Measuring pupil mobility in secondary schools in England

A report to the Campaign for State Education (CASE)

by FFT Education Datalab

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Executive summary

- This study investigates the rates at which pupils joined and left state-funded secondary schools between the 2021/22 and 2022/23 academic years. Comparisons are made between local authority schools, academies, and the subset of academies which were members of large multi-academy trusts.
- Data on around 2.5 million pupils from the National Pupil Database were used, specifically school census data from January 2022 and January 2023.
- Overall, rates of inward and outward pupil mobility were broadly similar in local authority schools and academies. They were slightly higher in academies which belonged to large trusts.
- Rates of outward mobility were higher in mainstream academies which were part of large trusts than in mainstream local authority schools. Some, but not all, of this difference can be explained by differing pupil characteristics.
- Pupils moving to / from an academy in the same large trust was rare (around 5% of leavers / joiners).
- Pupils moving to / from a local authority school in the same local authority was more common (14% of leavers, 12% of joiners).
- Mobility among vulnerable pupils was higher than their peers.
- There was a net inflow of vulnerable pupils into local authority schools (i.e. more joiners than leavers), and a net outflow from academies (i.e. more leavers than joiners). The net outflow of vulnerable pupils was slightly higher in academies which were part of large trusts.

1 Introduction

Pupils move schools for a variety of reasons. Some pupils and their families may choose to change schools due to relocation or to seek a better quality of education, while for others the move may be encouraged by their schools (so-called "off-rolling"). The motivation behind such moves cannot be inferred from data alone.

The overall aim of this research is to explore how rates of pupil mobility vary by school governance. Specifically, to compare the mobility of pupils who attend academies, with those who attend local authority (LA) schools. In addition, we aim to explore how rates of pupil mobility vary among large multi-academy trusts (MATs).

We define pupil mobility as pupil moves from one school to another between January 2022 and January 2023 which were not associated with a standard transition. Examples of standard transitions include moving from Year 6 in a primary school to Year 7 in a secondary school or, more relevant for this paper, from Year 9 in a middle school to Year 10 in a high/secondary school.

We divide pupil mobility into two elements: outward and inward. Outward mobility is defined as pupils who leave their school between the two time points ("leavers"), and inward mobility as pupils who join a school ("joiners"). In both cases, we express mobility in percentage terms using the number of pupils on roll in January 2022 as the denominator.

This research is divided into the following areas:

- A summary of mobility by pupil characteristic, school type and grouping. (Section 3.1)
- The extent to which mobility occurs between schools in the same grouping. (Section 3.2)
- The sources and destinations of pupils who move schools. (Section 3.3)
- A summary of the mobility of vulnerable pupils by school type and grouping. (Section 3.4)
- The extent to which mobility occurs at the same time as relocation. (Section 3.5)
- The difference in mobility between academies and LA schools accounting for a range of pupil and school characteristics (Section 3.6)

2 Data and methodology

2.1 Defining the population of interest, and identifying "leavers" and "joiners"

We begin by producing two tables of pupil-level data from Spring school census records: pupils enrolled in Year 7, 8, 9 or 10 in January 2022 and those enrolled in Year 8, 9, 10 or 11 in January 2023. We apply the following restrictions:

- Pupils must have an enrolment status of "Current" or "Main".
- Pupils must have been on-roll at the time of the census.
- For the small number of pupils with more than one census record meeting both of the above restrictions, we choose the record with the earliest date of entry.

We then match pupils' records between the two census points, and compare the school they were enrolled at in each (if any).

Pupils are marked as "leavers" if they have a record in Spring 2022 and:

1. Have no matched record in Spring 2023
2. Have a matched record at a different school in Spring 2023, as long as the school move is not classed as a standard transition, i.e.:
    a. The school they left still exists in Spring 2023
    b. They weren't in the highest year group of their 2022 school
    c. They weren't in the lowest year group of their 2023 school

Pupils are marked as "joiners" if they have a record in Spring 2023 and:

1. Have no matched record in Spring 2022
2. Have a matched record at a different school in Spring 2022, as long as the school move is not classed as a standard transition, i.e.:
    a. The school they joined also existed in Spring 2022
    b. They weren't in the lowest year group of their 2023 school
    c. They weren't in the highest year group of their 2022 school

Some schools may have changed their identifiers between the two time points. Throughout our analysis, we link all identifiers associated with the same school together so that they can be correctly identified as the same school across all datasets.

