). In the next section we compare findings with those for the earlier born cohort (LSYPE I), however it's worth noting here that the contribution of parental aspirations and/or expectations between parental aspirations for Year 12 (**14.4%**) and university expectations (*16.2%* borderline significant) in 2006, was more evenly split.

[19] This group consists primarily of young people from East Asian and White non-British backgrounds.

Figure 13 Parental Year 12 aspirations in London and RoE (2006 and 2015)

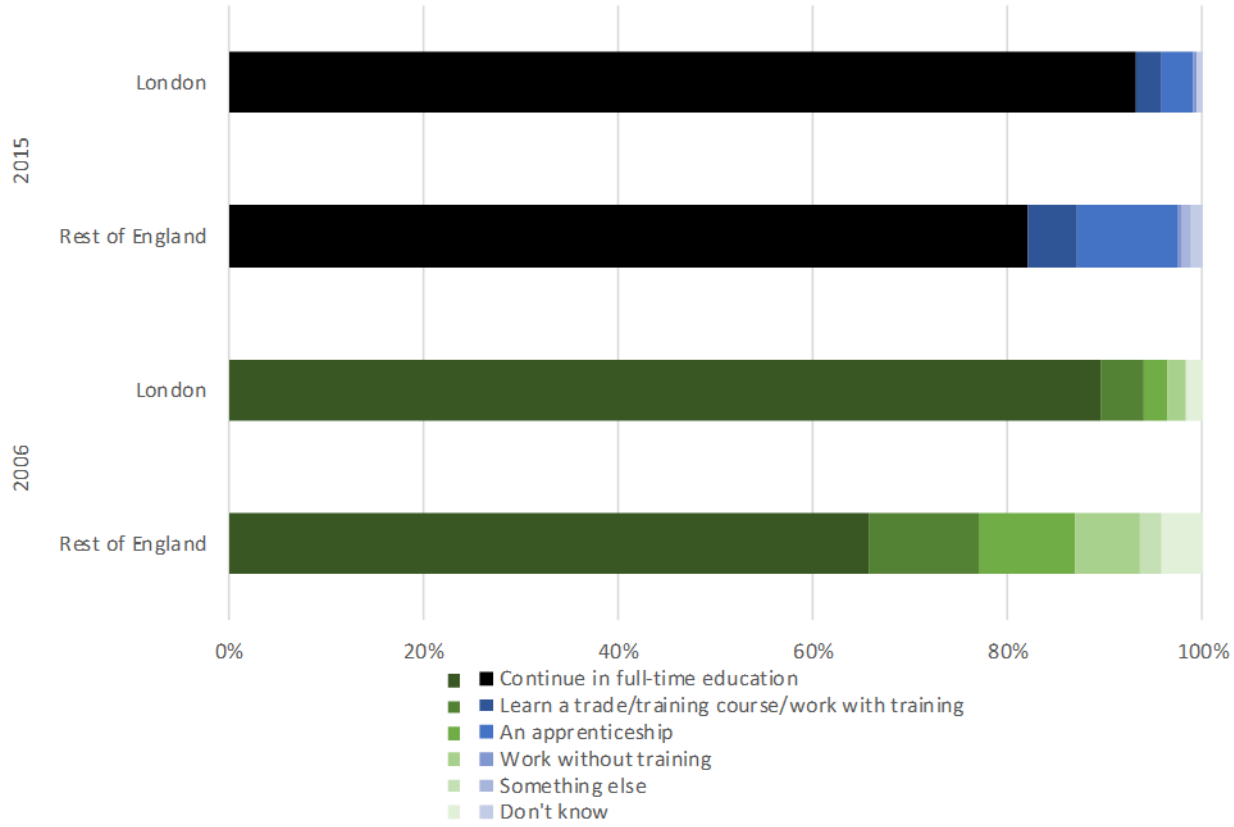
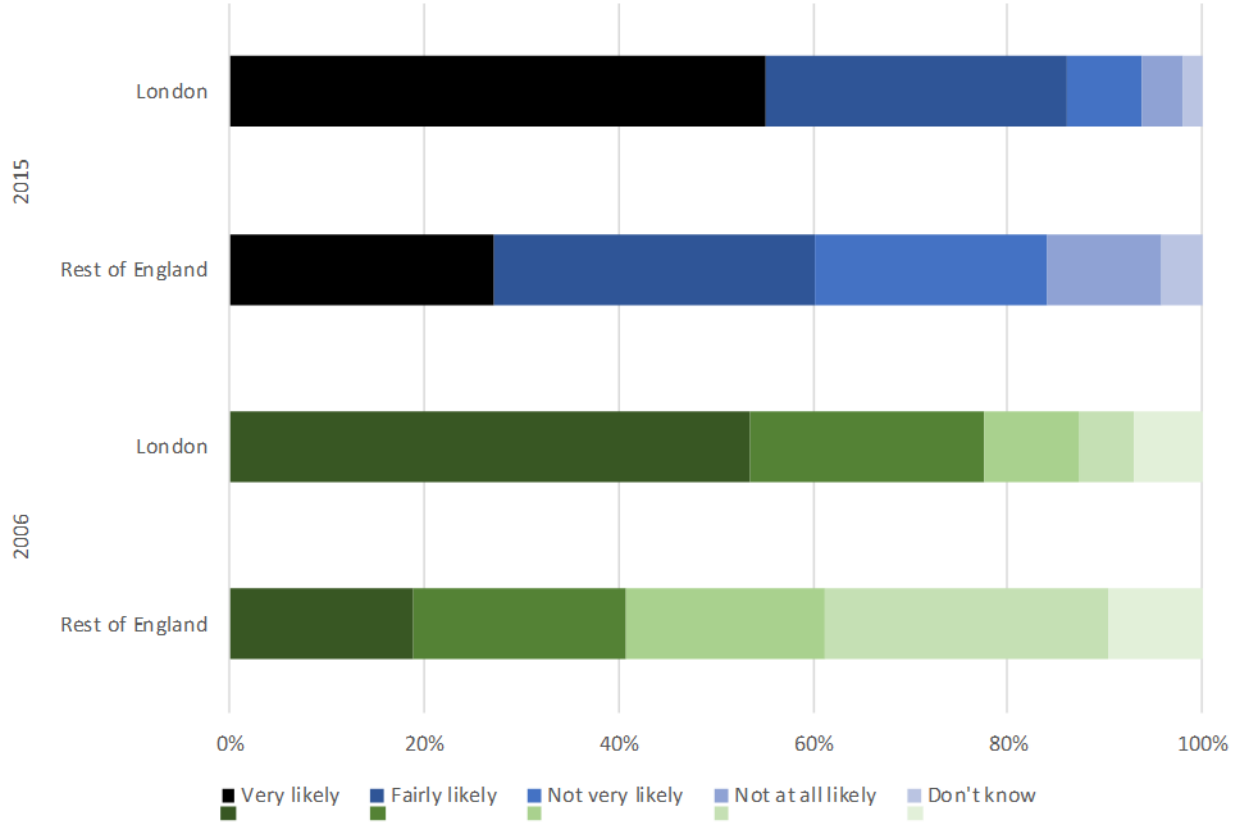


Figure 14 Parental university expectations in London and RoE (2006 and 2015)



As figure 13 shows, most disadvantaged London parents aspired for their child to remain in full time education in Year 12, both in 2015 and in 2006, whereas the proportion of disadvantaged parents with similar aspirations in the rest of England significantly increased over time. However, we suspect this was more to do with raising of the participation age to 18 (RPA), as opposed to a more meaningful change in the aspirations of parents in the rest of England. There was a smaller reduction in the relative difference in their university expectations over time, which is considered meaningful, and shows important improvements in the expectations of parents living in the rest of England. As figure 14 illustrates, in 2006 almost twice as many London parents reported that it was very or fairly likely that their child would attend university than those living in the rest of England (77.5% compared to 40.7%). By 2015 this had fallen to 1.4 times more likely (86.1% compared to 60.1%).

Differences in the pupils' own aspirations and/or expectations made a much smaller contribution to the London advantage in attainment (*10.7%* borderline significant). In this instance, differences in their aspirations for Year 12 was driving the effect overall (**7.8%**), with a negligible, non-significant contribution associated with differences in their expectations for applying to university (2.9% n/s). We suspect the reasons for this difference between pupils and parents are to do with measurement. Unlike parental aspirations, personal aspirations for Year 12 also recorded their A level intentions. Differences in the aspirations of London and 'rest of England' pupils was much larger on this count than on staying in FTE per-sea (73.8% London pupils planned to do A levels compared to 48% of pupils in the rest of England, whereas the respective figures for simply staying in FTE was 88.8% compared to 81%).

In addition, the model also includes a measure of pupils' expectation of getting into university should they apply (as part of the 'self-belief' domain). Differences in the expectation of applying to university and the expectation of getting into university between London and 'rest of England' pupils were actually very similar: 81% of London pupils thought it very or fairly likely that they would apply to university compared to 58% of pupils living in the rest of England, and 78% of London pupils thought it very or fairly likely that they would get in compared to 56% of 'rest of England' pupils. However, there is a clear and obvious overlap between the two - pupils who don't expect to get into university are also less likely to apply.

After mutual adjustment, it was the higher expectations of getting into university among London pupils that was more important in explaining the London advantage (*12.5%* borderline significant, compared to 2.9% n/s, for differences in intentions to apply). This appears to suggest that higher levels of confidence among disadvantaged pupils living in London was contributing to both higher levels of aspirations and attainment at KS4. Unfortunately, we cannot discern the causal pathway from our model alone. An alternative interpretation is that their confidence of being accepted into university is a

response to their current level of achievement, and that this, more so than their aspirations and expectations predicts their higher levels of attainment. This is something we attempt to answer in the next chapter when we examine the London advantage in school progress by adjusting for differences in pupils' prior attainment. Differences in how pupils rated their school work made a much smaller, borderline significant, contribution to the London advantage (*5%* - borderline significant).

Figure 15 Amount of homework done in a week in London and RoE (2015)

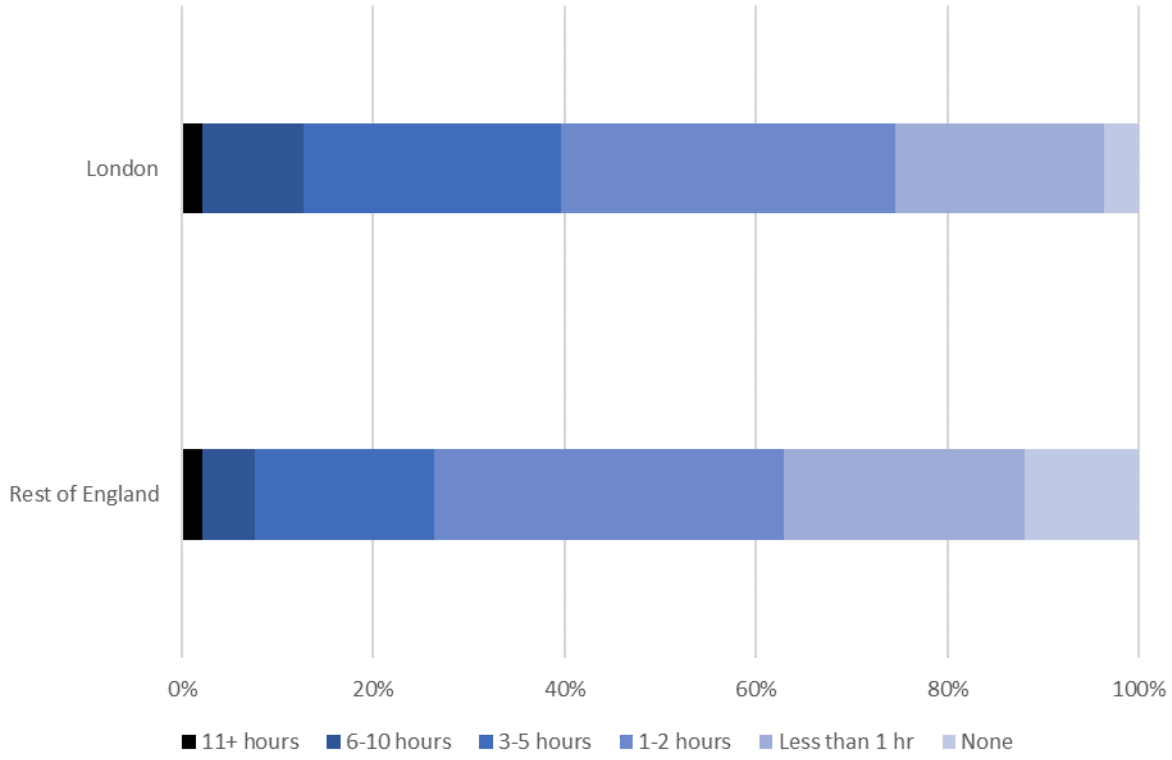
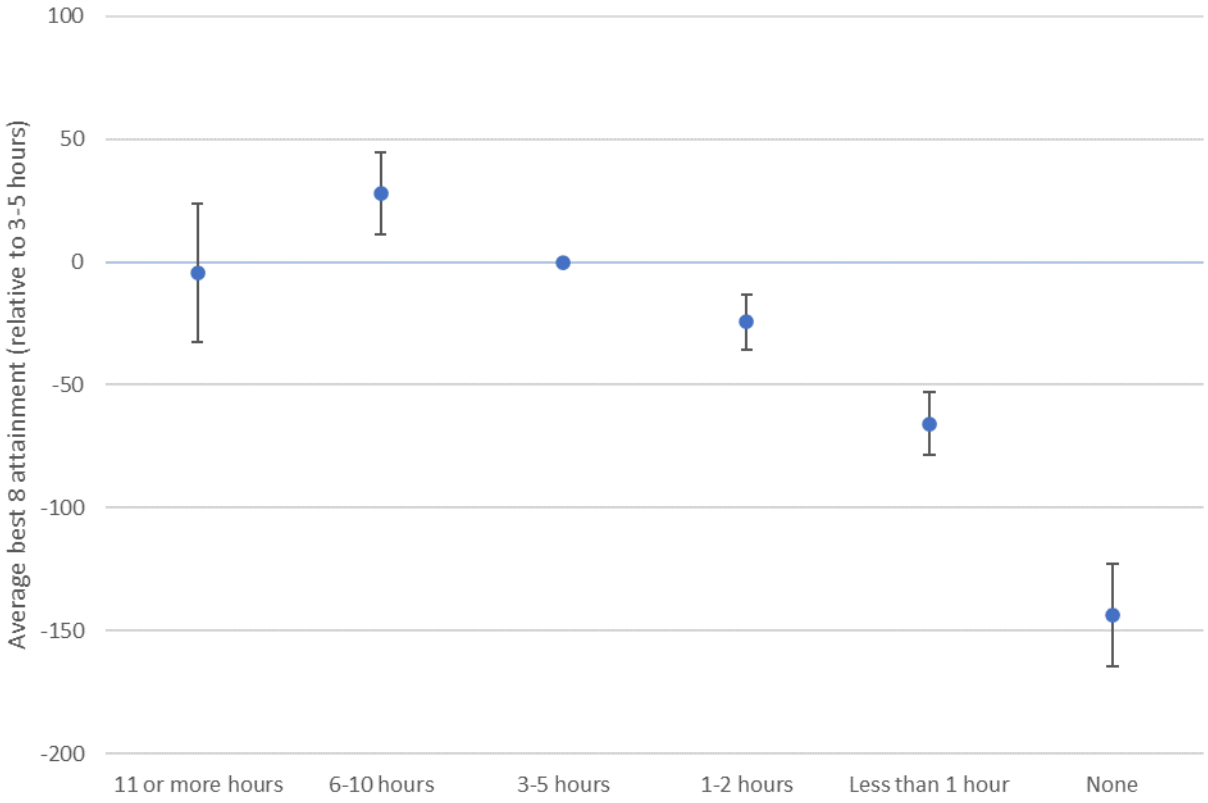


