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The geodemographics of access and participation in Geography

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Geography is not a compulsory subject of study beyond the age of 14 in English schools and this has had an impact on both absolute and relative participation rates over recent years. Geodemographic analysis reveals that pupils domiciled within more affluent and less ethnically diverse areas record the highest rates of participation and attainment in GCSE Geography, and that the stratified patterns of participation have increased between 2005 and 2009. Within this period, those schools that have stopped supplying successful GCSE Geography entries by 2009 were found to have overall low aggregate attainment and to draw pupils from more deprived areas. The profile of schools visited by the Royal Geographical Society (with the Institute of British Geographers) (RGS-IBG) Ambassador Scheme was also considered to assess the extent that the schools visited are representative of pupils who are most at risk of non-participation.

KEY WORDS: Geography, participation, widening access, geodemographics

Introduction

Concerns have been raised for some time that the numbers of pupils attaining Geography qualifications in English schools have been in decline (Walford 2001), and that these patterns of participation have both a social and geographical dimension (Weeden and Lambert 2010). Between 2005 and 2009, relative participation in GCSE Geography fell from 27.5% to 24.8%, with absolute numbers declining 9.5%. Unlike core curriculum subjects such as Mathematics, Science or English, Geography is not a compulsory subject beyond the age of 14 (Winter 2011). As such, schools may instead opt to teach other subjects that they feel are more applicable or relevant to their respective student cohorts, or perhaps are seen to enhance performance against key national indicators (Wiggins and Tymms 2002; Wolf 2011). The participation problem exhibited within Geography is not unique, and indeed, this issue has also been replicated in other non-statutory disciplines such as History and Modern Languages. Expanding on previous analysis in this area (Weeden and Lambert 2010), this paper utilises time series data to unpack the supply and demand for Geography across educational stages, making specific commentary on socio-spatial patterns of inequality and their change over time. The paper concludes by evaluating the profile of those schools visited by the RGS-IBG Ambassador Scheme within a context of widening access.

The analysis presented in this paper integrates a range of educational datasets including the National Pupil Database (NPD), which records pupil characteristics and participation activities in the English school system, and Information Authority data on study within the Further Education sector. The NPD is maintained by the Department for Education (DfE) and records the educational history of pupils in England, alongside a variety of characteristics about pupils such as their gender, ethnicity, domicile, schools attended, subjects chosen, and finally, attainment achieved in national tests. However, a caveat is that those pupils who have never attended a state school have missing demographic information (including domicile), because these data are integrated into the NPD under a separate survey conducted within the state school sector. For academic researchers, depersonalised extracts of the NPD have been made available under strict disclosure agreements designed to prevent potential identification of individuals. The availability of these data have been hugely informative to researchers for a variety of investigations into subject choice (Noyes 2009; Gorard and See 2008), school admissions (Allen and West 2009; Hamnett and Butler 2011), ethnic segregation (Mateos *et al*. 2009), catchment area modelling (Harris and Johnston 2008; Singleton *et al*. 2011), widening participation (Singleton 2010b) and housing markets (Gibbons *et al*. 2009).

Supplementary to the core educational data, a geodemographic classification has been appended to each record at unit postcode level and provides additional descriptive information about the types of areas from which the pupils were drawn. Geodemographic classifications are categorical measures created through computer clustering algorithms that form groupings of similarity from a composite of data about small geographical areas; and in the UK, these are typically Census Output Areas or Unit Postcodes. The output clusters are ascribed labels and descriptions; and are often organised into a hierarchical tree structure comprising larger to smaller nested groups. The ACORN geodemographic classification from CACI Ltd was used in this paper and has three nested hierarchical levels of 56 types, 17 groups and 5 categories. Although geodemographics has its opponents (Goss and Pickles 1995; Twigg *et al*. 2000), it has also been demonstrated as an effective tool for exploring socio-spatial patterns contained within large datasets (Singleton 2010a; Brunsdon *et al*. 2011), and as a technique, has an extensive lineage in public sector applications (Longley 2005). Specific examples in educational research have included analysing participation in Higher Education (Batey *et al*. 1999; Singleton and Longley 2009), school choice (Butler *et al*. 2007; Harris *et al*. 2007) and school attainment (Webber and Butler 2007).

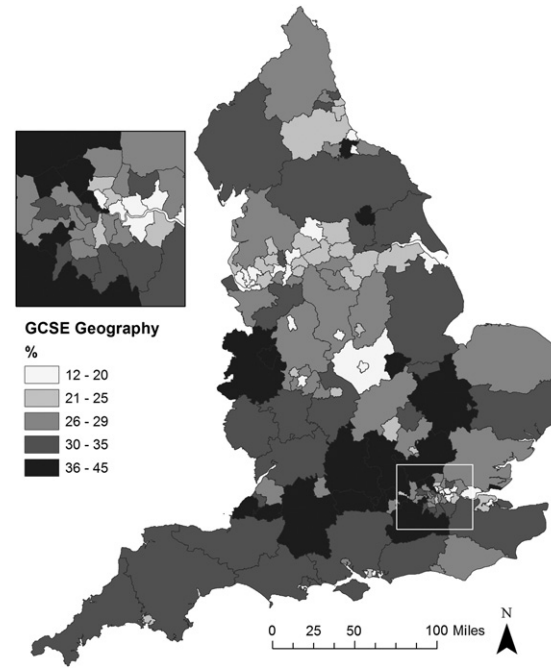

Figure 1 Percentage of pupils obtaining a grade in GCSE Geography in 2009 by local authority

Who and where are the Geographers?

The English school system is divided into progressive key stages (KS) that relate to a series of knowledge expectations attained by the end of specific school years. In this paper KS4 and KS5 are of interest, where KS4 relates to school years 10 to 11 (pupils 14–16 years old) and culminates in national assessment tests referred to as GCSEs. KS5 relates to school years 12 and 13 (pupils 16–18 years old), is post compulsory, and typically ends with A-level exams or their equivalent. The data available for this paper represent final year students who are taking GCSE or A-level examinations.

In 2009, 167 924 pupils attained a grade in GCSE Geography in England (A*–G); however, this participation has been shown previously to be spatially heterogeneous across both schools (Ofsted 2011) and by local authorities (Weeden and Lambert 2010). The percentage of pupils obtaining a GCSE in Geography relative to all pupils within the English schools system was derived and mapped at local authority level (see Figure 1). There are visible differences across the regions of England, which indicate a broad trend for higher rates of participation to occur outside of dominantly urban areas. However, in large urban conurbations such as London (see inset map of Figure 1), there are more complex participation patterns, with boroughs to the East demonstrating lower rates. This regional variation provides an initial filter for those students who may be qualified to later pursue geographical studies at a higher level.