Overall, we identify 2,530,615 pupils enrolled in Years 7-10 in January 2022, 114,128 pupils who left a school between January 2022 and January 2023, and 117,269 pupils who joined.

We identify the following limitations of our approach:

- We don't count any pupil moves which occurred between the two census points. This means:
    a. We miss pupils leaving then re-joining the same school
    b. We miss some pupils making non-standard transitions by incorrectly classifying them as standard transitions (e.g. a pupil leaving their middle school earlier than the end of the year)
- We miss some pupils who moved into Key Stage 4 only secondary schools as part of a non-standard transition (e.g. pupils who moved from Year 9 in an 11-16 secondary school into Year 10 of a 14-16 secondary school)
- A small number of pupils in Years 7-10 in January 2022 remained on roll in January 2023 but in a year group other than Years 8-11. These pupils will be counted incorrectly as leavers.
- National curriculum year groups are sometimes recorded incorrectly.
- The small number of pupils who left a school which existed in 2022 and 2023 to join a school which existed only in 2023 are counted as leavers but not as joiners.
- Similarly, the small number of pupils who left a school which existed only in 2022 to join a school which existed in 2022 and 2023 are counted as joiners but not as leavers.

2.2 School characteristics

We analyse pupil mobility by school-level characteristics. We also use school-level characteristics when considering the sources of joiners and destinations of leavers.

However, some schools changed their characteristics between 2021/22 and 2022/23. We solve this by using schools' information as recorded at the end of 2022/23 for both years.

This means that, for example, pupils who moved from a LA school which became an academy to an academy between 2022 and 2023 will be classified as having moved from an academy to an academy, when, in fact, they moved from a LA school to an academy.

We estimate that there were 70 schools which changed governance between January 2022 and January 2023. Around 33,900 pupils were enrolled in these schools in January 2022 – around 1.3% of all pupils.

Where we report mobility figures for individual MATs, we include all schools which belonged to that MAT at the end of 2022/23.

2.2.1 Academies vs LA schools, and mainstream schools vs other

Academy and LA schools are defined as follows:

- Academy schools: sponsored and converter academies of all types, free schools of all types, university technical colleges (UTCs), studio schools, and city technology colleges.
- LA schools: community schools of all types, voluntary-aided (VA) and voluntary-controlled (VC) schools, foundation schools of all types, pupil referral units (PRUs), and non-maintained special schools[1].

We also categorise schools by whether or not they are considered "mainstream". We use this label to mean any state-funded school which is neither a special nor an alternative provision (AP) school (including PRUs).

A detailed list of school types included in this study and their categorisations can be found in Table A.0-1 in the appendix.

We present figures separately for all academy schools, and the subset of academies which were members of big multi-academy trusts (MATs). We define a "big MAT" as one with at least ten mainstream schools.

2.2.2 Numbers of schools in groupings

Where we produce output by MAT and by LA, we only publish figures for groupings with at least a certain number of schools. These thresholds are:

- MATs: at least ten mainstream schools (hereafter referred to as "large MATs").

[1] Non-maintained special schools, although funded by local authorities, are not governed by them. We acknowledge that their inclusion in the "local authority schools" category is not wholly consistent. However, we note that only 0.3% of pupils in this study who were enrolled at "local authority schools" were enrolled at a non-maintained special school. Their inclusion, therefore, has negligible impact on our results.

- Local authorities split by LA schools vs academies: at least five mainstream academies and at least five mainstream LA schools.

2.3 Identifying moves which occur between schools in the same group

In section 3.2 we split inward and outward pupil mobility into a component which occurs between schools in the same grouping (for example, between two schools in the same MAT) and a component which does not.

In a small number of cases outlined in section 2.1, pupils may be counted as leavers but not joiners, and others as joiners but not leavers. Where we observe this, we do not count these pupils as having moved within a group of schools, even if their sources / destinations indicate that they have.

This is necessary because the small differences between the numbers of pupils who leave for a school in the same group and the numbers of pupils who join from a school in the same group would otherwise be disclosive.