Figure 16 Average Best 8 attainment by frequency of homework (2015)



Differences in the amount of homework pupils were doing was the second most important factor for explaining the London advantage in attainment (**18.0%**). As figures 15 and 16 show, disadvantaged pupils living in London spent more hours doing homework than disadvantaged pupils in the rest of England, and there was a strong link between hours spent doing homework and attainment: 40% of London pupils were doing at least 3 hours of homework a week, compared to 26% of pupils living in the rest of England. Average attainment among pupils doing 3-5 hours per week, was 4 GCSE grades higher than those doing 1-2 hours per week, 11 grades higher than those doing less than one hour of homework a week, and as much as 24 grades higher than those doing none.

Finally, differences in attendance at parent-teacher evenings between disadvantaged parents in London and the rest of England made a small, although statistically significant, contribution to the London advantage (**5.5%**). Actual differences in attendance was very small (91% of London parents had attended, compared to 88% of parents in the rest of England), however its association with attainment was especially large (the attainment of disadvantaged pupils whose parents did not attend parent-teacher evenings was almost 8 GCSE grades lower on average compared to those whose parents did attend).

The contribution of structural factors to the London advantage in attainment in 2006

Below are the results of a decomposition of the London advantage in best 8 GCSE points score for 2006. As we have shown above, differences in the attainment between disadvantaged pupils living in London and the rest of England can be linked to differences in the distribution of factors known to predict attainment across place. By comparing our results across time, we can also link consistencies or changes in our findings with continuity or change in the distribution of these factors across time.

This is especially useful because our data is observational[20] and cannot therefore tell us whether a relationship is causal or not. By linking changes in the contribution of factors across time with changes in their relative distribution across place, we get a little closer to identifying the most likely direction of association. Furthermore, findings that we are able to replicate using an identical, yet independent source of data collected at two different points of time, can also be considered more robust.

The first important point of note, in a comparison of the results for 2006, was the decline in the London advantage in best 8 points score over time: From 56.9 points in 2006 (or 9.5 GCSE grades) to 46.7 points (or 7.8 GCSE grades) in 2015, a decline of 10.2 points[21]. The decline in the London advantage in best 8 points score over time was also reported by Blanden et al. (2015) using data from the national pupil database, which records the GCSE achievement of all pupils in England and Wales, however they did not comment on its decline. This is something we consider as part of a comparison of a decomposition of the London advantage in attainment using two independent yet almost identical sources of data collected at two different points in time. By linking any change in the contributions of our factors with changes in their relative distribution over time helps us better understand the potential drivers of the London advantage.

[20] Unlike experimental data, where causality of factors is identified through their direct manipulation.
[21] As we note at the start of the chapter, these are a little larger than the differences estimated for our multivariate decomposition models, which exclude individuals with missing information on one or more measures.

Table 3 The contribution of structural factors to the London advantage in attainment (2006)

Structural factors: domain		**Factor**	**%**
Individual characteristics	-9.2%	Gender	1.6%
		SEN	-10.8%
Ethnicity, language, and immigration	**46.1%**	*Ethnicity*	*34.7%*
		Language spoken in home	4.0%
		Place of birth	7.4%
Family background	**-15.3%**	**Parental education**	**-13.3%**
		Tenure	-2.4%
		Family type	0.3%
School	4.3%	School size	-2.0%
		Percent FSM	-0.9%
		Unauthorized absences	*7.2%*
Area	1.6%	Area deprivation	1.5%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Table 3 above presents the results of a decomposition of the London advantage in attainment in 2006 using structural factors alone. The unique contributions of each domain are presented, along with the individual contributions of their constituent factors.

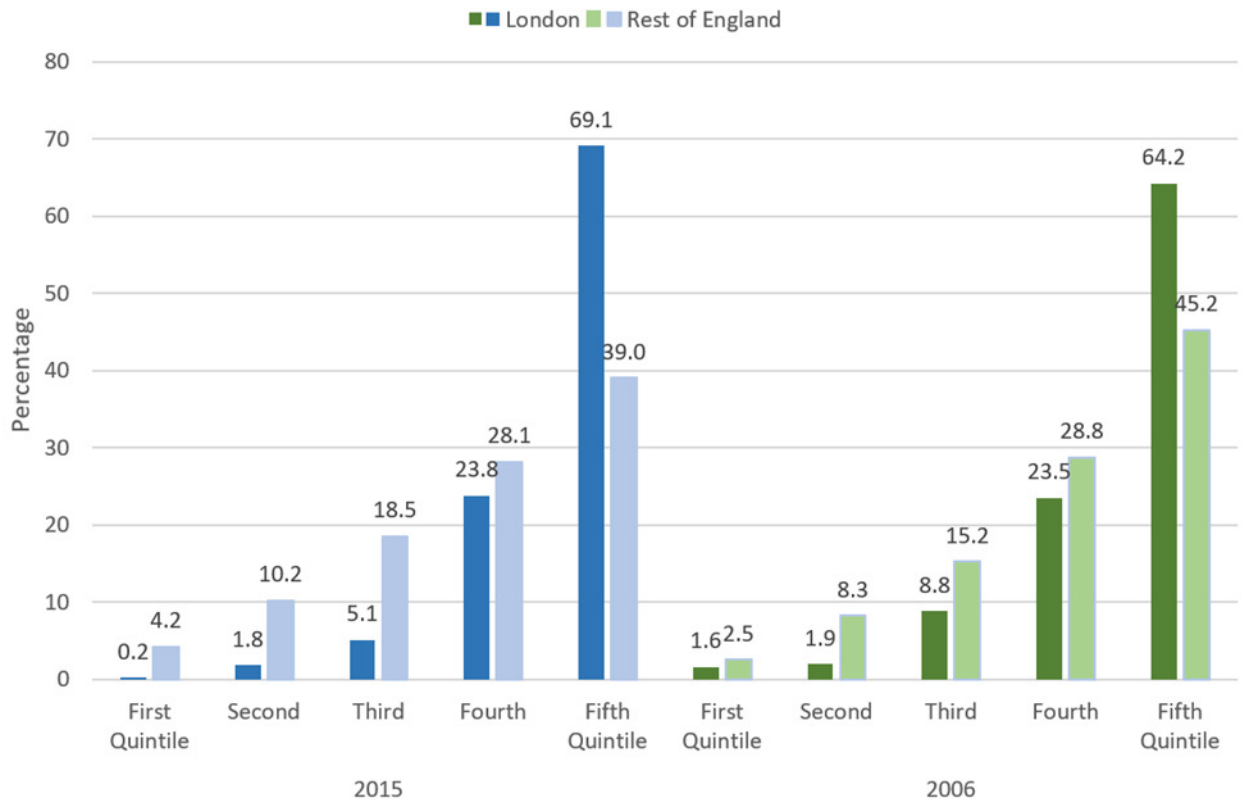
Overall, differences in the distribution of structural factors between London and the rest of England explained a little less of the London advantage in attainment in 2006 (27.5% compared to 32.8% in 2015). Similar to our 2015 findings, the combined ethnicity, language, and immigration differences accounted for the largest part of the London advantage (**46.1%**), in fact more so than in 2006. Again this was predominantly driven by large differences in the ethnic minority composition of London compared to the rest of England (*34.7%* borderline significant), with a small and non-significant contribution for differences in pupils' place of birth (7.4% n/s), and little contribution for differences in the languages spoken in the home (4.0% n/s).

Differences in the measured characteristics of schools made a much smaller, although similarly non-significant, contribution to the London advantage in 2006 to 2015 (4.3% n/s). Underlying this, was a slightly smaller contribution relating to differences in levels of unauthorized absences, which was borderline significant (*7.2%* borderline significant). Schools in the rest of England had slightly higher levels of unauthorized absences on average, but had also seen less improvement over time relative to London, leading to a slightly greater contribution to the London advantage in 2015. Average sessions missed due to unauthorized absences had improved in the rest of England between 2006 and 2015, from 1.9% to 1.7%, however improvement in London schools was from 1.6% to 1.1%.

There were differences in the contribution of area deprivation and family background over time. Unlike 2015, differences in area level deprivation made no contribution to the London advantage in 2006 (1.6% n/s). Instead, differences in the family backgrounds of disadvantaged pupils living inside and outside London made a moderate, negative, contribution (**-15.3%**), driven by differences in the education of London parents and those in the rest of England (**-13.3%**).

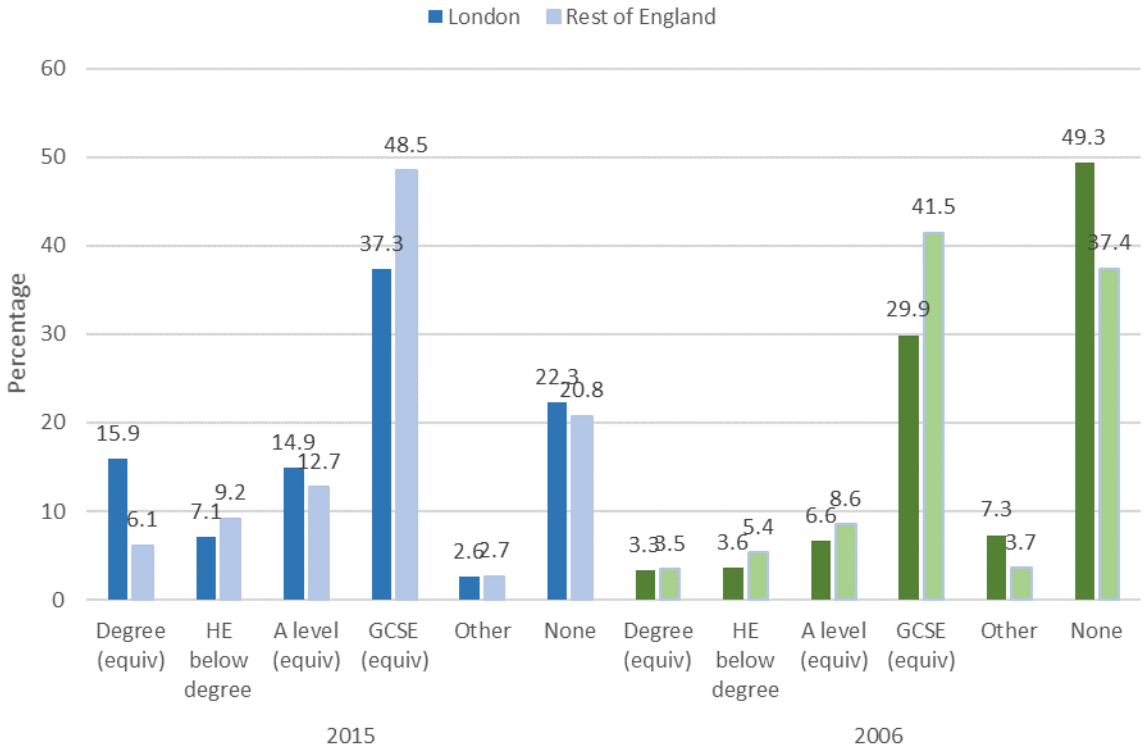
Figures 17 and 18 illustrate the reasons for these changes. In 2006, disadvantaged London pupils were 1.4 times more likely than disadvantaged pupils in the rest of England to be living in the most disadvantaged neighbourhoods. By 2015 this figure had increased to 1.8 times. (figure 17).

Figure 17 Percentage of disadvantaged pupils in each IDACI quintile in London and RoE (2006 and 2015)



In contrast, levels of parental education among disadvantaged London parents improved relative to disadvantaged parents living in the rest of England. In 2006, London parents were 1.3 times more likely to have no qualifications and slightly less likely to have degree level qualification. By 2015, whilst London parents were still *slightly* more likely to have no qualifications, they were also 2.6 times more likely to have degree level qualifications (figure 18). Furthermore, the association between parental education and pupil attainment declined a little over time.

Figure 18 Levels of parental education in London and RoE (2006 and 2015)



Overall the relative position of disadvantaged pupils living in London appears to have improved over time in terms of their parents' levels of education, but also worsened in terms of area deprivation, with the latter seemingly counteracting the benefits of the former.