These national patterns were disaggregated into the ACORN geodemographic typology that was appended to the student records. It should be noted that the geodemographic analysis in this paper only includes those students who attended state schools, given that independent school pupil records predominantly lack domicile postcodes. As noted earlier, this relates to different data collection mechanisms and requirements existing between the state and independent school sectors. This analysis gives an indication of the characteristics of those areas *over* or *under* supplying geographers at GCSE-level relative to the national distribution of pupils taking GCSEs (see Figure 2). The calculations are at the ACORN group level; however, categories are also provided as numbered references attached to the group names. The descriptive labels presented are those that accompany the classification, and are provided by CACI Ltd. Figure 2 illustrates a series of index scores (mid vertical line between the two grey bars) that are calculated for each ACORN group by comparing the percentage of pupils with a target characteristic (e.g. a pass in GCSE Geography) with the overall percentage of all pupils at the end of KS4. To ease interpretation, ratios are then multiplied by 100. As such, a score of 100 equates to the national average, whereas a score of 200 indicates that pupils living within areas defined

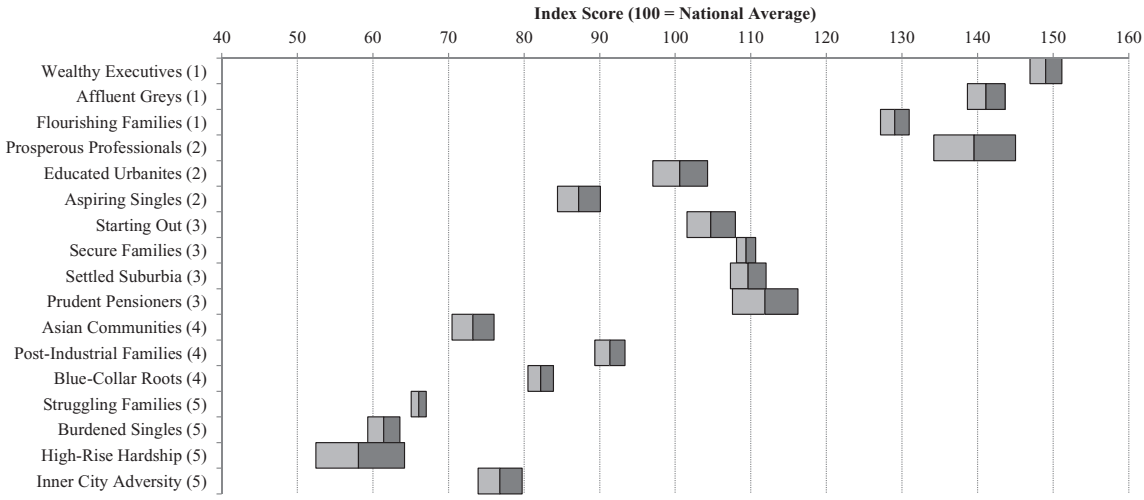

Figure 2 ACORN group profile for 2009 successful GCSE completion by state school geographers
Note: Categories are given after the group names: (1) Wealthy Achievers; (2) Urban Prosperity; (3) Comfortably Off; (4) Moderate Means; (5) Hard Pressed

by the geodemographic group are participating at a rate that is twice the national average; and a score of 50, a rate that is half. In addition to index scores, a set of upper (dark grey box) and lower (light grey box) bounds 95% confidence intervals were calculated utilising Byar's Approximation (Rothman 2002), thus giving a visual indicator of the robustness of the index score statistics.

This analysis indicates that those students obtaining a GCSE in Geography (pass grade A*–G) achieve the highest rates in the more affluent areas ('Wealthy Achievers') with participation around one and a half times the national average. Of those areas classified in the category 'Urban Prosperity' there were some differences in participation rate at the group level. For example, 'Prosperous Professionals' also had participation around one and half times the national average; however, other groups within this category had participation around or marginally lower than the national average. The category containing groups with the lowest participation rates was 'Hard Pressed', representing many of the most deprived areas of inner cities and towns. These analyses are expanded in Table 1 and provide comparison between those obtaining a pass (A*–G) and those students attaining either an A*–C grade, which is a typical threshold specified for later progression into the subject at A-level (although not a requirement), and additionally, those who fail to obtain any grade (U grade). The A*–C analysis portrays a similar pattern to the pass grades, but with increased bias towards more affluent areas. However, an inverse and stronger pattern is demonstrated for those who study Geography but fail to attain a grade. The stratification of attainment between geodemographic clusters will influence the profile of potential pupils who may be deemed by schools and colleges as eligible to study Geography at A-level, given that a common entry requirement is an A*–C at GCSE.

Table 1 ACORN group profile for 2009 state school pupils attaining a GCSE Geography pass, an A*–C grade and a failure (U grade)

	Index scores		
ACORN group	Pass	A*–C	U grade
Wealthy Executives (1)	149	186	42
Affluent Greys (1)	141	163	51
Flourishing Families (1)	129	147	56
Prosperous Professionals (2)	140	175	41
Educated Urbanites (2)	101	101	104
Aspiring Singles (2)	87	77	135
Starting Out (3)	105	105	98
Secure Families (3)	109	111	88
Settled Suburbia (3)	110	111	83
Prudent Pensioners (3)	112	119	82
Asian Communities (4)	73	58	157
Post-Industrial Families (4)	91	81	111
Blue-Collar Roots (4)	82	70	131
Struggling Families (5)	66	45	150
Burdened Singles (5)	61	43	145
High-Rise Hardship (5)	58	39	184
Inner-City Adversity (5)	77	59	190