2.4 Other definitions

2.4.1 Sources and destinations of joiners and leavers

Section 3.3 summarises the sources of pupils who joined a school between January 2022 and January 2023 and the destinations of pupils who left.

Where a joiner has no source, i.e. they have no January 2022 census record, we classify them either as "new entrants" or "returners". A new entrant has no record in school census between Autumn 2012 and Autumn 2022, and no record in the LA AP census between 2012 and 2023. That is, they have never been observed in a state-funded school or in LA AP. On the other hand, a returner has at least one such census record.

2.4.2 Vulnerable pupils

Section 3.4 summarises inward and outward mobility for the sub-population of pupils classed as "vulnerable". A pupil is considered vulnerable if they meet one or more of the following criteria:

1. Had an education, health and care plan (EHCP) in January 2023
2. Ever had an identified special educational need (SEN) with a primary or secondary SEN type of "Social, Emotional and Mental Health needs" (SEMH)
3. Had ever been permanently excluded from school (up to the end of Autumn Term 2021/22)
4. Missed five or more days due to suspension in Autumn Term 2021/22
5. Were ever eligible for free school meals (FSM)

2.4.3 Relocation

In section 3.5 we explore the extent to which school moves are related to pupils relocating. We define relocation as a pupil's home postcode having changed to one at least 20km away (as the crow flies) between January 2022 and January 2023. Around 75% of pupils who moved at least 20km between the two census points also moved schools.

We are unable to explore this for leavers with no known destination and joiners with no known source as, by definition, we do not have data for these pupils at both census points.

Some pupils for whom we do have data at both census points do not have valid postcodes in both years. We estimate this to affect around 7% of pupils.

2.5 Predicting outward mobility of pupils in mainstream schools

In the final part of this analysis, section 3.6, we compare observed rates of outward mobility from mainstream academies with predicted rates of outward mobility based on pupils in LA schools.

To obtain the predictions we perform a logistic regression on the population of pupils who were enrolled at a mainstream LA school in January 2022. We use a binary variable indicating whether the pupil left their school as the dependent variable, and the following as independent variables (where all pupil-level variables are measured as at January 2022 unless otherwise stated):

- Gender
- Ethnicity
- First language (English/other)
- Academic age
- % terms FSM
- % terms SEN (either support or with an EHCP)
- Had an EHCP
- Ever had SEMH
- Ever permanently excluded (up to end of Autumn Term 2021/22)
- Number of days suspended in Autumn Term of 2021/2022
- % ever FSM pupils in Years 7-10 of the school attended
- IDACI ranking of home postcode
- Prior attainment, four categories of high / medium / low / no data. Categories based on the top, middle and bottom third of scores in a particular test year based on:
    - Average scaled scores in reading and maths at Key Stage 2, for those who took Key Stage 2 tests in 2018 or 2019 (tests cancelled in 2020 and 2021 due to Covid)
    - Average teacher assessments in reading and maths at Key Stage 1[2] for cohorts whose Key Stage 2 tests were cancelled due to Covid
- Prior attainment interacted with academic age
- Ofsted rating in December 2021

We use the results of this regression to assign each pupil enrolled in a mainstream academy in January 2022 a probability of having left their school by January 2023.

The difference between the average observed and predicted probabilities shows how much more or less likely pupils in mainstream academies were to leave their school compared with similar pupils in mainstream LA schools.

[2] Points scores are assigned as follows: BLW 3pts, PKF 4pts, WTS 6pts, EXS 8pts, GDS 10pts

The coefficients from the regression can be found in Table A.6-3 of the appendix, expressed as marginal probabilities at population means. A summary of the independent variables by school governance can be found in Table A.6-2.