The contribution of structural and agency factors to the London advantage in attainment in 2006

Table 4 below above shows the extent to which the London advantage in attainment in 2006 was attributed to differences in both structural and agency factors, characteristic of the lives of disadvantaged pupils living in London and in the rest of England (RoE).

Table 4 The contribution of structural and agency factors to the London advantage in attainment (2006)

Structural factors: domain	**%**	**Factor**	**%**
Individual characteristics	-7.3%	Gender	0.4%
		SEN	-7.7%
Ethnicity, language, and immigration	-15.3%	Ethnicity	-2.2%
		Language spoken in home	-9.7%
		Place of birth	-3.4%
Family background	**-10.9%**	**Parental education**	**-7.0%**
		Tenure	-1.3%
		Family type	-2.6%
School	6.7%	School size	-0.4%
		Percent FSM	1.1%
		Unauthorized absences	*6.0%*
Area	-1.6%	Area deprivation	1.6%
Agency factors: domain		**Factor**	**%**
Personal aspirations	9.6%	Personal aspirations Year 12	8.2%
		University aspirations	1.3%
Self-belief	**25.1%**	**Expect to get into uni if applied**	**24.0%**
		Self-rated ability in school work	1.0%
Homework frequency	**15.0%**	**Homework frequency**	**15.0%**
Reading frequency	2.4%	Reading frequency	2.4%
Extracurricular activity	*6.1%*	Uses school sports facilities outside lessons	4.1%
		Attends school clubs or societies	2.0%
Truancy	**6.7%**	**Truancy**	**6.7%**
Risky behaviours	**10.0%**	**Risky behaviours**	**10.0%**
Parental aspirations /expectations	**30.6%**	**Parental aspirations Year 12**	**14.4%**
		Parental expectations for university	*16.2%*
Parental engagement	5.2%	Attends parent-teacher evenings	5.2%
Peer aspirations for Year 12	*8.8%*	*Peer aspirations for Year 12*	*8.8%*

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

With the addition of agency factors, we were able to explain 91.1**%** of the London advantage attainment, which is substantially more than we could for 2015 (65.8%).

Changes to the contribution of structural factors after adjustment were otherwise similar to those seen for 2015. The contribution relating to ethnicity, language, and immigration differences was now negative and non-significant (-15.3% n/s), which was driven by the disappearance of the large contribution for ethnic minority composition (-2.2% n/s) and appearance of a negative, although non-significant contribution for language (-9.7% n/s). For 2006, there was also a small negative non-significant contribution associated with place of birth (-3.4% n/s). As before, these changes were the direct consequence of the inclusion of factors that explained ethnicity, language, and immigration differences in attainment.

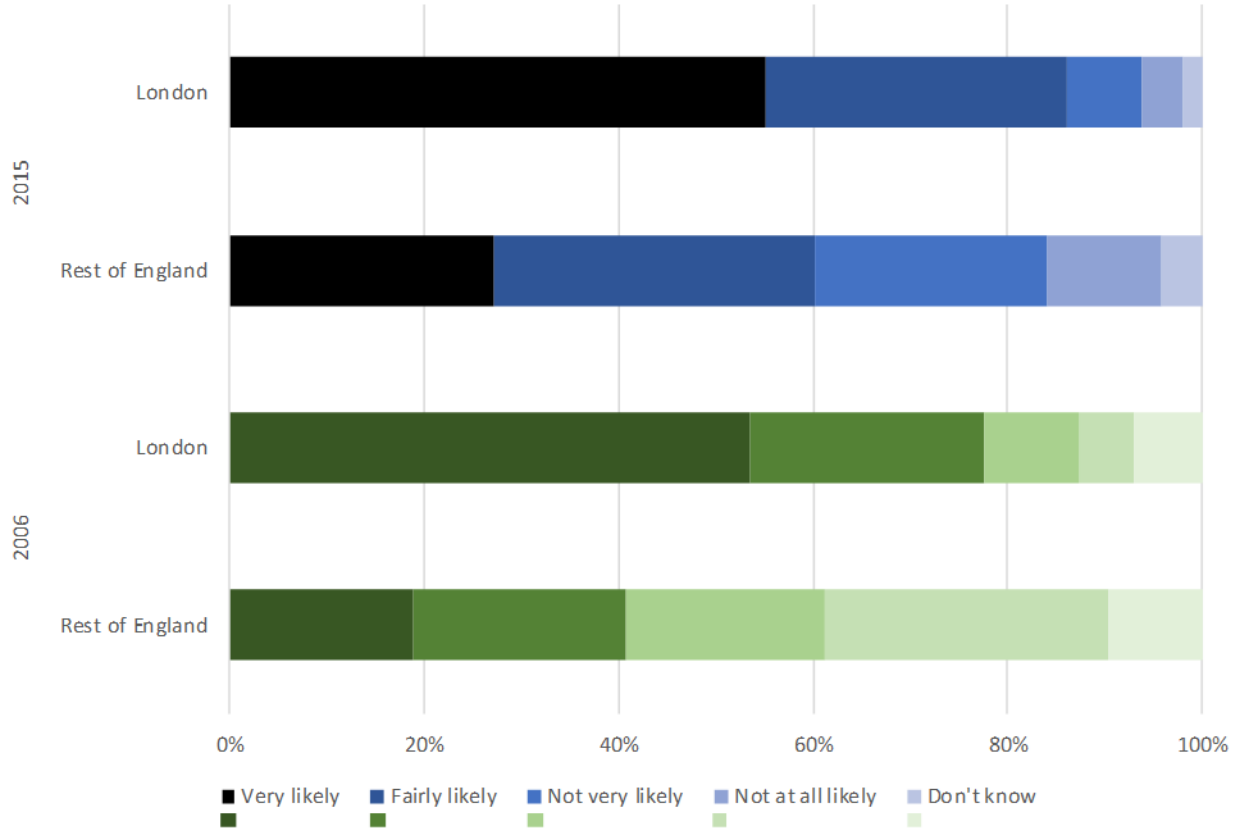
Due to small and insignificant fluctuations in the contributions of the measured characteristics of schools, the overall effect increases slightly after adjustment, but remains non-significant (6.7% n/s). There was a small decline in the underlying contribution related to unauthorized absences, which remained borderline significant (*6%* borderline significant).

However, whilst the negative contribution relating to differences in area deprivation in 2015 had remained stable after adjusting for agency factors, the contribution of differences in parental education in 2006 halved **(-7%)**. This suggests, unlike the contribution of area deprivation, the contribution of differences in parental education *was* partially mediated through the agency factors now in our model.

We see strong similarities in the contribution of agency factors in 2006 to those for 2015, however we also see some significant differences. It is quite possible that some of these differences may have contributed to the decline in the London advantage seen over time, or portrayed more positively, the relative improvement in attainment among disadvantaged pupils in the rest of England.

Similar to 2015, differences in parental aspirations/expectations made the largest contribution to the London advantage overall (**30.6%**). However, as we noted previously, unlike what we saw for 2015, this was attributed to both differences in parents' university expectations (*16.2%* borderline significant) *and* their aspirations for Year 12 (**14.4%)**. The relative difference in parental aspirations for Year 12 virtually disappeared by 2015, which we attributed to Raising the Participation Age (RPA).

Figure 19 Parental university expectation in London and RoE (2006 and 2015)

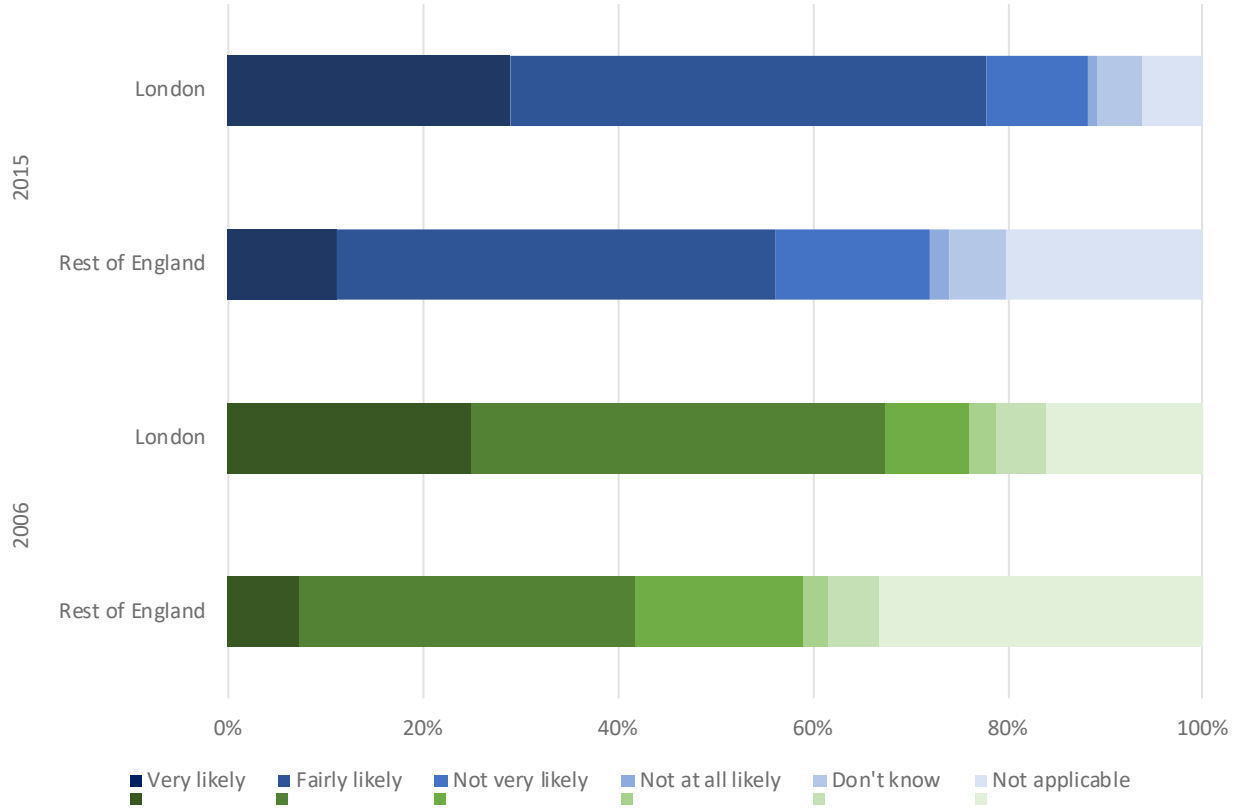


There was also a decline in the relative difference in parents' university expectations over time, as illustrated in figure 19 above. In 2006, disadvantaged London parents were 1.9 times more likely to think it was very, or fairly likely, that their child would attend university than disadvantaged parents living in the rest of England. In 2015 this figure fell to 1.4 times. However, because of an obvious overlap between differences in parental aspirations for Year 12 and their university expectations, which was no longer relevant in 2015 when the relative difference in Year 12 aspirations had almost disappeared, this had the effect of artificially inflating the individual contribution of university expectations. When we examined the contribution of university expectations separately, we find they were more important for understanding the London advantage in 2006 as we might expect (**75.7%** compared to **61.2%** in 2015), illustrating this point.

Differences in the amount of homework pupils were doing made a similar contribution to the London advantage in 2006 (**15.0%**) to 2015, as did differences in their personal aspirations for Year 12, although this was not statistically significant in 2006 (8.2 n/s).

Similarities aside, we also found some notable differences. Differences in the levels of self-belief of disadvantaged London and 'rest of England' pupils was more important for understanding the London advantage in 2006 (**25.1%** c.f. **17.5%**), which was attributable to a larger contribution for pupils' expectations of getting into university should they apply (**24%** c.f. to *12.5%*, borderline significant).

Figure 20 Disadvantaged pupils' expectations of getting into university were they to apply in London and RoE (2006 and 2015)



As illustrated in figure 20, in 2006, disadvantaged London pupils were 1.6 times more likely to say they were 'very or fairly likely' to get into university should they apply, and 3.4 times more likely to say they were 'very likely' to get in. Whereas in 2015 the respective figures were 1.4 times and 2.6 times more likely, which indicates a relative improvement in the confidence of disadvantaged pupils living in the rest of England. It is impossible to infer whether the relationship was causal, however it might suggest the evident decline in the London advantage over time was partially attributable to increasing levels of confidence among pupils in the rest of England.

Another significant difference in our findings for 2006 was the decline in levels of truancy and risky behaviours over time, both overall for all pupils, but especially among those in the rest of England. In 2006, differences in levels of truancy and risky behaviours between disadvantaged London and 'rest of England' pupils together contributed to **16.7%** of the London advantage in attainment. However, in 2015 the contribution of both was practically zero. Figures 21 and 22 illustrate the reasons for this change.