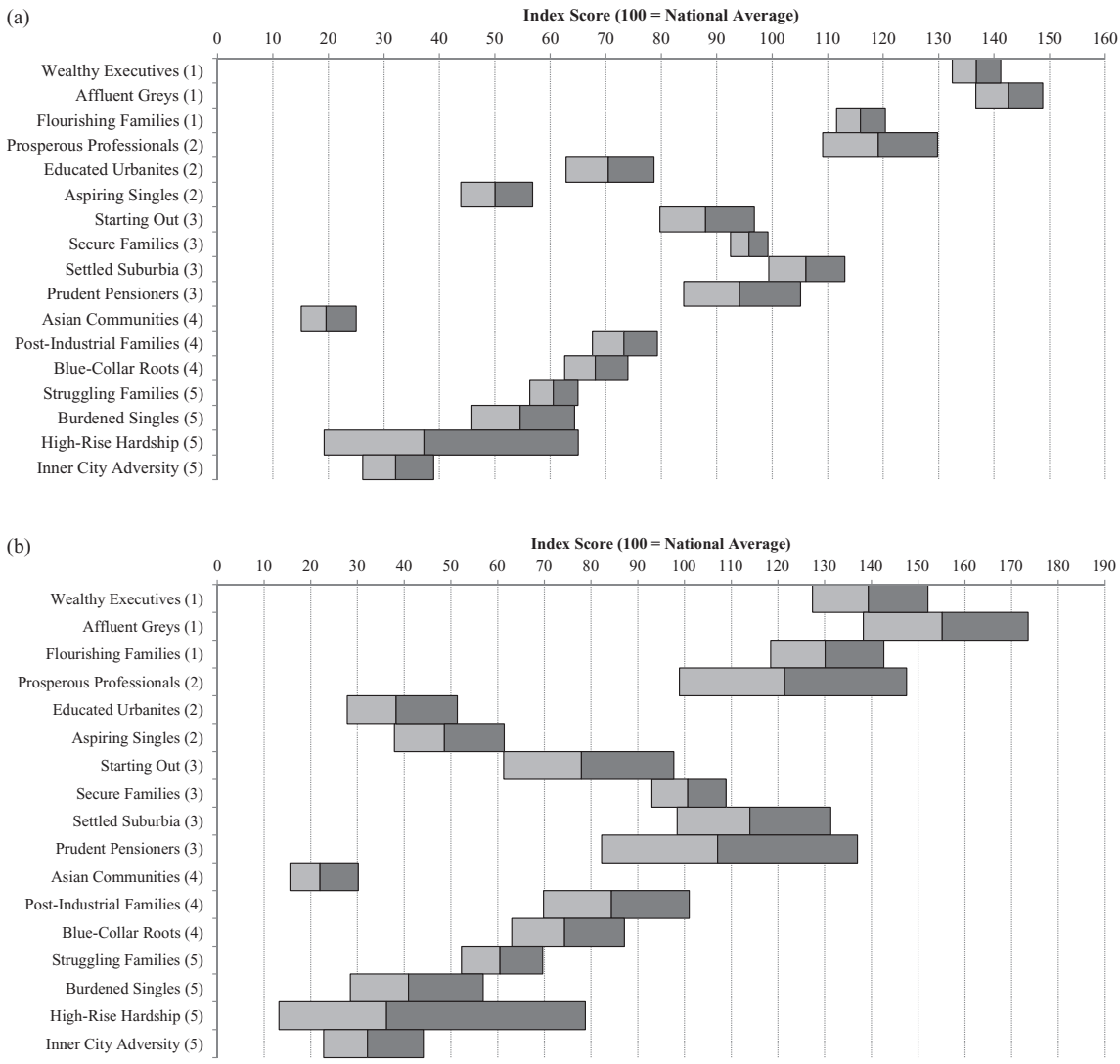

Figure 3 ACORN group profile for 2009 state school (a) and Further Education college (b) pupils attaining A-Levels in Geography

Notes: Categories are given after the Group names: (1) Wealthy Achievers; (2) Urban Prosperity; (3) Comfortably Off; (4) Moderate Means; (5) Hard Pressed. Data on Further Education colleges collected separately by the Information Authority

Multiple processes may influence these patterns, including parent/pupil school choices and other externalities such as variable curriculum availability between schools. For example, parents may choose a specific secondary school for their child on the basis of subject availability; or, given the spatial constraints integral to many secondary school admissions criteria (Singleton *et al*. 2011), pupils living within proximity to schools not offering Geography would by default be less likely to gain access to this particular subject. This said, rarely would parents only have a single choice of school, and indeed, there may be permeability between schools where subjects are offered off site that cannot be resourced internally.

As one might expect given the GCSE profile, KS5 (A-level) geodemographic patterns are also similar to KS4 (see Figure 3); however, due to the smaller sample size of KS5 relative to KS4, the confidence intervals are a little wider.

These analyses have demonstrate differential patterns of supply of qualified geographers through

the pre-Higher Education system that are stratified both regionally, with the North West, parts of the Midlands and East London faring worse; and by geodemographic cluster, with those more deprived and ethnically diverse areas exhibiting lower rates of participation. Given that most Geography courses at Higher Education level require a prior qualification in the subject, the supply of available geographers into Higher Education will therefore be spatially heterogeneous, creating variable issues for both widening access and increasing participation depending on where the institution is located.

Changing regional and local GCSE Geography participation

A regional driver of participation rates in pre-Higher Education Geography is the heterogeneous provision of the subject between schools, which as described earlier is enabled by the non-compulsory position of the subject within the English school curriculum. The following analysis examines the extent to which the spatial patterns of students attaining a GCSE in Geography have changed between 2005 and 2009. These temporal trends are summarised for a limited selection of local authorities in Table 2 and mapped fully in

Table 2 Top and bottom 15 local authorities sorted by increase or fall in the percentage share of students attaining GCSE Geography between 2005 and 2009

	2005			2009			2005–2009		
	Pupils	Geography		Pupils	Geography		Change		Share
Local authority	N	N	%	N	N	%	%	N	%
Hammersmith and Fulham	1143	411	36.0	1051	229	21.8	–28.4	–69	–14.2
Portsmouth	1989	583	29.3	1994	375	18.8	–31.6	–90	–10.5
Thurrock	1648	407	24.7	1872	271	14.5	–42.8	–98	–10.2
Suffolk	7796	2843	36.5	7772	2085	26.8	–27.1	–475	–9.6
Northumberland	3695	1223	33.1	3800	922	24.3	–17.5	–135	–8.8
Rutland	452	206	45.6	474	175	36.9	–16.2	–24	–8.7
Blackburn with Darwen	1826	459	25.1	1803	308	17.1	–32.9	–74	–8.1
Stoke-on-Trent	2900	711	24.5	2720	448	16.5	–33.9	–122	–8.0
Derby	2887	669	23.2	2862	433	15.1	–30.7	–126	–8.0
Knowsley	1952	327	16.8	1645	152	9.2	–49.6	–60	–7.5
Dudley	4069	1328	32.6	3965	999	25.2	–13.7	–100	–7.4
Plymouth	3128	917	29.3	2966	650	21.9	–26.4	–158	–7.4
Bexley	3249	912	28.1	3187	661	20.7	–15.5	–90	–7.3
Bury	2331	833	35.7	2221	632	28.5	–17.2	–92	–7.3
Barking and Dagenham	1943	521	26.8	2044	401	19.6	1.8	4	–7.2
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Slough	1425	282	19.8	1488	333	22.4	28.0	52	2.6
Redbridge	2966	776	26.2	3241	935	28.8	25.9	142	2.7
Haringey	2070	353	17.1	2160	428	19.8	64.5	98	2.8
Croydon	3706	934	25.2	3651	1021	28.0	14.7	88	2.8
Lewisham	2198	450	20.5	2136	502	23.5	16.1	40	3.0
Gateshead	2281	574	25.2	2160	611	28.3	15.0	54	3.1
Telford and Wrekin	2212	665	30.1	2115	705	33.3	4.2	18	3.3
Enfield	3518	807	22.9	3622	1022	28.2	27.4	139	5.3
Westminster	1379	208	15.1	1308	275	21.0	40.8	51	5.9
Hackney	1280	200	15.6	1346	293	21.8	75.5	77	6.1
Hillingdon	2932	601	20.5	2919	786	26.9	32.3	130	6.4
Stockport	3266	619	19.0	3043	778	25.6	32.2	125	6.6
Darlington	1201	211	17.6	1188	301	25.3	45.8	71	7.8
Kensington and Chelsea	562	97	17.3	569	145	25.5	43.1	31	8.2
Camden	1442	270	18.7	1442	450	31.2	78.6	121	12.5