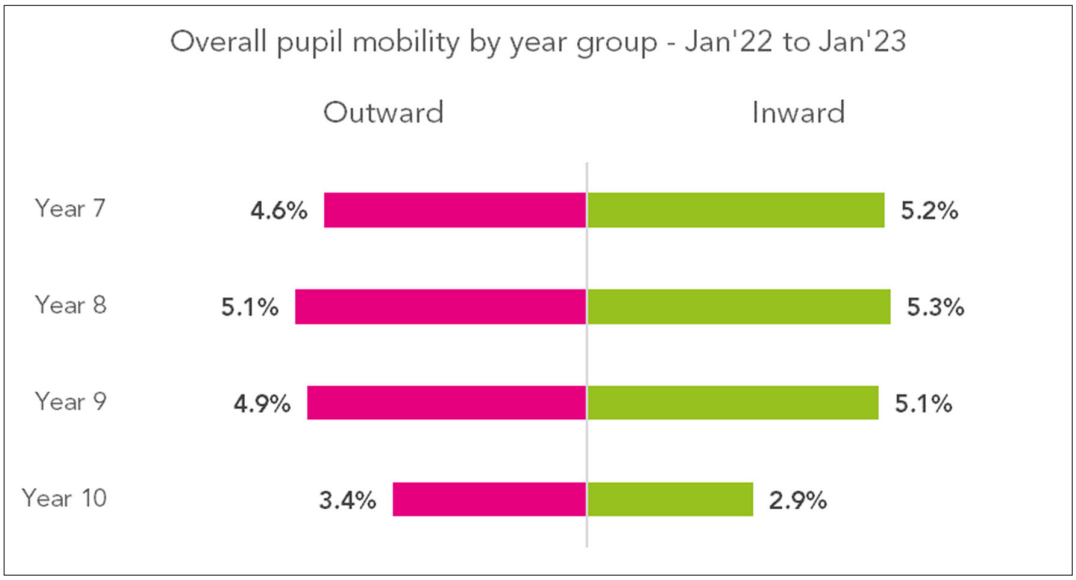
3 Results

3.1 Overall levels of inward and outward mobility

3.1.1 Rates by year group

Overall, slightly more pupils joined a school (117k pupils, 4.6%) between January 2022 and January 2023 than left (114k pupils, 4.5%). The variation by year group is shown in Figure 3-1, below.

Figure 3-1: Inward and outward pupil mobility by year group



Note: pupil mobility is expressed as a percentage of the population observed in January 2022

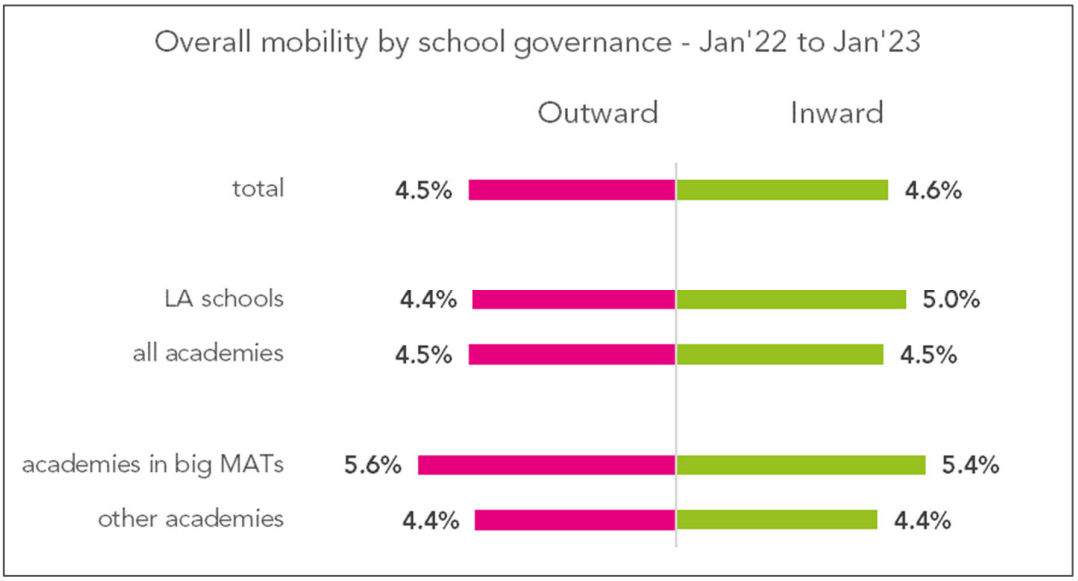
All year groups had a net inflow of pupils (i.e. more joiners than leavers) apart from Year 10, which had a net outflow. The highest rates of mobility were observed among Year 8 pupils, and the lowest among Year 10 pupils.

3.1.2 Rates by school governance

In Figure 3-2, overleaf, we plot rates of inward and outward mobility separately for academies and LA schools. We additionally show the overall mobility for the subset of academies which were members of large MATs.