Figure 21 Levels of truancy in London and rest of England (2006 and 2015)

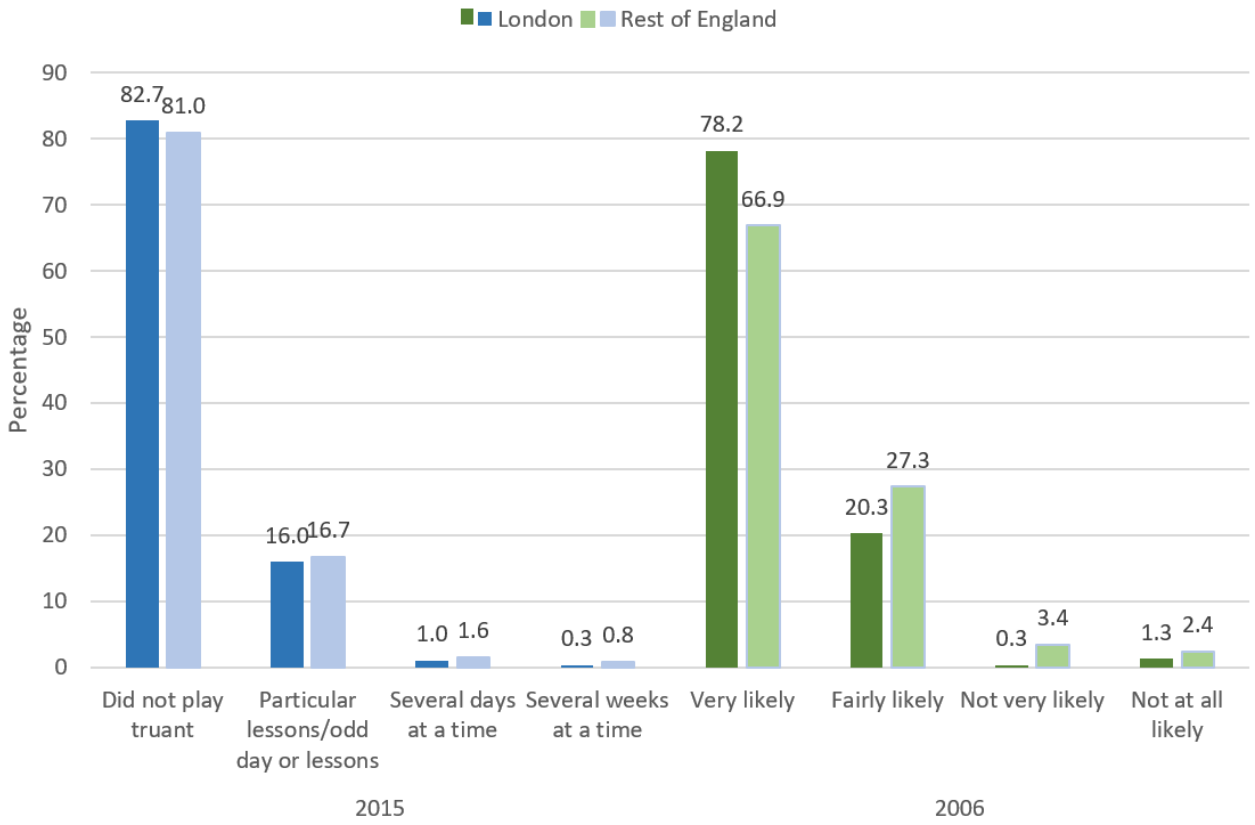
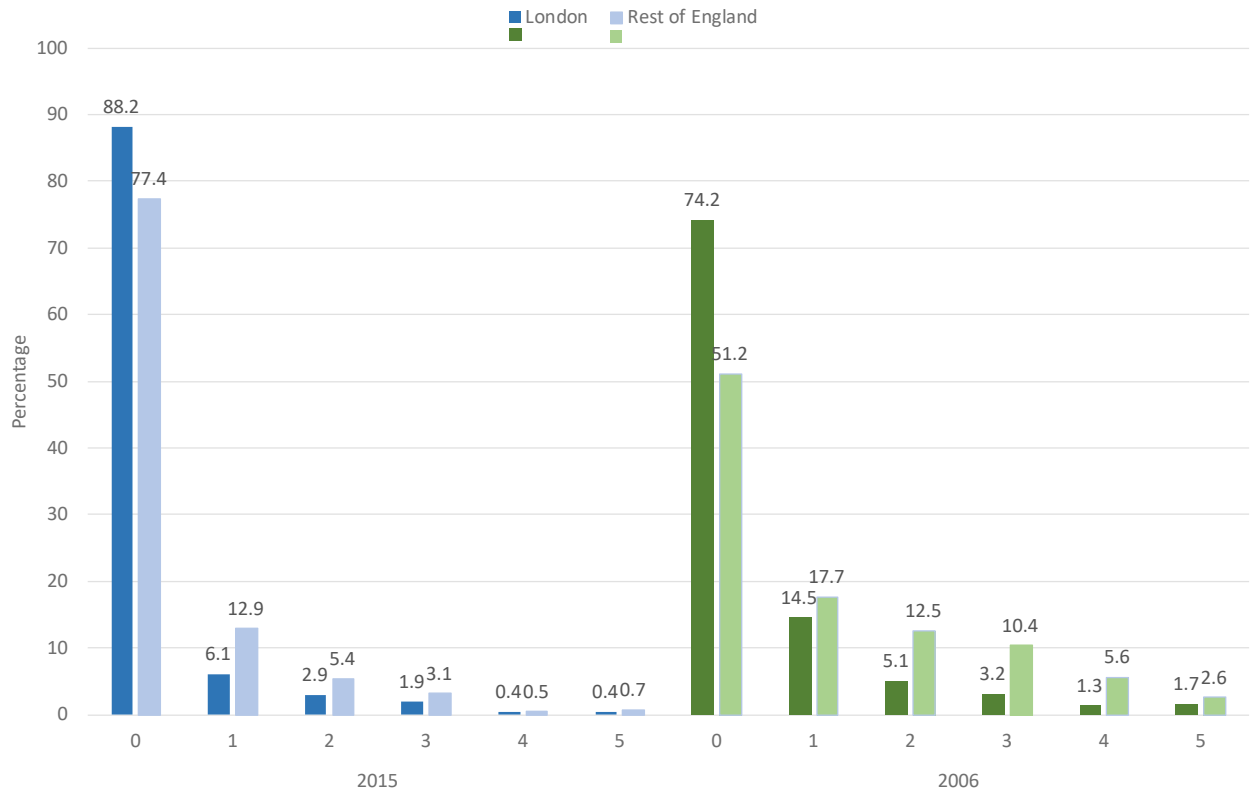


Figure 22 Number of risky behaviours engaged in during the last 12 months among London and RoE pupils (2006 and 2015)



In 2006, disadvantaged pupils living in the rest of England were 52% more likely to truant than disadvantaged pupils living in London, whereas in 2015 they were only 10% more likely. Likewise, pupils living in the rest of England were 3 times more likely to have engaged in three or more risky behaviours in 2006, compared to just 1.5 times in 2015. The results of our analyses suggest that if levels of truancy and risky behaviour in the rest of England in 2006 were the same as those seen in London, then the London advantage might have been 7.6 points smaller. Again, we cannot infer from our analyses that the relationship is causal, however, this figure is close to the 10.2-point decline in the London advantage in attainment in 2015.

There was some indication that the aspirations of peers and pupil engagement in extra-curricular activity contributed to the London advantage in 2006. Differences in the Year 12 aspirations of the peers of London and 'rest of England' pupils made a small, borderline significant, contribution to the London advantage in 2006 (*8.8%* borderline significant), but none in 2015. In 2006, disadvantaged London pupils were 1.6 times more likely to report that their friends were planning to stay in fulltime education, whereas in 2015 the figure had fallen to 1.2 times. In line with our interpretation of the relative change in parents Year 12 aspirations, the convergence in peers' aspirations will also be associated with RPA.

Differences in levels of engagement in extracurricular activities also made a small, borderline significant, contribution to the London advantage in 2006 (*6.1%,* borderline significant), which was equally split between differences in the access to and use of school sports facilities (4.1% n/s) and school club or societies (2% n/s).

The contribution of structural factors to the London advantage in attainment in 2015

(associations assumed to remain the same in the rest of England)

Decomposition analyses requires making an important assumption about the nature of the associations between our factors and pupil attainment. The associations used to estimate the models described above are from the full sample (i.e. a sample that includes disadvantaged pupils in London and the rest of England), adjusted for all of the other factors in the model, and includes an indicator for place of residence. In other words, these are the average (or pooled) associations, which lie somewhere between the separate associations for London and the rest of England. The assumption being that if the distribution of a factor in the rest of England was the same as what it was in London, then we would also expect its association with pupil attainment to be more similar to that in London (although not necessarily exactly the same).

An alternative assumption, and one which we explore here, is that the associations would in fact remain the same in the rest of England. In other words, the associations with pupil attainment are those estimated using the rest of England sample only. In truth we cannot know how the associations would behave if the distributions were changed. However, by comparing our findings this way, it provides us with a better understanding of what might happen. We would argue, for example, that consistent findings are more robust and that the lack of consistency means we should be cautious in our conclusions. There might be other factors at play that remain unaccounted for in our models, perhaps reflecting an unobserved interaction between factor and place.

Overall, differences in the distributions of structural factors between London and the rest of England - if associations were assumed to remain the same in the rest of England - accounted for 25.3% (n/s) of the London advantage in attainment. This was less than when average associations were assumed (32.8%).

Table 5 The contribution of structural factors to the London advantage in attainment (2015) (associations assumed to remain the same in the rest of England)

Structural factors: domain	%	Factor	%
Individual characteristics	-1.5%	Gender	1.3%
		SEN	-2.8%
Ethnicity, language, and immigration	**30.8%**	Ethnicity	13.3%
		Language spoken in home	17.7%
		Place of birth	-0.2%
Family background	-4.7%	Parental education	-1.4%
		Tenure	**-6.9%**
		Family type	3.6%
School	13.6%	School size	5.6%
		Percent FSM	-1.1%
		Unauthorized absences	**9.0%**
Area	*-12.9%*	*Area deprivation*	*-12.9%*

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

The contribution of differences in area deprivation reduced by almost a third and was now borderline significant (*-12.9*, borderline significant, previously: **-18.1%**), which is the consequence of a smaller association between IDACI and pupil attainment for disadvantaged pupils in the rest of England (after adjustment for the other factors in the model). There was also a small decline in the contribution of ethnicity, language, and immigration differences (**30.8%**, previously **33.7%**), however this masked far larger changes in the underlying contributions for ethnic minority composition (13.3% n/s, previously 23.8% n/s), and for languages (17.7% n/s, previously 7.8% n/s), although both remained non-significant.

The contribution of structural and agency factors to the London advantage in attainment in 2015

(associations assumed to remain the same in the rest of England)

Differences in both agency and structural factors explained 58.6**%** of the London advantage in attainment. Again, this was smaller than when average associations were assumed (65.8%). This difference was mainly attributable to a larger negative contribution association with the combined ethnicity, language, and immigration differences after adjustment (-20.6 n/s; previously -10.9% n/s), which was related to a large underlying negative contribution for differences in ethnic minority composition (-21.9% n/s; previously -3.5% n/s). There was also a small increase in the negative contribution from differences in area deprivation (**-14.4%**, previously *-12.9%* borderline significant).

Table 6 The contribution of structural and agency factors to the London advantage in attainment (2015) (associations assumed to remain the same in the rest of England)

Structural factors: domain	**%**	**Factor**	**%**
Individual characteristics	-1.7%	Gender	0.2%
		SEN	-1.9%
Ethnicity, language, and immigration	-20.6%	Ethnicity	-21.9%
		Language spoken in home	0.2%
		Place of birth	1.1%
Family background	-1.7%	Parental education	-4.8%
		Tenure	-1.0%
		Family type	*4.1%*
School	5.6%	School size	-0.1%
		Percent FSM	-1.1%
		Unauthorized absences	**6.8%**
Area	**-14.4%**	**Area deprivation**	**-14.4%**
Agency factors: domain		**Factor**	**%**
Personal aspirations	12.5%	*Personal aspirations Year 12*	*6.3%*
		University aspirations	6.1%
Self-belief	12.3%	Expect to get into uni if applied	8.0%
		Self-rated ability in school work	4.3%
Homework frequency	**17.9%**	**Homework frequency**	**17.9%**
Reading frequency	4.5%	Reading frequency	4.5%
Extracurricular activity	4.0%	Uses school sports facilities outside lessons	2.2%
		Attends school clubs or societies	1.7%
Truancy	0.5%	Truancy	0.5%
Risky behaviours	0.8%	Risky behaviours	0.8%
Parental aspirations /expectations	**29.8%**	Parental aspirations Year 12	1.4%
		Parental expectations for university	**28.4%**
Parental engagement	**6.1%**	**Attends parent-teacher evenings**	**6.1%**
Peer aspirations for Year 12	2.9%	Peer aspirations for Year 12	2.9%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

There was little change to the contribution of agency factors when we assumed associations remained the same in the rest of England. Differences in pupils' personal aspirations/expectation made a slightly larger contribution to the London advantage, but this was not statistically significant (12.5% n/s**;** previously *10.7%* borderline significant). This was then countered by a smaller contribution for differences in levels of self-belief, also non-significant (12.3% n/s; previously **17.5%**). Underlying these changes there appeared to be a swap in the relative contributions for differences in pupils' expectations

of applying to university (6.1% n/s; previously 2.9% n/s) and expectations of getting into university were they to apply (8.0% n/s; previously *12.5%* borderline significant).

As we already noted, there is an obvious overlap between these two measures. On that basis, we should not read too much into this change. Beyond this there were no changes of note when associations were assumed to remain the same in the rest of England.

The contribution of structural factors to the London advantage in attainment in 2006

(associations assumed to remain the same in the rest of England)

Similar to 2015, if we assumed associations remained the same in the rest of England, the explained London advantage attributable to differences in structural factors was smaller, in fact in 2006, far smaller (14%, n/s previously 27.5% n/s).

Table 7 The contribution of structural factors to the London advantage in attainment (2006) (associations assumed to remain the same in the rest of England)

Structural factors: domain	%	Factor	%
Individual characteristics	-10.4%	Gender	1.1%
		SEN	-11.5%
Ethnicity, language, and immigration	**39.8%**	Ethnicity	-16.0%
		Language spoken in home	26.7%
		Place of birth	**29.1%**
Family background	**-17.5%**	**Parental education**	**-15.4%**
		Tenure	-2.9%
		Family type	0.9%
School	1.5%	School size	-1.1%
		Percent FSM	-3.7%
		Unauthorized absences	*6.4%*
Area	0.6%	Area deprivation	0.6%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

There was a small decline in the combined contribution of ethnicity, language, and immigration differences (**39.8%**; previously **46.1%**). However, similar to 2015, there was a very significant change in the underlying contributions of differences in ethnic minority composition (-16% n/s; previously: *34.7%* borderline significant), languages spoken in the home (26.7% n/s; previously: 4.0% n/s) and in 2006, place of birth, which was now statistically significant (**29.1%**; previously 7.4% n/s). This is because the association between place of birth and pupil attainment for disadvantaged pupils in the rest of England was substantially larger than it was for London in 2006 and for both London and the rest of England in 2015. The average attainment of disadvantaged pupils living in the

rest of England in 2006 who were born outside of the UK was 60 pts (or 10 GCSE grades) higher than their UK born peers. In London in 2006 and in London or the rest of England in 2015, this difference in attainment was small and non-significant.