Note: Cheshire West and Chester, Cheshire East, Central Bedfordshire and Bedford were excluded from these analyses as they were introduced after 2005 (previously Bedfordshire and Cheshire)

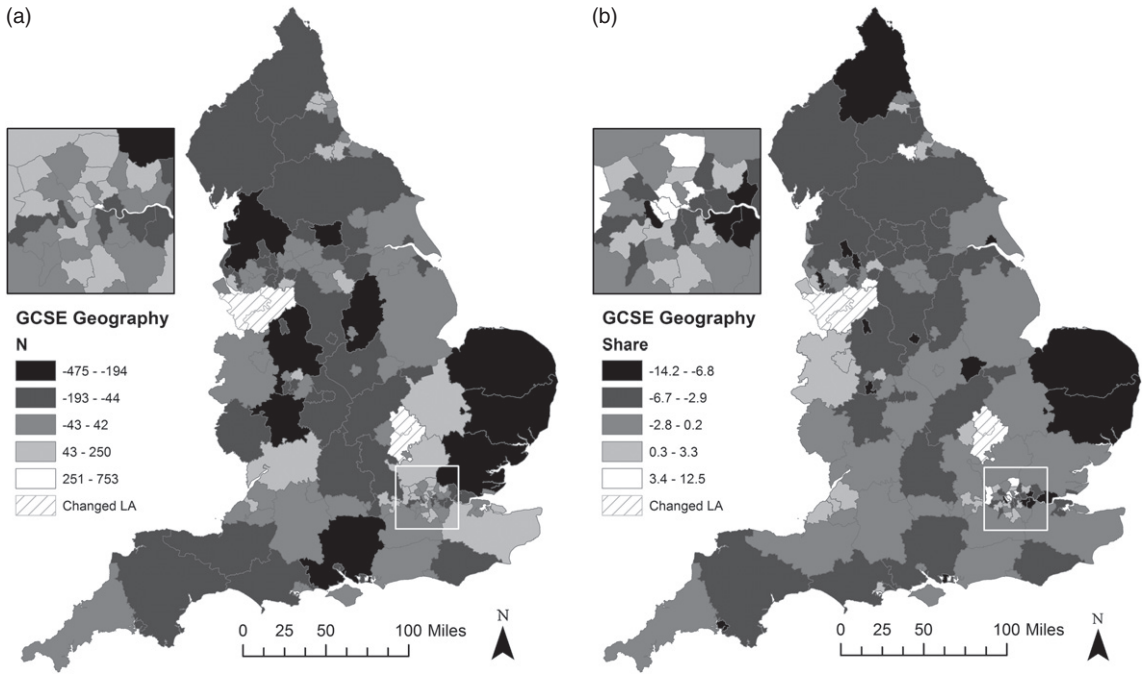

Figure 4 The changing Geography of students attaining GCSE Geography between 2005 and 2009: (a) absolute change, (b) share change

Note: Cheshire West and Chester, Cheshire East, Central Bedfordshire and Bedford were excluded from these analyses as they were introduced after 2005 (previously Bedfordshire and Cheshire)

Figure 4. A series of metrics have been calculated to demonstrate the absolute and relative changes in pupils attaining a Geography GCSE. These include percentage point change, change in percentage share and absolute change. Absolute levels of growth or decline are important in this context, given that these changes in regional supply will influence the availability of those students who may later study Geography at a higher level, and therefore have teaching resource implications. However, a caveat for comparison of absolute values between areas is that these changes are influenced by the overall size of a local authority, and additionally, over time, encapsulate general demographic trends that may increase or decrease the total number of school-aged pupils.

The regional patterns that emerge from these analyses are not clear at the local authority level and indeed present variability between both inner-city local authorities and those containing larger proportions of rural areas. Hammersmith and Fulham lost the greatest share of pupils attaining a GCSE in Geography at 14.2%, whereas only a few miles away in Camden, the share grew by the largest proportion at 12.5%. The predominantly rural Northumberland fell proportionately by 8.8%, whereas some of the most stable areas included those more rural areas surrounding London.

The regional patterns presented above were disaggregated by ACORN to measure the extent those changes in GCSE Geography participation were concentrated within certain types of geodemographic cluster, the results of which are presented in Table 3. Again, a series of metrics have been calculated for those attaining a Geography GCSE including: an index score (I) with upper (U) and lower (L) bounds confidence intervals, percentage of pupils, the percentage point change, percentage share change and index score differences. Reproducing findings from the wider literature, the percentage change figures show that generally there are falling absolute numbers of students attaining a GCSE in Geography. However, between geodemographic groups there is heterogeneity in these rates of decline, and indeed in one group of areas ('Educated Urbanites'), the absolute numbers have grown. However, perhaps less encouraging is the percentage share figure for this group, which shows that the relative proportion of pupils attaining a GCSE in Geography has remained reasonably constant; thus, the absolute growth is likely to be attributable to a general expansion in the base population over the time period. Index score changes show how the relative proportion of students attaining a GCSE in Geography are either increasing or decreasing after

Table 3 State school students attaining GCSE Geography between 2005 and 2009 by ACORN groups