Academies had similar levels of outward mobility to LA schools, but slightly lower levels of inward mobility. Academies which were part of big MATs had higher levels of both inward and outward mobility than the other academies. They also had higher levels of mobility than LA schools.

Figure 3-2: Inward and outward pupil mobility by school governance



Note: pupil mobility is expressed as a percentage of the population observed in January 2022

3.1.3 Other breakdowns

Breakdowns of pupil mobility by gender and ethnicity, as well as by school type and region can be found in Tables A.1-1 and A.1-2 in the appendix. From this, we see the following

- Pupil mobility varied substantially by ethnic background. The highest rates were among Chinese pupils (3,020 joiners, 22.2% inward), followed by White Irish Traveller pupils (226 leavers, 18.7% outward) and White Gypsy/Roma pupils (1,136 leavers, 15.8% outward). The lowest rates were among Bangladeshi, White British and Mixed White and Asian pupils.
- AP schools had extremely high rates of inward mobility (5,611 joiners, 112%), and very high rates of outward mobility (1,310 leavers, 26%). This is not surprising, as placement of pupils in AP schools is often temporary.

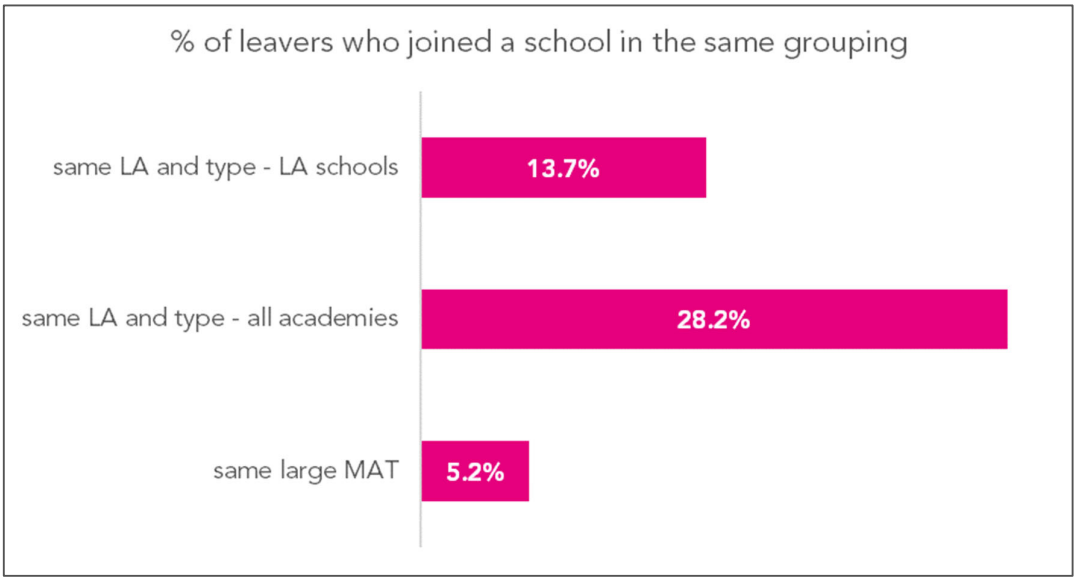
We also provide breakdowns by LA, by large MAT, and by LA for academies and LA schools separately.

3.2 Mobility between schools in the same grouping

We now explore the extent to which pupils who join and leave schools do so from and to schools in the same grouping.

In the chart below we show the percentage of leavers who went on to join a school of the same type in the same LA. We also show the percentage of leavers in large MATs who went on to join a school in the same MAT.

Figure 3-3: The proportion of leavers with a destination school in the same grouping