Further investigation is needed to understand the reasons for this difference, which probably reflect differences in patterns of migration across time. It also illustrates the changing dynamic of these trends and the implications this has for changing patterns of attainment overtime.

The contribution of structural and agency factors to the London advantage in attainment in 2006

(associations assumed to remain the same in the rest of England)

Similar to our findings when average associations were assumed, the addition of agency factors substantially increased the explained London advantage (83.6%; previously when average associations were assumed: 91.1%), although the figure remained smaller when associations were assumed to remain the same in the rest of England.

Table 8 The contribution of structural and agency factors to the London advantage in attainment (2006) (associations assumed to remain the same in the rest of England)

Structural factors: domain	**%**	**Factor**	**%**
Individual characteristics	-8.2%	Gender	-0.1%
		SEN	-8.1%
Ethnicity, language, and immigration	-20.3%	*Ethnicity*	*-30.0%*
		Language spoken in home	-0.5%
		Place of birth	10.3%
Family background	**-13.5%**	**Parental education**	**-9.1%**
		Tenure	-1.6%
		Family type	-2.8%
School	7.8%	School size	-0.2%
		Percent FSM	2.2%
		Unauthorized absences	*5.7%*
Area	-1.8%	Area deprivation	-1.8%
Agency factors: domain		**Factor**	**%**
Personal aspirations	6.8%	Personal aspirations Year 12	6.4%
		University aspirations	0.4%
Self-belief	**27.6%**	**Expect to get into uni if applied**	**26.6%**
		Self-rated ability in school work	1.0%
Homework frequency	**14.1%**	**Homework frequency**	**14.1%**
Reading frequency	1.5%	Reading frequency	1.5%
Extracurricular activity	3.7%	Uses school sports facilities outside lessons	0.9%
		Attends school clubs or societies	2.9%
Truancy	7.0%	**Truancy**	**7.0%**
Risky behaviours	**10.6%**	**Risky behaviours**	**10.6%**
Parental aspirations /expectations	**30.2%**	**Parental aspirations Year 12**	**11.9%**
		Parental expectations for university	**18.3%**
Parental engagement	*7.1%*	*Attends parent-teacher evenings*	*7.1%*
Peer aspirations for Year 12	**11.1%**	**Peer aspirations for Year 12**	**11.1%**

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Again, there was a small change in the combined contribution of ethnicity, language, and immigration differences when associations were assumed to remain the same in the rest of England (-20.3 n/s; previously -15.3 n/s). This masked large changes in the underlying contributions of ethnicity (*-30%* borderline significant; previously -2.2% n/s), language (-0.5% n/s; previously -9.7% n/s) and place of birth, with latter remining positive but no longer statistically significant after adjustment for agency factors (10.3% n/s; previously -3.4%).

Consistency in the contribution of agency factors under the two assumptions was even greater in 2006. Nevertheless there were some notable small differences. Differences in the aspirations of the peers made a slightly larger contribution to the London advantage, and was now statistically significant (**11.1%**; previously *8.8%* borderline significant), as did differences in parents university expectations (**18.3%**; previously *16.2%* borderline significant). However, the change in the latter was countered by small decline in the contribution of parental aspirations for Year 12 (**11.9%**; previously: **14.4%**), which meant there was no change in the contribution of the parental aspirations/expectations domain overall (**30.2%**; previously **30.6%**).

Chapter 6 Decomposition of the London advantage in School Progress

For the remainder of our report, we adjust our analysis for differences in pupils' prior attainment (Key Stage 2 tests sat at the end of Primary school). This has two important implications for our analyses. First, the nature of what is being examined changes from the difference in the KS4 attainment of disadvantaged London pupils and those living in the rest of England, to the difference in their educational progress during secondary school. Second, the previously estimated contributions of the factors we examined are now further adjusted for pupil ability (measured at age 11), and by definition, also adjusted for all of the factors that contributed to differences in measured ability at age 11. By comparing our results for school progress with those for attainment, we can get some measure of the extent to which previous contributions to the London advantage are a consequence of higher prior attainment in London[22]. For example, some measure of the extent to which higher aspirations/expectations of London parents are a result of higher levels of key stage 2 attainment among London pupils. Alternatively, evidence of a consistency in contribution of a factor highlights its continued importance during secondary school.

The contribution of structural factors to the London advantage in school progress in 2015

Figure 23 The contribution of structural factors to the London advantage in school progress (2015)

[22] The reason we only get 'some' measure of the contribution of ability is because the contribution of prior attainment also represents the contribution of all those factors (both structure and agency) that contributed to a pupil's earlier attainment.

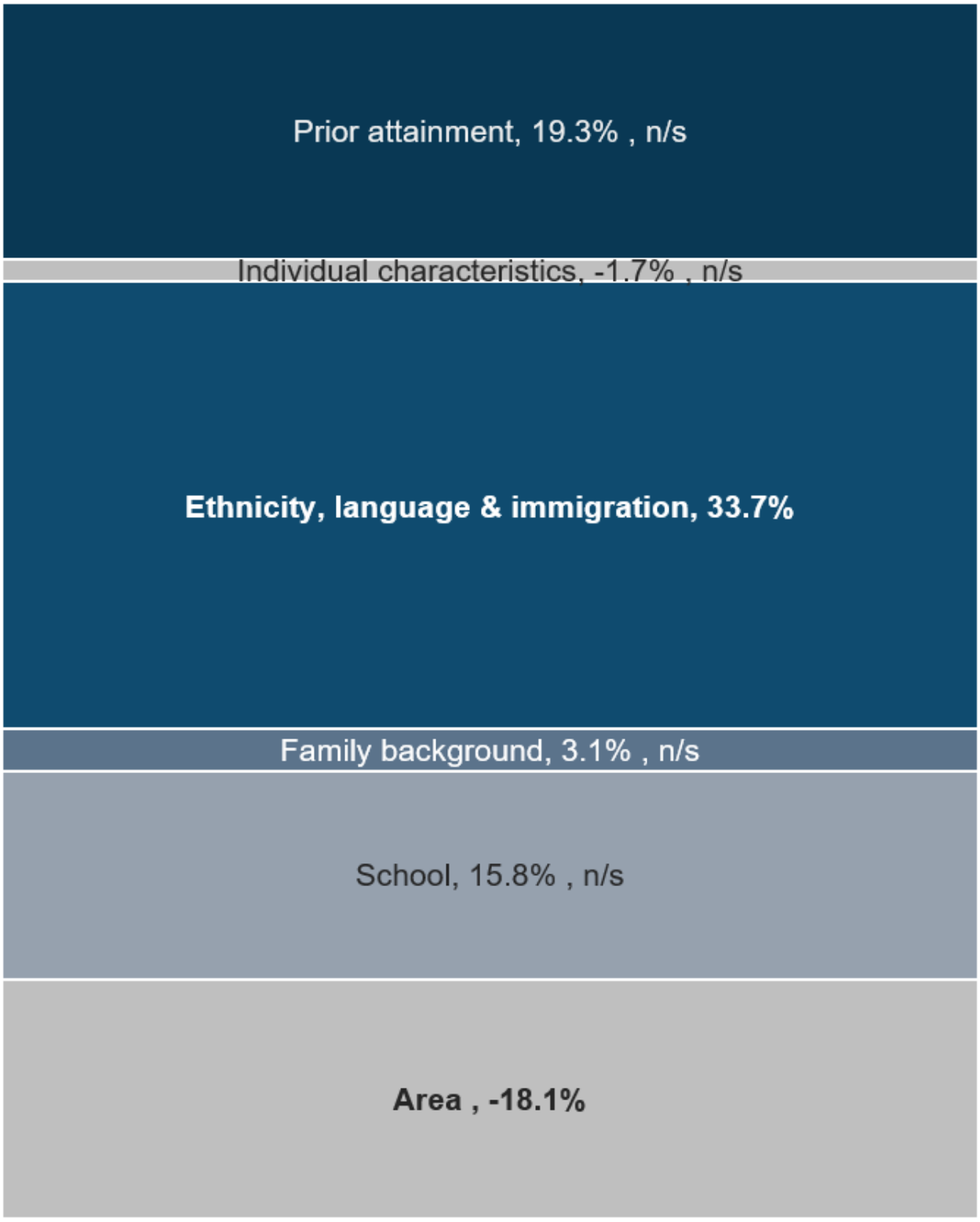


Figure 23 above presents the findings of a decomposition analysis of the London advantage in school progress in 2015, showing the extent to which differences in school progress was attributable to differences in the structural characteristics of the lives of

disadvantaged pupils living in London compared to those in the rest of England[23]. Table 9 unpacks these findings further, showing the contribution attributed to each of the individual factors that make up these domains.

Table 9 The contribution of structural factors to the London advantage in school progress (2015)

Structural factors: domain	Factor	%
Prior attainment	Prior attainment	19.3%
Individual characteristics	Gender	1.3%
	SEN	-0.7%
Ethnicity, language, and immigration	**Ethnicity**	**31.3%**
	Language spoken in home	10.5%
	Place of birth	*5.6%*
Family background	Parental education	-0.7%
	Tenure	-3.9%
	Family type	*3.7%*
School	School size	1.7%
	Percent FSM	4.9%
	Unauthorized absences	**8.4%**
Area	**Area deprivation**	**-9.5%**

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

When we add prior attainment to the structural model previously described in Chapter 5, the London advantage we were able to explain increased substantially (71.8%, previously: 32.8%). A large part of this increase was attributable to the contribution of differences in key stage 2 scores between disadvantaged London pupils and those living in the rest of England (19.3% n/s), however this was not statistically significant. When separately estimated, the contribution of prior attainment was large and statistically significant (**30.1%**). Key stage 2 scores among London pupils were higher, on average, than for pupils living in the rest of England (26.1 compared to 25.2), and were strongly associated with KS4 attainment (association: 13.9), as we would expect. After adjusting for a broad range of structural factors, many of which are also associated with key stage 2 scores, however, its contribution was smaller and no longer significant.

The remainder of the increase in the explained London advantage is from an increased contribution for ethnicity, language, and immigration differences (**47.5%**, previously for attainment: **33.7%**). This was predominantly driven by an increase in the contribution for differences in ethnic composition (**31.3%** previously: 23.8% n/s), with slight increases in

[23] Rest of England as defined here excludes Manchester and Birmingham. Disadvantaged pupils living in these districts have shown a similar attainment advantage relative to those living in the rest of England Burgess, S. (2014). If we were to include them with our rest of England sample this would dilute the London advantage we are seeking to explain.

the contribution of language differences (10.5% n/s previously 7.8% n/s) and differences in place of birth (*5.6%* borderline significant, 2.1% n/s). There was also a decline in the contribution for differences in area level deprivation (**-9.5%**, previously: **- 18.1%**).

A substantial part of the London advantage in school progress during secondary school can be attributed to a greater prevalence of disadvantaged ethnic minority pupils who made far greater progress compared to disadvantaged White pupils. The increased contribution for ethnicity, language, and immigration (relative to the contribution seen for attainment) is because differences in key stage 2 scores across ethnic groups were far smaller and non-significant. This suggests that the advantage associated with a greater prevalence of certain minority groups predominantly occurs during secondary school. Also, assuming most pupils remained living in the same or similar areas between primary and secondary school, the smaller negative contribution associated with area level deprivation after adjustment suggests London pupils also had lower key stage 2 scores than they might have otherwise had because of the areas in which they lived.

Figure 24, below, shows the extent to which the London advantage in school progress in 2015 was attributed to differences in both structural and agency factors, characteristic of the lives of disadvantaged pupils living in London and in the rest of England (RoE). Table 10 unpacks these findings further, showing the contribution attributed to each of the individual factors that make up these domains.

The contribution of structural and agency factors to the London advantage in school progress in 2015

Figure 24 The contribution of structural and agency factors to the London advantage in school progress (2015)

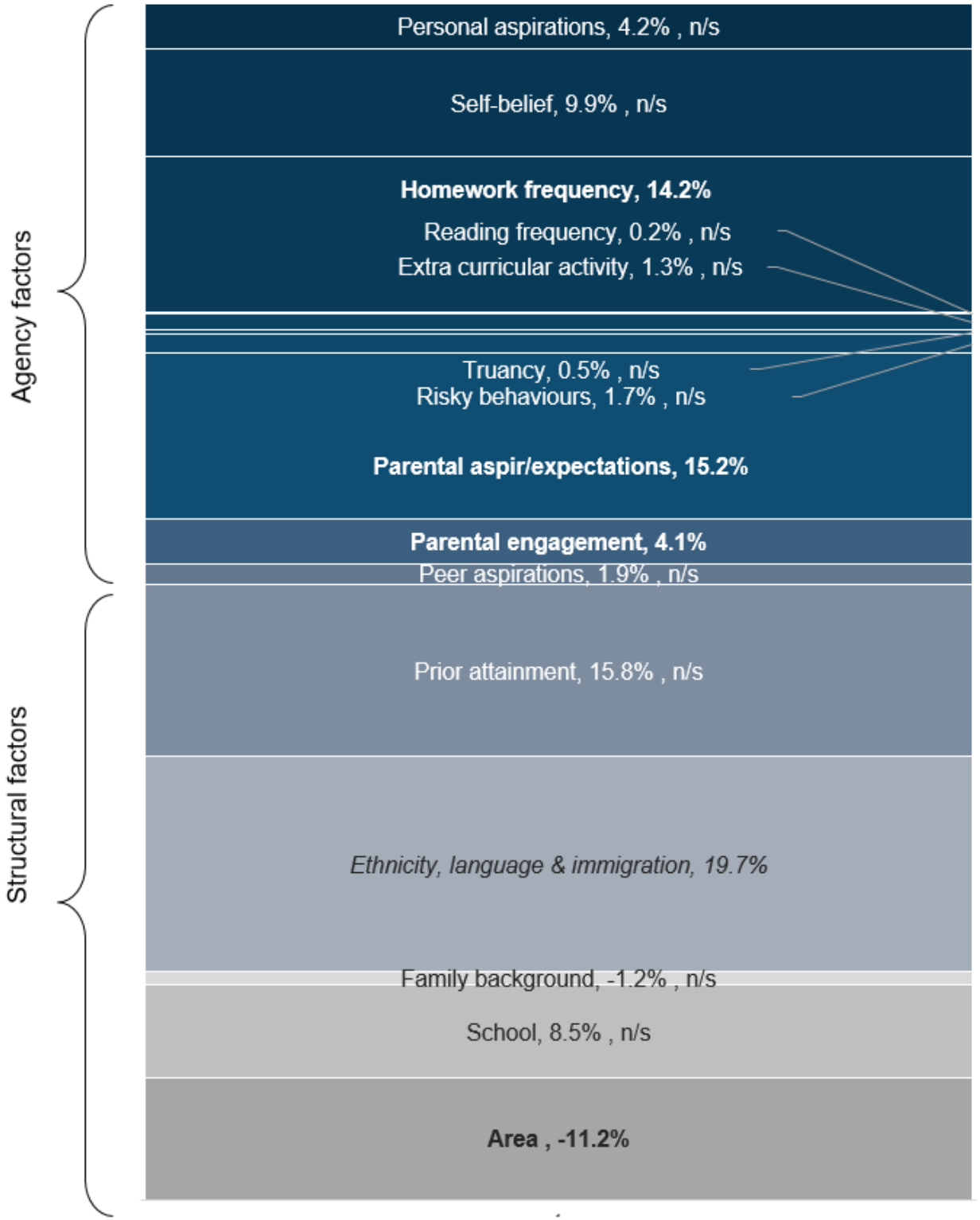


Table 10 The contribution of structural and agency factors to the London advantage in school progress (2015)