		2005[a]						2009						2005–2009 change		
Category	Group	L	U	I	Geo N	All N	Geo %	L	U	I	Geo N	All N	Geo %	%	Share	I
Wealthy Achiever	Wealthy Executives	137	141	139	19 466	51 050	38.1	147	151	149	19 378	52 349	37.0	–0.5	–1.1	10.3
	Affluent Greys	136	140	138	13 947	36 809	37.9	139	144	141	12 482	35 607	35.1	–10.5	–2.8	3.3
	Flourishing Families	123	127	125	19 224	55 898	34.4	127	131	129	17 832	55 638	32.1	–7.2	–2.3	3.9
Urban Prosperity	Prosperous Professionals	118	127	122	2 728	8 129	33.6	134	145	140	2 602	7 507	34.7	–4.6	1.1	18.1
	Educated Urbanites	87	94	90	2 655	10 700	24.8	97	104	101	2 973	11 898	25.0	12.0	0.2	10.4
	Aspiring Singles	81	86	83	4 004	17 522	22.9	84	90	87	3 659	16 888	21.7	–8.6	–1.2	4.3
Comfortably Off	Starting Out	99	106	103	3 617	12 834	28.2	102	108	105	4 162	16 002	26.0	15.1	–2.2	1.9
	Secure Families	108	111	109	32 308	107 468	30.1	108	111	109	28 295	104 165	27.2	–12.4	–2.9	–0.1
	Settled Suburbia	107	112	109	9 605	31 967	30.0	107	112	110	8 367	30 726	27.2	–12.9	–2.8	0.4
	Prudent Pensioners	107	115	111	2 919	9 562	30.5	108	116	112	2 587	9 312	27.8	–11.4	–2.7	0.9
Moderate Means	Asian Communities	73	79	76	2 999	14 421	20.8	70	76	73	2 697	14 830	18.2	–10.1	–2.6	–2.5
	Post-industrial Families	91	95	93	9 184	35 970	25.5	89	93	91	8 026	35 376	22.7	–12.6	–2.8	–1.6
	Blue-collar Roots	85	88	87	10 559	44 413	23.8	81	84	82	9 235	45 237	20.4	–12.5	–3.4	–4.4
Hard-Pressed	Struggling Families	70	72	71	19 850	102 060	19.4	65	67	66	16 872	102 839	16.4	–15.0	–3.0	–4.8
	Burdened Singles	65	69	67	3 914	21 400	18.3	59	64	61	3 238	21 229	15.3	–17.3	–3.0	–5.2
	High-rise Hardship	60	71	65	507	2 833	17.9	52	64	58	388	2 689	14.4	–23.5	–3.5	–6.9
	Inner-city Adversity	71	77	74	2 857	14 071	20.3	74	80	77	2 707	14 195	19.1	–5.3	–1.2	3.0

[a]In 2005 there were 12 338 pupils with unknown geodemographic classification and in 2009 there were 12 935

Table 4 Average GCSE attainment in schools with falling numbers of students attaining a GCSE in Geography

	Sample average	10% drop	20% drop	100% drop
5 A*–C	56.4	55.0	53.3	39.7
5 A*–C inc. English and Mathematics	43.8	42.6	41.6	25.5
A*–C Geography	61.0	56.9	54.0	34.1
A*–C History	62.3	58.2	55.1	41.5

controlling for base population fluxes. Positive figures indicate an increase in the proportion of geographers, and negative figures a decrease. A caveat to these scores is that they are presented independently of confidence intervals, and as such, the magnitude could be adjusted upwards or downwards within the bounds of those L and U scores that are also presented in Table 3.Within those groups contained in the two most affluent categories 'Wealthy Achievers' and 'Urban Prosperity', there were marginal increases in pupils attaining a GCSE in Geography with the inverse pattern exhibited in the two least affluent 'Moderate Means' and 'Hard Pressed' categories. Both the percentage point change and changing share figures indicate that this moderate shift in participation towards more affluent areas relates to larger relative decreases in pupil numbers living within less affluent areas. If this trend were to continue, this would have an obvious negative effect on increasing access as the profile of geographers would become more skewed.

Schools form an important structural driver to changes in the supply of geographers up to GCSE level by either introducing or removing partial or absolute provision of the subject. Student choice behaviour may also influence these patterns, through pressure to offer certain subjects, or the selection of alternative options to Geography. In the following analysis, the characteristics of those schools that have exhibited a reduction in the proportion of students attaining a GCSE in Geography since 2005 were considered. A subset of schools was created that contained state schools remaining open in 2009 and having at least 50 pupils recorded as completing a GCSE. By examining the rates of change in Geography participation since 2005, these schools were further broken down into three non-exclusive subgroups where GCSE Geography had fallen by at least 10%, fallen by at least 20%, and those schools with a 100% fall. The 10% and 20% thresholds were selected as useful breakpoints in the distribution of the rates of change after examining these on a histogram. Each school was fitted into these categories and the profile of the pupils considered over a range of attributes.

Table 4 shows GCSE attainment percentages within the samples of schools for the 2005 data, and illustrates the historical attainment context. Using a common benchmark of GCSE performance (5 A*–C grades) there was marginally lower than average attainment in those schools that had a 10% and 20% relative fall in the share of pupils attaining a GCSE in Geography, and a more marked drop in those schools that by 2009 had no students attaining a GCSE in Geography. This pattern is mirrored by the more stringent measure of attainment (5 A*–C grades including English and Mathematics), and substantially so for those schools with a 100% drop. This indicates that in those schools where Geography was previously, but no longer in 2009 supplying attaining students, overall average attainment appears to be an issue, and indeed, may form a constraint that has influenced schools to revisit those options offered by their respective curriculums.

A commonly used measure of relative deprivation in educational research is the proportion of pupils eligible for free school meals (FSM), a benefit that is provided by central government, and that is accessible to those pupils from families with low household income, or who are in receipt of certain types of social support. This measure has known caveats, which include the fact that it reduces disadvantage to a binary outcome and potentially introduces bias, given that eligible parents may not take the benefit, for example, to avoid perceived social stigma or because they may deem the meals inappropriate for their children (Hobbs and Vignoles 2007; Chamberlin and Coram 2001; Styles 2008; Harris 2012). If index scores are calculated for those pupils in receipt of FSM, in both the 10% and 20% groupings of schools, these and their confidence intervals were around 100, indicating that the proportion of FSM in these subgroups is very close to that occurring in the sample population as a whole. For the pupils in schools where Geography attainment is no longer recorded, this increased moderately to around 120, indicating that these schools contained around 20% more pupils with FSM status relative to the base sample. IDACI (Income Deprivation Affecting Children Index) is an alternate area based measure of deprivation and was used to assess the characteristics of those areas (Lower Layer Super Output Areas) containing the pupil domiciles. The sample median was 0.16 and was the same in both the 10% and 20% groupings. However, this increased to 0.38 for those schools where attainment in Geography was no longer recorded. Thus, schools recording pupils attaining a GCSE in Geography in 2005, but not in 2009, demonstrated an overrepresented number of students from