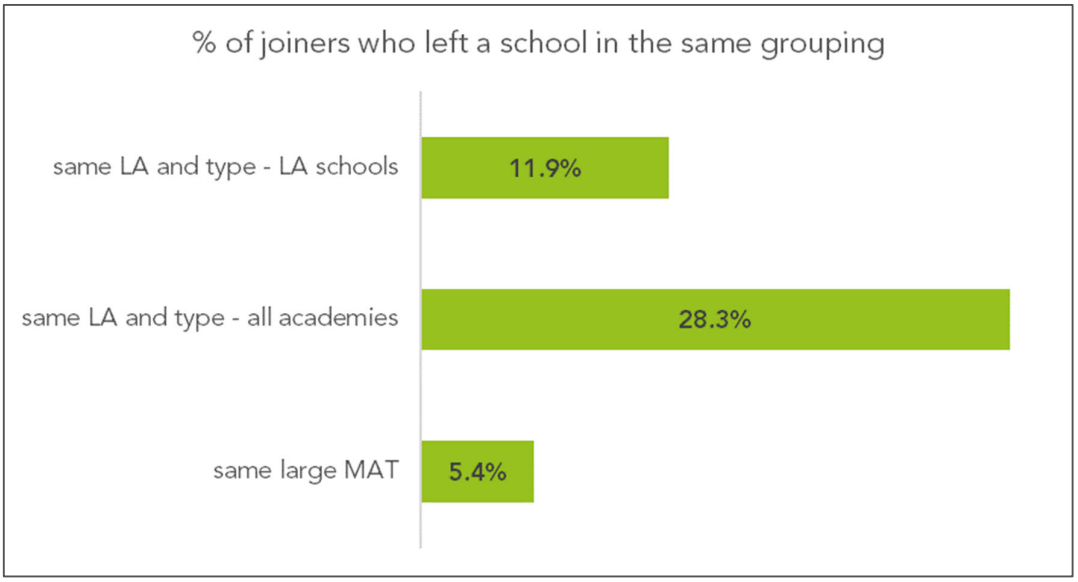


Overall, the percentage of leavers who left to a school of the same type and in the same LA was higher in academies than in LA schools. However, it's hard to draw conclusions from this because there are more academies than there are LA schools (72% of schools attended by pupils in January 2022 were academies).

Only 5% of pupils who left a school in a large MAT went on to join a school in the same MAT.

For completeness, we show the same chart for joiners, below. The results are similar.

Figure 3-4: The proportion of joiners with a source school in the same grouping



Breakdowns for individual MATs and for LAs are provided in Table A.2-1 and A.2-2 in the appendix.

3.3 Sources and destinations of pupils who moved schools

Table A.3-1 in the appendix shows a detailed breakdown of sources and destinations of joiners and leavers. Data is shown separately for LA schools, all academies, and the subset of academies which were members of large MATs.

Destinations of leavers were broadly similar across the different school types, though leavers from LA schools were slightly more likely to go to AP or special schools than leavers from academies.

Joiners to LA schools were more likely to come from special and AP schools than joiners to academies. Schools in big MATs were less likely than academies generally to see joiners from AP or special schools.

We provide breakdowns by LA, by LA for academies and LA schools separately, and for individual large MATs in Tables A.3-2 to A.3-4 in the appendix. We group sources and destinations into broader categories in these tables due to the small numbers of pupils involved.

3.4 Mobility of vulnerable pupils

Below we compare the rates of inward and outward mobility among vulnerable pupils and other pupils by school governance.

Table 3-1: Summary of mobility of vulnerable pupils by school grouping

				school grouping			
			total	LA schools	all academies	academies in big MATs	other academies
	n schools	total	**4,536**	1,274	3,262	469	2,793
		mainstream	**3,401**	650	2,751	444	2,307
vulnerable pupils	n pupils	base popn	**997,397**	220,293	777,104	148,854	628,250
		joiners	**60,136**	14,721	45,415	8,663	36,752
		leavers	**67,820**	13,625	54,195	11,281	42,914
	mobility	inward	**6.0%**	6.7%	5.8%	5.8%	5.8%
		outward	**6.8%**	6.2%	7.0%	7.6%	6.8%
		inward-outward	**-0.8%**	+0.5%	-1.1%	-1.8%	-1.0%
other pupils	n pupils	base popn	**1,533,218**	295,951	1,237,267	158,045	1,079,222
		joiners	**57,133**	11,221	45,912	8,039	37,873
		leavers	**46,290**	8,977	37,313	5,947	31,366
	mobility	inward	**3.7%**	3.8%	3.7%	5.1%	3.5%
		outward	**3.0%**	3.0%	3.0%	3.8%	2.9%
		inward-outward	**+0.7%**	+0.8%	+0.7%	+1.3%	+0.6%

Outward mobility of vulnerable pupils was higher in academies than in LA schools. It was higher still among the subset of academies which were members of large MATs. Inward mobility of vulnerable pupils was lower in academies than LA schools.