Structural factors: Domain	**Factor**	**%**
Prior attainment	Prior attainment	15.8%
Individual characteristics	Gender	0.6%
	SEN	-0.6%
Ethnicity, language, and immigration	Ethnicity	14.2%
	Language spoken in home	1.2%
	Place of birth	4.3%
Family background	Parental education	-3.4%
	Tenure	-1.5%
	Family type	**3.8%**
School	School size	-0.5%
	Percent FSM	2.2%
	Unauthorized absences	**6.8%**
Area	**Area deprivation**	**-11.2%**
Agency factors: Domain	**Factor**	**%**
Personal aspirations	Personal aspirations Year 12	3.2%
	University aspirations	1.0%
Self-belief	Expect to get into university if applied	7.4%
	Self-rated ability in school work	2.5%
Homework frequency	**Homework frequency**	**14.2%**
Reading frequency	Reading frequency	0.2%
Extracurricular activity	Uses school sports facilities outside lessons	0.8%
	Attends school clubs or societies	0.5%
Truancy	Truancy	0.5%
Risky behaviours	Risky behaviours	1.7%
Parental aspirations /expectations	Parental aspirations Year 12	1.6%
	Parental expectations for university	**13.6%**
Parental engagement	**Attends parent-teacher evenings**	**4.1%**
Peer aspirations for Year 12	Peer aspirations for Year 12	1.9%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Adding agency factors to our model led to a moderate increase in the explained London advantage in school progress overall (84.8%). As we had previously seen in our analysis

for attainment, their inclusion led to large declines in the contribution of the structural domains, suggesting structural differences were mostly mediated through differences in the agency factors now included in the model. Unlike our findings for attainment, however, a residual contribution for ethnicity, language, and immigration differences remained (*19.7%*, borderline significant; previously for attainment: -10.9% n/s). This might relate to the larger initial contribution for ethnicity, language, and immigration differences to the London advantage in school progress when compared to attainment. However, the absolute decline in the contribution of ethnicity, language, and immigration differences after adjustment was also smaller for school progress (a decline of -27.8% for school progress compared to: -44.6% for attainment). This means that some of the contribution to the London advantage in school progress from ethnicity, language, and immigration differences remained unexplained, and was attributable to other factors not included in our model.

Similar to our findings for attainment there was also a slight decline in the contribution for unauthorised absences (**6.8%**), and persistency in the contribution of area deprivation, increasing very slightly even (**-11.2%**). Differences in levels of unauthorised absences was partially mediated through differences in the agency factors in our model, however they did not account for the contribution related to differences in area level deprivation. There was also a small reduction in the contribution of prior attainment (15.8% n/s; previously: 19.3% n/s) as we might expect.

Agency factors that were important for understanding the London advantage in attainment, were also important for understanding the advantage in school progress. Nevertheless, contributions were substantially smaller following adjustment for prior attainment. Differences in aspirations and/or expectations of parents remained the largest contribution overall (**15.2%;** previously for attainment: **27.8%**), driven as previously seen for attainment, by differences in parental university expectations (**13.6%**; previously for attainment: **27.1%**). This was closely followed by contributions for differences in the time pupils spent doing homework (**14.2%**; previously for attainment: **18%**), levels of self-belief (9.9% n/s; previously for attainment: **17.5%**), attendance at parent-teacher evenings (**4.1%**; previously for attainment: **5.5%**) and personal aspirations/expectations (4.2% n/s, previously: *10.7%* borderline significant).

The extent of the decline in the original contributions seen for attainment informs us of the extent to which this was attributable to the higher levels of prior attainment among disadvantaged London pupils. Almost half of the contribution attributed to higher university expectations among London parents was attributable to the higher levels of prior attainment. This suggests that higher performance by disadvantaged London pupils

led to (at least to some extent[24]) higher expectations among their parents. Nevertheless, differences in parental expectations between London parents and those in the rest of England remained significant after adjustment, suggesting they were also more than a response to their child's earlier attainment and were themselves associated with greater levels of progress.

Despite this finding, we still cannot say that the higher expectations of London parents were driving the higher levels of progress among London pupils. It is also quite possible that the reverse is true, with parents responding instead to their child's continuing level of progress. What is most likely, however, is that the relationship is reciprocal, with high parental expectations encouraging good progress and in turn good progress encouraging higher parental expectations(Seginer, 1983).

Declines were similar for the contributions for differences in self-belief and the aspirations of peers (although the latter was small and non-significant to begin with), and somewhat larger for the contribution of pupils' own aspirations/expectations (which declined approximately 60%). Higher levels of prior achievement among disadvantaged London pupils accounted for a large part of their higher levels of self-belief, personal aspirations/expectations and possibly, their peer groups also.

Declines in the contributions for differences in homework behaviour (approx. 20% decline), and attendance at parent-teacher evenings (25% decline), were much smaller, however. This would appear to suggest that academic behaviours (for both parent and child) are less pervious to prior proven ability than are academic aspirations/expectation and self-belief, which remain fairly persistent, and are perhaps therefore more pertinent to explaining the London advantage. Of course, we must recognise that the amount of time pupils spend doing homework is to an extent, more outside of their control than are their aspirations and self-belief[25]. Similarly, the motivation of parents to attend parent-teacher evenings will also be driven by factors other than a desire to engage in their child's education. Both continue to make small/moderate contributions to the London advantage after adjustment for prior attainment.

[24] As we note at the beginning of the Chapter, as well as adjusting for ability at age 11, adjusting for prior attainment also adjusts for the factors that contributed to that ability, including the young person's social background as well as their previous attitudes, aspirations and behaviours and those of their parents and peers.

[25] We do not assume that young people have full control over their aspirations and self-belief (see our earlier footnote in which we highlight the importance of structural factors in the development of these factors), but rather that the pathway - in this case between the demands of the school and pupil's own behaviour - is more transparent, particularly to the young person themselves.

The contribution of structural factors to the London advantage in school progress in 2006

A very important point of note in a comparison the results for the London advantage in 2015 with those for 2006, is the change in the contribution of prior attainment itself. Whilst the contribution of prior attainment was non-significant at both time points, its contribution was substantially smaller in 2006 (7.9% n/s; previously for: 2015: 19.3% n/s). This is because of an increase in the relative difference in average key stage 2 attainment between disadvantaged London pupils and those living in the rest of England over time. In 2006, key stage 2 scores among disadvantage London pupils were 0.5 points higher on average (25.3 c.f. 24.8, p = .091) than those in the rest of England, although the difference was only borderline significant. In 2015 this difference had increased to 0.9 points (26.1 c.f. 25.2, p = 0.001).

Furthermore, its contribution to the London advantage in attainment when estimated separately, was twice as large in 2015 (**30%**) than it was in 2006 (*14%* borderline significant). This would appear counter to a previous hypothesis in which the London advantage in key stage 4 attainment was claimed to stem from earlier advantages gained during primary school, and that an increasing London advantage in key stage 2 attainment predated and was the largest contributing factor to the London advantage at key stage 4(Greaves et al., 2014). A similar finding was also evident in the analyses of Blanden et al. (2015) although this was not something they commented on within the report.

Table 11 below presents the results of a decomposition of the London advantage in school progress in 2006 using structural factors alone. The unique contributions of each domain are presented, and then further unpacked into the individual contributions of their constituent factors.

Table 11 The contribution of structural factors to the London advantage in school progress (2006)

Structural factors: domain	%	Factor	%
Prior attainment	7.9%	Prior attainment	7.9%
Individual characteristics	-2.3%	Gender	2.5%
		SEN	-4.7%
Ethnicity, language, and immigration	**63.9%**	*Ethnicity*	*34.0%*
		Language spoken in home	20.8%
		Place of birth	9.0%
Family background	*-8.4%*	Parental education	-6.2%
		Tenure	-1.7%
		Family type	-0.4%
School	0.6%	School size	-2.3%
		Percent FSM	-2.3%
		Unauthorized absences	5.2%
Area	0.4%	Area deprivation	0.4%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Similar to our findings for 2015, there was a substantial increase in the explained London advantage overall when accounting for differences in prior attainment (62.1%; previously for attainment: 27.5%). Also similar was a substantial increase in the combined contribution for ethnicity, language, and immigration differences (**63.9%**; previously for attainment: **46.1%**), although in 2006, this was almost entirely attributable to a large increase in the contribution of differences in languages spoken (20.8% n/s; previously: 4.0% n/s), although remaining non-significant. Contributions for both ethnicity and place of birth remained relatively unchanged.

There was a large decline in the contribution related to differences in parental education (-6.2% n/s; previously for attainment: **-13.3%**). Parental education impacts throughout the young person's life course and will have contributed to differences in pupils' earlier attainment at key stage 2. Once this is adjusted for, its contribution to the London advantage at key stage 4 also reduces. The contribution of differences in unauthorized absences was also smaller and no longer borderline significant after adjustment for prior attainment (5.2% n/s; previously *7.2%* borderline significant).

The contribution of structural and agency factors to the London advantage in school progress in 2006

Table 12 below shows the extent to which the London advantage in school progress in 2006 was attributed to differences in both structural and agency factors, characteristic of the lives of disadvantaged pupils living in London and in the rest of England (RoE).

Table 12 The contribution of structural and agency factors to the London advantage in school progress (2006)

Structural factors: domain	**%**	**Factor**	**%**
Prior attainment	5.9%	Prior attainment	5.9%
Individual characteristics	-2.8%	Gender	1.4%
		SEN	-4.2%
Ethnicity, language, and immigration	9.1%	Ethnicity	4.6%
		Language spoken in home	3.9%
		Place of birth	0.5%
Family background	*-7.8%*	Parental education	-2.9%
		Tenure	-1.4%
		Family type	-3.5%
School	4.4%	School size	-0.9%
		Percent FSM	0.7%
		Unauthorized absences	*4.6%*
Area	-1.7%	Area deprivation	-1.7%
Agency factors: domain		**Factor**	**%**
Personal aspirations	5.6%	Personal aspirations Year 12	4.6%
		University aspirations	1.0%
Self-belief	*18.6%*	**Expect to get into uni if applied**	**19.1%**
		Self-rated ability in school work	-0.5%
Homework frequency	**14.3%**	**Homework frequency**	**14.3%**
Reading frequency	2.4%	Reading frequency	2.4%
Extracurricular activity	2.7%	Uses school sports facilities outside lessons	1.9%
		Attends school clubs or societies	0.9%
Truancy	**7.6%**	**Truancy**	**7.6%**
Risky behaviours	**12.5%**	**Risky behaviours**	**12.5%**
Parental aspirations /expectations	**19.7%**	**Parental aspirations Year 12**	**14.2%**
		Parental expectations for university	5.5%
Parental engagement	*5.6%*	*Attends parent-teacher evenings*	*5.6%*
Peer aspirations for Year 12	**8.5%**	**Peer aspirations for Year 12**	**8.5%**

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Contrary to our findings for 2015, the addition of agency factors led to a very substantial increase in the explained London advantage in school progress, which together with structural factors and prior attainment, accounted for 104.6% of the London advantage[26].

Also contrary to 2015, the large combined contribution for ethnicity, language, and immigration differences disappeared (9.1% n/s; previously: **63.9%**) once we adjusted for agency factors. This decline, which was consistent across the underlying factors of ethnicity (4.6% n/s; previously: *34.0%* borderline significant), languages spoken in the home (3.9% n/s; previously 20.8% n/s) and place of birth (0.5% n/s; previously 9.0% n/s), suggests their contribution to the London advantage in 2006 were entirely mediated through differences in agency factors, including their aspirations, self-belief and behaviours, as well as those of their parents and peers.

There was a further decline in the contribution for differences in parental education (remaining non-significant), similar to what was seen for attainment, suggesting partial mediation through differences in agency factors (-2.9% n/s; previously -6.2% n/s). Whilst the contribution of prior attainment was smaller in 2006 than it was in 2015, the relative decline in its contribution was very similar over time (5.9% n/s; previously: 7.9% n/s).

Similar to our findings for 2015, those factors that were important for understanding the London advantage in attainment were also important for understanding the advantage in school progress. Differences in parental aspirations and/or expectations of parents remained the largest contributing factor overall (**19.7%;** previously for attainment: **30.6%**), along with differences in self-belief (*18.6%* borderline significant; previously for attainment: **25.1%**). As we found for 2015, contributions were smaller given the adjustment for prior attainment, however, the reductions in contributions themselves were also smaller in 2006 on account of smaller differences in prior attainment.