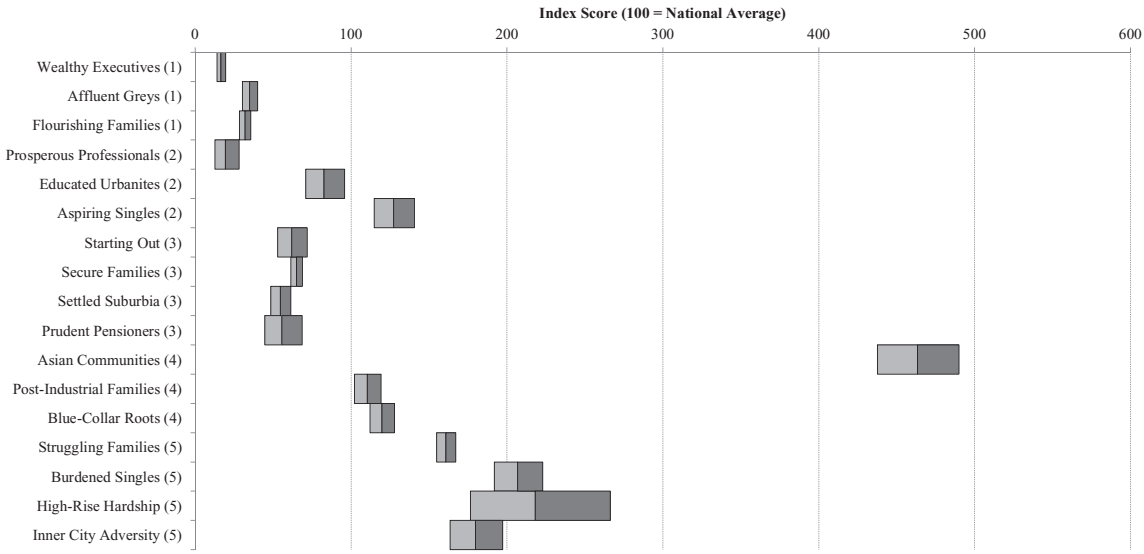

Figure 5 ACORN geodemographic profile of schools with 100% fall in pupils attaining a GCSE in Geography
Note: Categories are given after the group names: (1) Wealthy Achievers; (2) Urban Prosperity; (3) Comfortably Off; (4) Moderate Means; (5) Hard Pressed

low-income households and who were typically resident within areas of low income. A geodemographic analysis for the schools recording a 100% fall in pupils attaining Geography GCSE is shown in Figure 5. As demonstrated by the deprivation analysis, this alternate measure also reports similar trends, with around one and a half times as many pupils living in the most deprived areas, as identified by the ACORN category 5 'Hard Pressed'. Perhaps most striking, however, is the huge over representation of pupils from the group 'Asian Communities', which falls within the category 'Moderate Means'. These areas are characterised by a high proportion of Asian families typically living on low incomes. Furthermore, average educational levels in these areas are also low, and unemployment is high.

If the self-declared ethnic profile of the pupils within this group of schools is examined (see Figure 6), all Asian groups are over represented, and most notably so by those pupils who declared themselves as 'Pakistani'. This group is found in a proportion four and a half times greater than found in the population base.

Mitigating decline?

The previous analyses have shown that across the pre-Higher Education curriculum, Geography is a socio-spatially stratified discipline, with a pupil profile bias towards those living in the more affluent parts of the country. The choice to study Geography at GCSE level is a key progression decision, as without this qualification, pupils are later less likely to study the subject after age 16. As such, in the following analysis, changes to the GCSE profile between 2005 and 2009 are considered in order to examine those types of areas that have increased or decreased their relative share of pupils attaining a GCSE in Geography.

The heterogeneity in participation patterns between ACORN groups is also reflective of the changing profile of pupils attaining a GCSE in the subject between 2005 and 2009 (see Figure 7). For each ACORN group, this figure plots an index score of those pupils attaining a GCSE in Geography in 2009 against the index change during the period 2005 to 2009 and gives an indication of the direction of growth or decline. Those most overrepresented types of areas in the current time period are also typically those that have increased their relative proportion of pupils by the greatest amount since 2005. If this trend were to continue, the profile of post-14 geographers would continue to stratify further along similar lines to the current profile. This would have detrimental effects on widening access in Geography given that those groups most over represented are also those that are more affluent.

The two main organisations representing Geography and geographers in schools in England are the RGS-IBG and the Geographical Association (GA). Historically, both have lobbied to stem and reverse the overall decline in those studying Geography through numerous promotional, outreach and pedagogic activities that have been aimed at schools, Higher Education institutions and the general public. Some of

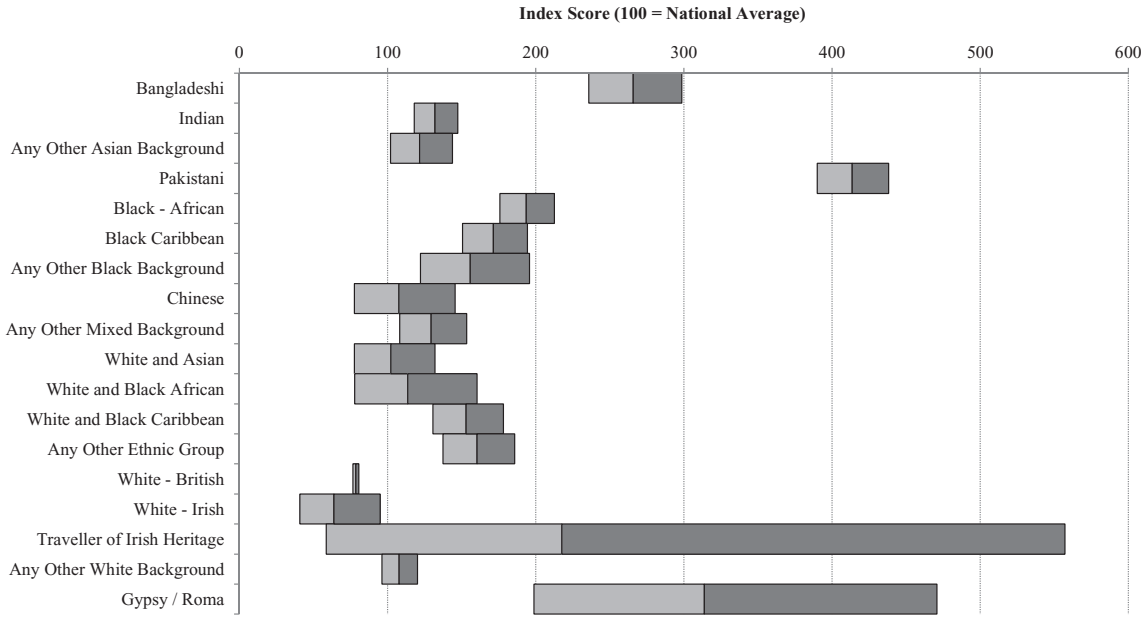

Figure 6 Ethnic profile of schools with 100% fall in pupils attaining a GCSE in Geography[1]