This meant that while in LA schools there was a net inflow of vulnerable pupils, in academies there was a net outflow. The net outflow was bigger in academies which were

part of large MATs. In comparison, in both LA schools and academies there was a net inflow of other, "non-vulnerable" pupils. The net inflow of such pupils was highest in academies which were members of large MATs.

Breakdowns by LA, by LA for academies and LA schools separately, and for individual large MATs can be found in Tables A.4-1 to A.4-3 in the appendix.

3.5 Mobility and relocation

Below, we show the proportion of leavers and joiners where moves appear to have happened at the same time as a relocation.

Table 3-2: Proportion of pupil moves associated with a relocation by school grouping

			school grouping			
		total	LA schools	all academies	academies in big MATs	other academies
n schools	total	**4,536**	1,274	3,262	469	2,793
	mainstr	**3,401**	650	2,751	444	2,307
n pupils	base pop	**2,530,615**	516,244	2,014,371	306,899	1,707,472
	joiners	**117,269**	25,942	91,327	16,702	74,625
	leavers	**114,128**	22,615	91,513	17,228	74,285
mobility	inward	**4.6%**	5.0%	4.5%	5.4%	4.4%
	outward	**4.5%**	4.4%	4.5%	5.6%	4.4%
	inward - outward	**+0.1%**	+0.6%	0.0%	-0.2%	0.0%
n pupils relocated	joiners	**14,268**	2,694	11,574	2,203	9,371
	leavers	**14,273**	2,875	11,398	2,128	9,270
% pupils relocated	joiners	**12.2%**	10.4%	12.7%	13.2%	12.6%
	leavers	**12.5%**	12.7%	12.5%	12.4%	12.5%

Overall, a relatively small proportion of pupil mobility appears to be associated with a relocation. The proportion of leavers who relocated is similar in LA schools and academies. The proportion of joiners who relocated is slightly higher in academies than in LA schools.

Breakdowns by LA, by LA for academies and LA schools separately, and for individual large MATs can be found in Tables A.5-1 to A.5-3 in the appendix.

3.6 Actual vs predicted pupil mobility in academies

Finally, we compare the proportion of pupils who left mainstream academies with the proportion predicted by a logistic regression model.

The predicted rates are based on pupils with the same characteristics as those in academies, but who were enrolled in mainstream LA schools. (See section 2.5 for the full list of characteristics included).

Thus, the difference between the observed and predicted proportions shows how much more or less likely pupils in mainstream academies were to leave their school compared with those in mainstream LA schools.

The results are shown in Table 3-3, overleaf.

Table 3-3: Actual vs predicted outward pupil mobility for pupils in mainstream academies

			outward mobility			
school type	base popn	n leavers actual	actual	predicted	actual - predicted (%pts)	actual - predicted (%)
LA schools	480,230	20,640	4.3%	-	-	-
all academies	1,942,821	87,345	4.5%	4.3%	+0.2%pts	+5.7%
academies in big MATs	296,071	16,697	5.6%	5.0%	+0.6%pts	+12.9%

The predicted outward mobility rate for pupils in mainstream academies is the same as the observed rate in mainstream LA schools. This means that, on average, pupils in academies had similar characteristics to those in LA schools.

However, those in the subset of academies which were members of big MATs have higher predicted mobility. This means that, on average, pupils in big MATs had characteristics associated with a greater likelihood of leaving their schools than those in LA schools. For example, around 44% of pupils in big MATs had been eligible for FSM at some point in their school careers compared with 36% of those in LA schools.

The observed outward mobility among pupils in academies is similar to that predicted by the model. Therefore, the proportion of pupils who left academies is broadly in line with what we'd expect, given their characteristics.

The observed outward mobility among pupils in big MATs is slightly higher than we'd expect, given their characteristics.

There is considerable variation between individual large MATs, as can be seen in Table A.6-1 of the appendix.

4 Acknowledgements

This work contains statistical data from the Office for National Statistics (ONS) which is Crown Copyright (*Department of Education, released 6 February 2024, ONS Secure Research Service, dataset, Bespoke National Pupil Database extract*).

The use of the ONS statistical data in this work does not imply the endorsement of the ONS or other data owners in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

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