Consistent with our findings for 2015, there were smaller declines in the contributions for behavioural factors, or in fact any decline given the smaller differences in prior attainment for 2006. Differences in the amount of homework pupils were doing remained consistently important for understanding the London advantage in school progress (**14.3%**; previously for attainment: **15%**), as did differences in parents' attendance at parent-teacher evenings (*5.6%,* borderline significant; previously for attainment: 5.2% n/s), also becoming borderline significant after adjustment for prior attainment.

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[26] In this instance differences in structural and agency factors explained *more than* the total difference in attainment between London and the rest of England. This suggests that if all of our measured differences (both structural and agency) were the same in the rest of England as they were in London, there would in fact be a small attainment advantage for disadvantaged pupils living in rest of England relative to those living in London.

The decline in the contribution of personal aspirations was greater (5.6% n/s; previously for attainment: 9.6% n/s), which suggests a stronger link between prior attainment and pupils own personal aspirations, similar to what we found for 2015.

In terms of the two factors notable for their absence in understanding the London advantage in 2015. There were slight increases in the contributions related to differences in truancy (**7.6%**; previously for attainment: **6.7%**) and risky behaviours (**12.5%**; previously for attainment: **10%**). As we found for other measure of pupil behaviour (homework), differences in prior attainment could not account for any of the difference in truancy and risky behaviours and their contribution to the London advantage. Lower attainment among disadvantaged pupils in the rest of England had not contributed, for example, to them to act out, although we must remember that differences in prior attainment between London and 'rest of England' pupils were really quite small.

The contribution of structural factors to the London advantage in school progress in 2015

(associations assumed to remain the same in the rest of England)

The overall London advantage in school progress in 2015 that was attributable to differences in structural factors was lower when associations were assumed to remain the same in the rest of England (62.2%; average associations: 71.8%). This was attributable to a lower combined contribution for ethnicity, language, and immigration differences (**38.3%**; average associations: **47.5%**)

Table 13 The contribution of structural factors to the London advantage in school progress (2015) (associations assumed to remain the same in the rest of England)

Structural factors: domain	%	Factor	%
Prior attainment	19.8%	Prior attainment	19.8%
Individual characteristics	0.7%	Gender	1.4%
		SEN	-0.7%
Ethnicity, language, and immigration	**38.3%**	Ethnicity	5.7%
		Language spoken in home	*22.6%*
		Place of birth	*10.1%*
Family background	-6.2%	Parental education	-5.3%
		Tenure	-4.5%
		Family type	3.6%
School	16.9%	School size	2.5%
		Percent FSM	6.1%
		Unauthorized absences	**8.3%**
Area	-7.4%	Area deprivation	-7.4%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Furthermore, changes in the underlying contributions for ethnic group differences (5.7% n/s; average associations: **31.3%**), languages spoken in the home (*22.6%* borderline significant; average associations: 10.5%), and place of birth (*10.1%* borderline significant; average associations: *5.6%* borderline significant) were greater still.

Previously, when we had assumed average associations, our results suggested that a considerable part of the London advantage in school progress was attributable to large differences in the ethnic minority composition of London and the rest of England: If the ethnic composition of the rest of England was the same as it was in London, then the advantage in school progress was expected to be 30% smaller. However, when we assume that associations between ethnicity and school progress remained the same in the rest of England, the estimated change in the London advantage associated with changing the ethnic composition in the rest of England was fractional and non-significant.

On the other hand, changes in the contributions associated with differences in languages spoken and patterns of migration, if associations were assumed to remain the same, suggest much greater reductions in the London advantage. However, the estimated contributions are borderline significant, meaning the findings are less robust. In truth, we cannot know what would happen if we were able to affect the composition of the rest of England to match London. But what these differences in findings under different assumptions do tell us, is that we should remain cautious in attributing too much cause to these characteristics without recognising that they are associated with different outcomes depending on where pupils live.

Contributions related to measured school differences were slightly larger but non-significant (16.9% n/s, average associations: *14.9%* borderline significant) and differences in area level disadvantage, slightly smaller and non-significant (-7.4% n/s; pooled: **-9.5%**) when we assume associations remained the same in the rest of England. The contribution for differences in prior attainment remained consistent (19.8% n/s; average associations: 19.3%) regardless of the assumption made concering the association with pupil attainment.

The contribution of structural and agency factors to the London advantage in school progress in 2015

(associations assumed to remain the same in the rest of England)

Table 14 The contribution of structural and agency factors to the London advantage in school progress (2015) (associations assumed to remain the same in the rest of England)

Structural factors: domain	**%**	**Factor**	**%**
Prior attainment	16.3%	Prior attainment	16.3%
Individual characteristics	0.0%	Gender	0.6%
		SEN	-0.5%
Ethnicity, language, and immigration	11.1%	Ethnicity	-10.0%
		Language spoken in home	12.9%
		Place of birth	*8.1%*
Family background	-4.4%	*Parental education*	*-6.8%*
		Tenure	-1.8%
		Family type	**4.2%**
School	11.2%	School size	-0.4%
		Percent FSM	4.7%
		Unauthorized absences	**6.9%**
Area	**-9.4%**	**Area deprivation**	**-9.4%**
Agency factors: domain		**Factor**	**%**
Personal aspirations	-1.1%	Personal aspirations Year 12	2.0%
		University aspirations	-3.2%
Self-belief	12.4%	Expect to get into university if applied	9.9%
		Self-rated ability in school work	2.5%
Homework frequency	**13.4%**	**Homework frequency**	**13.4%**
Reading frequency	0.5%	Reading frequency	0.5%
Extracurricular activity	2.4%	Uses school sports facilities outside lessons	1.8%
		Attends school clubs or societies	0.6%
Truancy	0.8%	Truancy	0.8%
Risky behaviours	2.4%	Risky behaviours	2.4%
Parental aspirations /expectations	**17.5%**	Parental aspirations Year 12	1.9%
		Parental expectations for university	**15.5%**
Parental engagement	**4.5%**	**Attends parent-teacher evenings**	**4.5%**
Peer aspirations for Year 12	1.5%	Peer aspirations for Year 12	1.5%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Similar to our findings when average associations were assumed, the inclusion of agency factors led to a moderate increase in the explained London advantage overall (79%; average associations: 84.8%). Furthermore, reductions in the contribution of structural domains were almost identical under the two assumptions, and therefore differences in the contributions described above remained.

The combined contribution of ethnicity, language, and immigration differences was smaller and non-significant (11.1% n/s; average associations: *19.7%* borderline significant), with consistent underlying differences in the contribution for ethnicity (-10% n/s; average associations: 14.2% n/s), languages spoken in the home (12.9% n/s; average associations: 1.2% n/s), and place of birth (*8.1%* borderline significant; average associations: 4.3% n/s).

Similar to when average associations were assumed, the small contribution related to differences in unauthorized absences reduced slightly (**6.9%**; average associations: **6.8%**), and the contribution for differences in area level deprivation increased slightly (**-9.4%**; average associations: **-11.2%**) once we adjusted for agency factors.

Contributions for the differences in agency factors between London and the rest of England were almost identical to those identified when average associations were assumed. The only difference of note was a slight increase in the contribution of parental university expectations (**17.5%**; average associations: **15.2%**).

The contribution of structural factors to the London advantage in school progress in 2006

(associations assumed to remain the same in the rest of England)

Table 15 The contribution of structural factors to the London advantage in school progress (2006) (associations assumed to remain the same in the rest of England)

Structural factors: domain	%	Factor	%
Prior attainment	7.9%	Prior attainment	7.9%
Individual characteristics	-3.0%	Gender	2.1%
		SEN	-5.1%
Ethnicity, language, and immigration	**61.3%**	Ethnicity	-10.1%
		Language spoken in home	**43.3%**
		Place of birth	**28.0%**
Family background	-9.9%	Parental education	-7.9%
		Tenure	-2.3%
		Family type	0.4%
School	-0.8%	School size	-1.9%
		Percent FSM	-4.0%
		Unauthorized absences	5.1%
Area	0.1%	Area deprivation	0.1%

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Similar to what we found for 2015, the London advantage in school progress attributed to differences in structural factors was a little lower if we assume associations remained the same in the rest of England (55.6%; average associations: 62.1%).

Whilst the combined contribution of ethnicity, language, and immigration differences was almost identical (**61.3%**; average associations: **63.9%**) there were large changes to the underlying contributions for differences in ethnic composition (-10.1% n/s; average associations: *34.0%* borderline significant), languages spoken in the home (**43.3%**; average associations: 20.8% n/s), and place of birth (**28%**, average associations: 9%), with notably large and significant contributions associated with both languages and place of birth.

Similar changes to the contributions for languages spoken in the home and place of birth, occurring when associations were assumed to remain the same, were evident in our analysis of the London advantage in attainment, although only the latter was statistically significant. This was attributable to a large association between place of birth and pupil attainment peculiar to disadvantaged pupils living in the rest of England in 2006. A similar pattern of association was also evident for languages spoken in the home. The attainment advantage for pupils for whom English was not their first language, and

especially for pupils for whom English was *not their only* language, was significantly larger among those living in the rest of England compared to those living in London in 2006 or living in either London or the rest of England in 2015.

The contribution of structural and agency factors to the London advantage in school progress in 2006

(associations assumed to remain the same in the rest of England)

Similar to when average associations were assumed, the explained London advantage in school progress overall increased substantially with the addition of agency factors (101.4%; average associations: 104.6%). For the most part, changes in the contribution of structural factors after adjusting for agency factors were also very similar. However, there were smaller changes in the contribution of ethnicity (-20.8% n/s; average associations: 4.6% n/s), language spoken (15.7% n/s; average associations 3.9% n/s) and place of birth (**15%**; average associations: 0.5% n/s). The findings suggest that if we assume associations remained the same in the rest of England, most of the London advantage in school progress attributed to differences in languages spoken, and just under half the contribution attributed to differences in place of birth, were mediated through differences in the agency factors now included in our model.

The contributions of agency factors to the London advantage in school progress themselves were almost identical to those estimated when average associations were assumed.

Table 16 The contribution of structural and agency factors to the London advantage in school progress (2006) (associations assumed to remain the same in the rest of England)

Structural factors: domain	**%**	**Factor**	**%**
Prior attainment	6.2%	Prior attainment	6.2%
Individual characteristics	-3.4%	Gender	1.1%
		SEN	-4.5%
Ethnicity, language, and immigration	10.0%	Ethnicity	-20.8%
		Language spoken in home	15.7%
		Place of birth	**15.0%**
Family background	*-9.4%*	Parental education	-4.2%
		Tenure	-1.7%
		Family type	-3.5%
School	4.7%	School size	-0.9%
		Percent FSM	1.1%
		Unauthorized absences	*4.5%*
Area	-2.0%	Area deprivation	-2.0%
Agency factors: domain		**Factor**	**%**
Personal aspirations	3.4%	Personal aspirations Year 12	3.0%
		University aspirations	0.4%
Self-belief	**19.2%**	**Expect to get into uni if applied**	**20.2%**
		Self-rated ability in school work	-1.1%
Homework frequency	**13.0%**	**Homework frequency**	**13.0%**
Reading frequency	1.8%	Reading frequency	1.8%
Extracurricular activity	1.4%	Uses school sports facilities outside lessons	-0.6%
		Attends school clubs or societies	2.0%
Truancy	**8.0%**	**Truancy**	**8.0%**
Risky behaviours	**13.7%**	**Risky behaviours**	**13.7%**
Parental aspirations /expectations	**18.9%**	**Parental aspirations Year 12**	**12.4%**
		Parental expectations for university	6.5%
Parental engagement	*6.7%*	*Attends parent-teacher evenings*	*6.7%*
Peer aspirations for Year 12	**9.4%**	**Peer aspirations for Year 12**	**9.4%**

Notes: Bold = statistically significant at p<.05; Italics = borderline significant (p<.01)

Chapter 7 Summary and Discussion

We carried out a number of decomposition analyses examining the London advantage in key stage 4 attainment and school progress during secondary school among disadvantaged pupils. Each analysis provides additional information and gives us a broader picture of the potential causes of the London advantage. Here we attempt to summarize these findings.

Our analyses examined two main groupings of variables – structural factors and agency factors. Structural factors included relatively immutable variables such as the characteristics of the young person, their ethnicity, language, and immigration status, family background, school characteristics and area characteristics. Agency factors were those which may have greater potential for change and included personal and parental aspirations/expectations, self-belief, reading and homework habits, extra-curricular activity, truancy, participation in risky behaviours, parental engagement in their child's education, and peer aspirations. It should, nevertheless, be acknowledged that attitudinal and behavioural traits will be structured according to the child/parent's lived experience and will also be somewhat embedded.

Models were estimated in two stages, first examining the contribution of differences in structural factors alone, and then, in addition, the contribution of agency factors. Using a two staged approach, we can estimate the extent to which the London advantage is attributable to differences in structural characteristics, and then subsequently assess the extent to which their influence is mediated through related differences in aspirations, attitudes and behaviours (including those of parents and peers).

Structural factors

Structural factors which *reduce* the London advantage

Differences in structural factors alone accounted for a moderate part of the London advantage in attainment overall (approximately one third of the difference in both 2015 and 2006). Whilst this was smaller than we might expect, this was partly because some of our measured differences favoured the relative attainment of those living in the rest of England[27]. In 2015, disadvantaged London pupils were far more likely to live in the most disadvantaged areas than pupils in the rest of England and this was associated with

[27] Rest of England as defined here excludes Manchester and Birmingham. Disadvantaged pupils living in these districts have shown a similar attainment advantage relative to those living in the rest of England. If we were to include them with our rest of England sample this would dilute the London advantage we are seeking to explain.

lower pupil attainment. Similarly, in 2006, the parents of disadvantaged London pupils were more likely to have no qualifications, and this was again associated with *lower* pupil attainment. These differences mean the actual London advantage was likely to be smaller than it could have been otherwise, were area level disadvantage (in 2015) or parental expectations (in 2006) the same as they were in the rest of England. Furthermore, these are estimated as negative contributions, which has the effect of reducing the overall London advantage we are able to explain e.g. the contribution of area level disadvantage in 2015 was -18%.