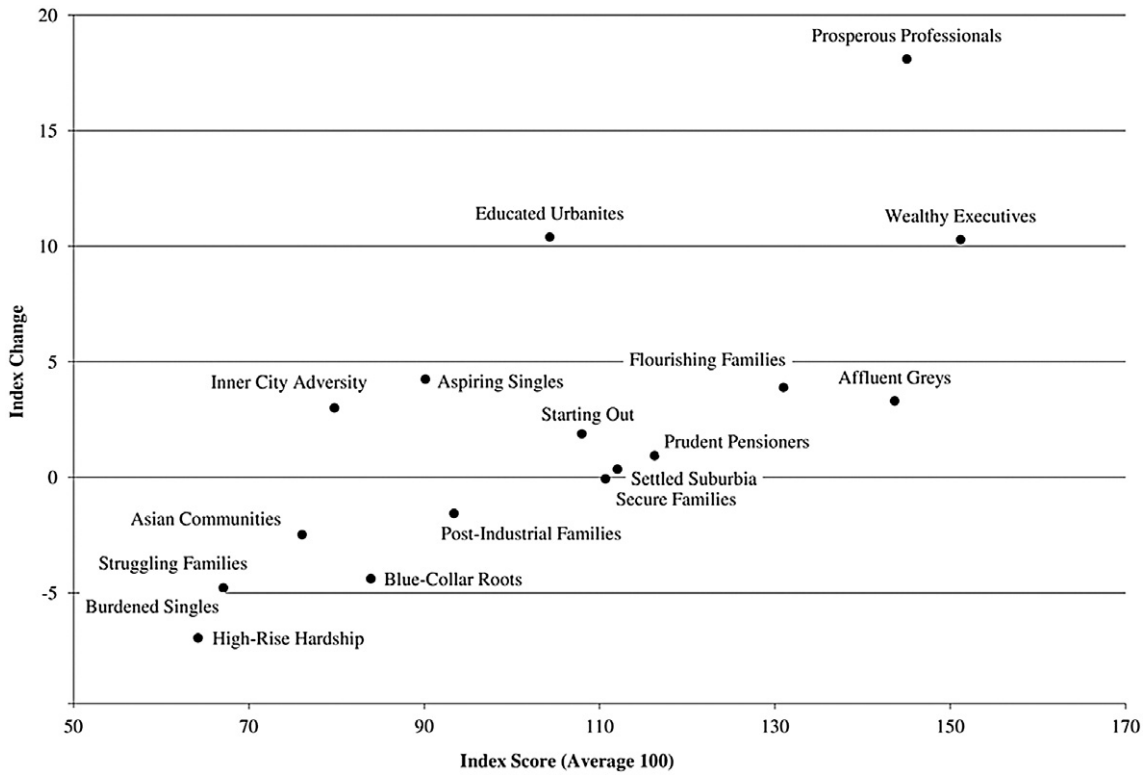

Figure 7 ACORN profile of Geography in 2009 plotted against index score growth or decline since 2005

these activities were government-supported in 2006, with £2 million of funding for a collaborative initiative between the RGS-IBG and GA. This 'Action Plan for Geography' (APG) had the initial funding extended in 2008 and ran through to 2011. The stated goal of the APG initiative was:

> To provide everyone – opinion formers, policy makers, parents and pupils – with a clear vision of geography as a relevant, powerful 21st century subject; and to equip teachers with the professional skills and support they need so that pupils enjoy and succeed in Geography.[1]

One specific APG objective related to increasing participation in school-level Geography with the ambition to

> [a]rrest the decline in the post-14 pupil take up of Geography in the short term, and in the longer term to increase substantially the opportunities for pupils of all backgrounds and circumstances to experience high quality geographical components in their education.
>
> (RGS-IBG/GA 2006, 4)

The evaluation of such an objective in the short term is untenable given that the impact of the APG may not be immediately recorded, and indeed, the APG does make reference that 'the implementation period is not of sufficient length for a reasonable judgement to be made' (RGS-IBG/GA 2006, 9). Furthermore, the impact of the APG is entwined with the effects of policy changes.

Integral to the APG intervention strategies was the RGS-IBG 'Geography Ambassador' Scheme, which sent trained geographers (either studying Geography in Higher Education or graduate geographers) into the classroom. These visits were organised either through requests from schools or by arrangements from students (who tended to go back to their old schools); and over the period of the APG, the Geography Ambassador Scheme made representations to more than 107 000 students. Activities ranged from classroom support through to presentations, seminars and discussions around a set of mutually agreed themes. The RGS-IBG supplied a database of schools visited by the Geography Ambassador Scheme (500 records) and a match was made using the postcode of each school against those records held by the Department for Education. This enabled a unique school identifying code to be found, and thus allowed the matching of pupil data.

The following analysis considers the geodemographic profile of those pupils attending state schools contained within this 500 school sample. As with previous analyses, the profiles of pupils within the schools are compared to the overall English state school base population. Of those schools visited, 436 (87.6%) were state schools with the remainder found within the independent sector (12%).[2] Furthermore, the majority of schools were mixed gender (368, 73.6%) with the remaining split between male only (40, 8%) and female only (92, 18.4%) schools. Finally, the percentage share change of those pupils attaining a GCSE in Geography was considered and is shown in Table 5. This demonstrates that many of the schools visited had also lost relative share of pupils attaining a GCSE in Geography since 2005; however, there was also a large proportion where the share of pupils attaining a GCSE in Geography had grown.

Table 5 Ambassador Scheme school sample GCSE Geography participation characteristics

Category of school	N	% (of 466)
Fall 10%	115	24.7
Fall 20%	38	8.2
Dropped Geography	5	1.1
Increased 10%	87	18.7
Increase 20%	25	5.4

Note: Thirty-four schools had no recorded Geography attainment in 2005

The ACORN group profile of those state schools pupils who attained a GCSE in Geography and studied within the Ambassador Schools sample is shown in Figure 8. These results show that the schools visited contained proportionally more pupils from areas referred to as 'Urban Prosperity', but lower proportions of those schools containing pupils living in the most affluent areas ('Wealthy Achievers'). Fewer schools were visited containing pupils from the most deprived areas ('Moderate Means' and 'Hard Pressed'), with one exception: the group 'Inner-City Adversity', which recorded a propensity almost double the national average. This group is characterised by deprived and densely populated multi-ethnic urban areas where income is typically low. It is also an ACORN group with very low attainment and participation in Higher Education (Singleton 2010b). Where the RGS-IBG was able to direct Ambassador support to specific schools, it selected those facing challenges in the provision of Geography, and as such, may have influenced this overrepresentation.