These two factors also illustrate another important fact about the London advantage, which is its changing dynamic over time. Levels of education among disadvantaged London parents improved over time and were no longer a contributing factor to the London advantage by 2015 (negative or otherwise). However, this improvement was seemingly counteracted by an increase in the area level disadvantage London pupils experienced.

Ethnicity, language, and immigration

In terms of the structural factors examined, ethnicity, language, and immigration differences combined, made the largest contribution to the London advantage in attainment (about *one third* of the advantage in 2015). This was especially because of the large differences in ethnic minority composition between London and the rest of England. In 2015, three ethnic minority groups in particular - Bangladeshi, Black African and 'other' pupils - of which there were many more pupils from these backgrounds living in London - achieved higher levels of key stage 4 attainment compared to White pupils. There was evidence to suggest its importance for understanding the London advantage declined over time. In 2006, ethnicity, language, and immigration differences accounted for almost half of the London advantage when structural factors were considered alone. Underlying changes in the contribution of ethnic differences, languages spoken in the home and place of birth are complex, however, requiring further investigation in order to better understand this change.

Adjusting for differences in prior attainment, using key stage 2 test scores, has the effect of changing the nature of the outcome being examined. It switches the focus away from attainment and towards the progress pupils made during secondary school. When we examined progress, the combined contribution of ethnicity, language, and immigration differences increased substantially, accounting for almost half of the London advantage in 2015. This was because the attainment advantage of ethnic minority pupils was predominantly related to their greater progress during secondary school. Ethnic differences in key stage 2 scores (i.e. prior attainment) were much smaller and non-significant.

There is some debate as to whether ethnic minority or immigration status is more important for explaining the London advantage (Blanden et al., 2015; Burgess, 2014; Greaves et al., 2014). Considered together, differences in the ethnic composition of London and the rest of England in 2015 made the largest contribution to the London advantage by far, with a negligible contribution associated with place of birth. There is considerable overlap between the measures of course, but even when separately estimated, the contribution for place of birth remained negligible and non-significant. There is evidence of a changing dynamic over time. Whilst differences in ethnic composition also made the largest contribution to the London advantage in 2006 (by far), the contribution for place of birth was also a little larger, and even more so when considered separately. The contribution of place of birth was also a little larger to the London advantage in school progress at both time points, however it was still one fifth to one quarter of the size of the contribution for ethnicity.

Further research is required to understand the underlying reasons for the changing, contributions over time, which may relate to changing patterns of migration. Nevertheless, in the present study, differences in ethnic minority composition between London and the rest of England were far more important than pupils' migration status for understanding the London advantage for disadvantaged pupils.

Structural factors associated less strongly with the London advantage

Of the three measured factors relating to schools - school size, percentage of pupils eligible for free school meals, and percentage of unauthorised absences - it was only differences in the level of unauthorized absences which made a (small) contribution to the London advantage. There was also a slight increase in its contribution over time, reflecting the fact that London schools saw a larger reduction in levels of truancy.

Other structural factors, which appeared to make no contribution to the London advantage when considered together, include pupil gender, SEN status, housing tenure and family type. Initially, we considered a much large number of factors for inclusion, but excluded factors that did not contribute to the London advantage when separately estimated – these were either not associated with pupil attainment, or their distribution was similar inside and outside London (or both). Factors for which there was a significant level of missing information were also excluded. Details of excluded factors are given in Appendix A and summarized further below.

As we note above, the contribution related to ethnicity, language, and immigration differences increased after we adjusted for prior attainment. The contribution related to differences in area level deprivation, however, halved after adjustment. Assuming most pupils remained living in the same or similar areas between primary and secondary

school, this suggests that differences in area level deprivation also contributed to lower key stage 2 scores among disadvantaged London pupils. Similarly, there was a reduction in contribution of parental education in 2006. Parental education impacts throughout the young person's life course and will also have contributed to differences in pupils' earlier attainment at key stage 2.

We were able to account for a much larger part the London advantage in school progress using structural factors alone (almost three-quarters in 2015 and almost two thirds in 2006). This was partly attributable to the increased contribution for ethnicity, language, and immigration, and decreased (negative) contributions for area level disadvantage in 2015, and parental education in 2006 noted above. But it was also attributable to the contribution of differences in prior attainment itself.

Differences in prior attainment accounted for one fifth of the London advantage in 2015, whereas its contribution had been less than one tenth in 2006. This was because of an increase in differences in prior attainment (Key Stage 2 scores) between disadvantage London pupils and those in the rest of England over time. This finding appears to counter a hypothesis of an earlier study(Greaves et al., 2014). This study suggests that the London advantage was due to advantages gained during primary school, and that a London advantage in key stage 2 attainment predated and was the largest contributing factor to the London advantaged in key stage 4 attainment. Similar results to ours were also evident elsewhere(Blanden et al., 2015).

Agency factors

The relative importance of agency

In a second step we assessed the contribution of a range of agency factors to the London advantage, including differences in disadvantaged pupil's aspirations and expectations, self-belief, and behaviours, as well as those of their parents and peers. By considering these factors in a second step, we were also able to assess their importance in explaining the contribution of structural factors to the London advantage in attainment, already included in our models.

Their inclusion increased the overall London advantage we were able to explain substantially (to two thirds in 2015, and to nine-tenths in 2006). They also entirely accounted for the contribution of ethnicity, language, and immigration differences. This is because those agency factors that were most important for explaining the London advantage were more prevalent among certain ethnic minority groups. Compared to disadvantaged White pupils, disadvantaged Bangladeshi, Black African and 'other' pupils were more likely to have higher aspirations and self-belief, to spend more time doing homework and to have parents with higher expectations and who were more likely to

attend parent-teacher evenings. Once we accounted for these differences, the associated contribution for ethnicity, language, and immigration differences disappeared. There was a notable difference in our findings for the London advantage in school progress. After we included agency factors, a borderline significant contribution for ethnicity, language, and immigration differences to the London advantage in school progress remained. This suggests that their contribution was partly unaccounted for, and therefore attributable to factors not included in our study.

There was no change in the contribution associated with area level disadvantage in 2015, which suggests the effect of living in a disadvantaged area was *not* mediated through the agency factors now included in our model. However, the contribution relating to differences in parental education in 2006 halved.

In 2015, the most important agency factors for understanding the London advantage in attainment, in order of importance, were differences in parental aspirations/expectations, the amount of time pupils spent doing homework, levels of self-belief and a small yet significant contribution for differences in attendance at parent-teacher evenings. There was also a small to moderate contribution for differences in personal aspirations/expectations, which was borderline significant. The parents of disadvantaged London pupils were more likely to expect their child to go to university, and slightly more likely to attend-parent teacher evenings. Disadvantaged London pupils were themselves more likely to aspire to do A levels and apply to university, as well as expect to get into university if they applied. They also spent more time doing homework than their peers in the rest of England. There is good evidence of the beneficial effects of homework for attainment reported elsewhere(Cooper, Robinson, & Patall, 2006), although the extent of its benefits varies depending on its nature, the times it is set, and levels of feedback. There is little evidence that more time spent doing homework is associated with higher attainment, probably because higher attaining pupils are also more efficient, but regularity of homework is important (Trautwein, 2007). In our own study both time and frequency were important predictors of attainment, with an optimal amount being between 6-10 hours per week, and doing homework on most days.

Changes in agency factors over time

Findings relating to agency factors were similar for 2006, suggesting our findings are robust, however there were some important differences also. Differences in the self-belief of disadvantaged London pupils and those in the rest of England were more important for understanding the London advantage in 2006, especially differences in their expectations of getting into university. Differences in expectations between disadvantaged London pupils and those in the rest of England declined over time showing a relative improvement in the confidence of pupils in the rest of England. Whilst

we cannot be certain that the relationship is causal, it is possible this improvement in confidence was associated with the decline in the London advantage over time.

There were also important changes in the contribution of two other factors. Together, differences in truancy and risky behaviours between disadvantaged London pupils and those in the rest of England accounted for a sixth of the London advantage in attainment in 2006. A subsequent decline in levels of truancy and risky behaviours among disadvantaged pupils overall, but especially among those living in the rest of England[28], meant the contribution in 2015 was practically zero. Again, we cannot be certain that the relative decline in levels of truancy and risky behaviours among pupils in the rest of England contributed to the decline in the London advantage. Nevertheless, they accounted for a 7.6-point difference in attainment in 2006, which equates to three-quarters of the decline in the London advantage over time.

When we adjust for differences in prior attainment and assess the London advantage in school progress, we get also some measure of the extent to which the contributions of agency factors described above are a consequence of higher levels of prior attainment in London[29]. After adjustment for KS2 attainment, contributions for parental aspirations/expectations, pupils' own aspirations/expectations, and their self-belief reduced by approximately one half. Higher levels of prior attainment among disadvantaged London pupils therefore appeared to account for a large part of their higher level of self-belief, personal aspirations/expectations and those of their parents also. Differences in parental expectations nevertheless remained significantly important after adjustment for KS2 attainment, suggesting they were more than the simple response to their child's earlier attainment. Despite this finding, we cannot be certain that higher expectations of London parents were driving higher levels of progress. It is also possible that the reverse is true, with parents responding instead to their child's continuing level of progress. What is most likely, is that the relationship is reciprocal, with high parental expectations encouraging good progress and in turn good progress encouraging higher parental expectations(Seginer, 1983).

Reductions in the contributions of behavioural factors after adjusting for prior attainment, which include differences in the time pupils spent doing homework and the attendance of parents at parent-teacher evenings, were much smaller. This suggests that these factors might be less influenced by prior proven ability and are therefore perhaps more pertinent

[28] A relatively larger decline in self-reported truancy among disadvantaged pupils in the rest of England might seem to contradict a relatively smaller decline in school level truancy reported above. However, school level truancy relates to *all* pupils and not just those eligible for free school meals. Nevertheless, it is possible that a disparity between pupil and school recorded truancy also exists.

[29] The reason we only get 'some' measure of the contribution of ability is because the contribution of prior attainment also captures and includes the contribution of all those factors (both structure and agency) that also contributed to a pupil's earlier attainment.

in understanding the London advantage. We should also recognise that the time pupils spend doing homework can be somewhat outside of their control. Similar findings after adjusting for prior attainment were evident for 2006, although the reduction in contributions were far smaller given smaller differences in prior attainment. Overall, we were able to explain most of the London advantage in school progress in 2015 and all of the London advantage in 2006.

The impact of changing our analysis assumptions

It is important to be aware of an underlying assumption in our models. Estimates of the contribution of differences in structural and agency factors between London and the rest of England assume average associations with pupil attainment. In other words, if the distribution of factors in the rest of England were the same as those in London, then we assume that the associations of those factors with pupil attainment would also become similar to London (although not necessarily the same).

An alternative assumption is that these associations would remain the same for pupils in the rest of England. In truth, we cannot be certain how the associations would behave if the distributions of factors in the rest of England were the same as those for London. However, by comparing results under different assumptions we get a better understanding of what *might* happen. Consistent findings are more likely to be robust, whereas a lack of consistency means we should be cautious in our conclusions.

For the most part, results were very consistent under the two assumptions, however there were some notable differences. In 2015, the combined contribution of ethnicity, language, and immigration differences to the London advantage in school progress in 2015 was a little smaller, and the contribution of differences in ethnic composition fractional and no longer significant. In 2006, whilst their combined contribution was very similar, the underlying contributions for ethnic composition, languages spoken in the home, and place of birth were substantially changed. There were large and significant contributions associated with both languages and place of birth, which were the consequence of very large associations with pupil attainment for disadvantaged pupils living in the rest of England in 2006.

It suggests that if levels of immigration in the rest of England were similar in 2006 to those seen in London, but that the association between place of birth and attainment did not change, then average attainment would have been substantially higher. Further investigation using larger samples is needed to understand the reason for this difference, which probably reflects differences in patterns of migration across time and place. It also suggests a need for caution in attributing too much cause to these characteristics, without also recognising that they may be associated with different outcomes depending on where pupils live.

Unimportant factors to the London advantage

Many more factors were considered for analysis than those presented in our models. This is because their contribution to the London advantage when separately estimated was especially small and/or non-significant, or in some cases, the level of missing information too large. This included a broad range of school factors that were non-significant: admissions policy, school type, religious status, whether the school had a sixth form, the pupil to teacher ratio, the percentage of non-White British pupils, and the percentage of statemented pupils. A rudimentary measure of primary school effectiveness (school average KS2 scores adjusted for percentage of FSM eligible pupils) was also assessed and found non-significant.

A far larger number of agency factors were also excluded because their contribution was very small or non-significant. This included measures of the activities that pupils engaged in (frequency of engagement in sport, whether they played a musical instrument, attended a political meeting/march/rally, did community work, went to a youth club, amusement arcade, party/dance/night club, pub/bar, played snooker/darts/pool, hung/messed around near home or in the town centre), their family life (frequency of meals together, frequency of talking about things that mattered with parents, frequency of arguments with parents, the quality of relationship with parents, whether parents knew where they were when out and set a time to be back), the receipt of extra paid for tuition (core and non-core subjects) and their (self-reported) experiences at school, including their relationships with their teachers (whether they liked their teachers, their teachers listened to them, treated them fairly, could keep order, were clear about behaviour, were racist), and their experiences of bulling. Excluded measures asked directly of parents included whether or not they felt engaged with their child's school life, and their involvement with school activities (helping out in class, on trips, in the library, with a special interest, PTA, Governing body, fund raising).

A few factors were also excluded because the level of missing information was too high. These included pupils' attitudes towards school, their work ethic and locus of control. Ideally, we would have liked to include these measures, however our initial exploration found some reasonable overlap with measures already included in the model, such as pupils' aspirations, their self-belief and levels of truancy.

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