Geography's futures

It is difficult to ignore the historic aggregate decline in the absolute number of students attaining grades in school-level Geography, and the analyses presented here have demonstrated complexity in these patterns, indicating both regional and geodemographic heterogeneity to the overall rates. Rates of higher relative participation were observed in a number of the more rural local authorities; however, between 2005 and 2009 these rates varied considerably. Geodemo-

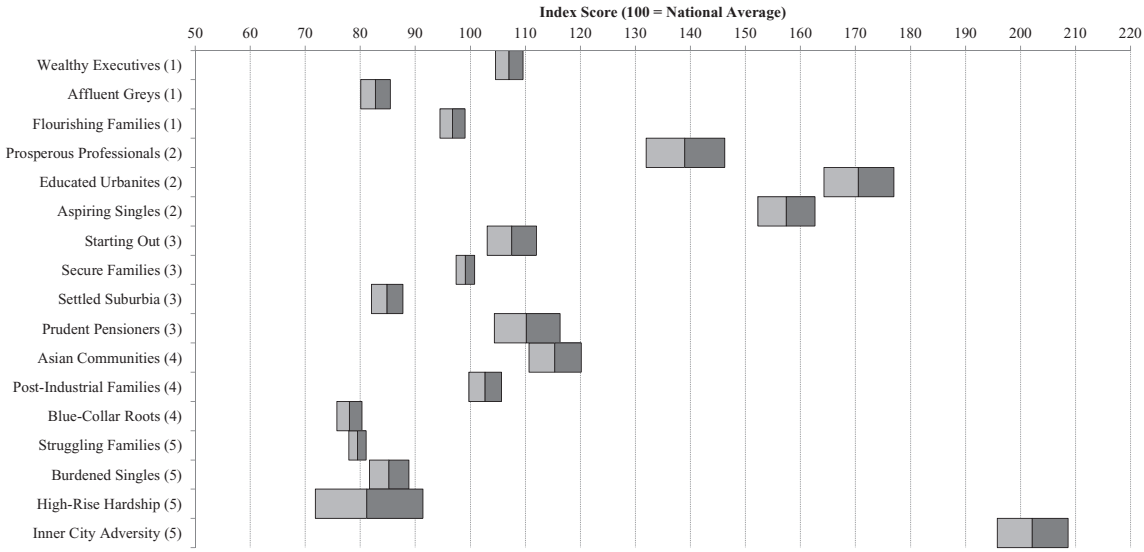

Figure 8 ACORN group profiles for those pupils within the Ambassador Scheme state school sample
Note: Categories are given after the group names: (1) Wealthy Achievers; (2) Urban Prosperity; (3) Comfortably Off; (4) Moderate Means; (5) Hard Pressed

graphic analysis highlighted that state school pupils attaining GCSE in Geography more prevalently have domiciles in areas where residents are typically affluent and less ethnically diverse; and indeed, the patterns of change since 2005 indicates that this stratification has increased.

A driver of Geography participation is the variable availability of the subject between school curricula. As such, the rise or fall in the number of students attaining a GCSE in Geography was examined for all schools in England. This analysis highlighted that in those schools featuring the largest decline in pupils attaining a Geography GCSE, these typically also recorded lower than average overall attainment at GCSE, and particularly so in those schools where GCSE Geography attainment was no longer recorded in 2009. In schools with moderate to high decline (10% or 20%) in GCSE Geography, the deprivation characteristics of the pupils and the areas in which they lived was average; however, this increased for those pupils in schools that had recorded a 100% fall. Schools with lower than average attainment on national performance metrics will be under pressure to improve results, and as such, these patterns may relate to an increased pressure for decision makers in schools to revisit those aspects of the curriculum that are non-compulsory, or that do not feature as components of the performance metrics. Conflating with these performance issues are the enhanced challenges of teaching pupils from deprived households and areas, which typically cause further problems for schools such as absenteeism or encompass wider social issues that are known to affect pupil performance.

As stated earlier, the impact of the RGS-IBG Geography Ambassadors programme on participation patterns is unlikely to be recorded for some time; however, it was possible to consider the geodemographic characteristics of those schools visited to date. It was found that these visits were most often reaching pupils with domicile in more affluent areas, with one exception in the ACORN group 'Inner-City Adversity'. Furthermore, many of the pupils living within those ACORN groups reached most prevalently were also those that were not in most decline over the recording period. However, these patterns are perhaps not surprising given that the programme relied on the support of volunteers to visit schools, and indeed many of these contacts were generated by visits to old schools attended or schools known to the volunteers. As such, any historical bias in the profile of geographers may well be carried forward by this activity, as there are likely to be fewer volunteers who previously had domiciles within the most underrepresented ACORN groups. A caveat to this analysis is that without detailed information on the actual recipients of the visits, school profiles are simply acting as surrogate measures, and indeed those taking part in Ambassador activities may be a smaller or more specific subpopulation of a school. More generally, the analyses looked at attaining populations in schools to isolate a single year rather than the total school population in aggregate; and finally, ACORN group analysis represents area of domicile characteristics, rather than individual characteristics and must be interpreted as such to avoid the ecological fallacy.

When making predictions about future trends in the education system it becomes difficult given that the policy agenda has historically been so fluid, and that these changes can have substantial and rapid impact. If linear trends were drawn from the analyses presented in this paper, it appears that Geography will gradually shrink in absolute numbers, becoming more regionally concentrated to the South of England and attracting students residing more prevalently in affluent areas. However, this ignores any potential benefit of the APG, or those impacts of future or current policy changes. For example, a recent change that has begun to have an impact on Geography participation (DfE 2011) is the introduction of the English Baccalaureate (EBacc), which, rather than being a new qualification, is a certificate awarded to students fulfilling the EBacc criteria of attaining an A*–C GCSE pass in English, Mathematics, two Science subjects, History or Geography, and a language. This also forms an alternate benchmark upon which school performance will be assessed. Initial statistics related to the introduction of the EBacc indicate that: 'from September 2011, 33 per cent of those taking GCSEs in 2013 will be doing Geography GCSE – an increase of 28% in the numbers of pupils studying it' (DfE 2011). This is an encouraging development; however, the future impact of this new measure could vary depending on the balance in any renewed participation between History and Geography, and as such, a pressing and urgent challenge for Geography will be to promote the subject's relevance to maximise this opportunity. The type of outreach demonstrated by the RGS-IBG through the APG is clearly of great importance in achieving this aim, and although the central funding for the initiative has now finished, it was recently announced that the RGS-IBG Ambassadors component would continue with private-sector investment from ESRI (UK).[3] This paper has demonstrated that Geography participation has been strained in recent years, and that differential access remains an issue between geodemographic clusters. However, if those initial statistics related to the EBacc become a long-term trend, we may be over the worst of the recent participation decline. Geography clearly does have a future; however, there is still much work to be done to ensure that any increased numbers are equitably distributed across all segments of society.

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Notes

1 See http://www.rgs.org/NR/rdonlyres/82F00DE8-A7A3-4411-B111-E6A3610317EF/0/APG20062011_FinalReportand Evaluation.pdf

2 Two schools had unknown classification.

3 See http://www.esriuk.com/aboutesriuk/pressreleases.asp?pid =612

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