The "schools revolution" in England: a Configurational Comparative Analysis of academisation across local authorities.

Abstract

The academy concept has recently been subjected to significant academic scrutiny. However, this research has focussed on assessing the success of this reform drive with respect to its outcomes, as opposed to its implementation. On the basis of the extant research, this paper identifies several factors that could plausibly be linked to variances in the extent of academy uptake across local authorities in England. The paper employs Fuzzy-Set Qualitative Comparative Analysis (fsQCA) to analyse the relationship between these potential explanatory factors and the outcome of interest across 150 local authorities in England, up to November 2017. The findings support the paper's hypothesis that higher levels of academisation should be associated with different causal combinations, unified by the fact of both a "promoting" agent and a conducive context being required to underpin reform in this respect. The paper concludes with a consideration of the implications of this analysis for the policy drive towards greater academisation, with the contention being that those interested in the more consistent implementation of this programme of reform should focus on broadening its appeal to a wider range of social actors.

Introduction

Since its introduction, the academy concept has been the central pillar of a radical remodelling of the educational landscape in England. The academy is premised on the idea of greater school autonomy, with the process of academisation resulting in schools 'gradually being removed from the direct control of local authorities and new schools being established outside of their control' (Walford 2014: 315). The purpose of this paper is to analyse the progress of this reform programme to date, so as to establish which factors have played a role in determining the varying extent of academy uptake across local authorities in England. In doing so, we hope to fill an identifiable gap in the literature, which tends to focus on the effects of academisation (e.g. Eyles and Machin 2015; Gorard 2014; Porter and Simons 2015) rather than its causes. To be clear, this paper does not seek to provide a normative consideration of the benefits and/or drawbacks of academies. Neither does it aim to assess the extent to which academisation has augmented school autonomy, in real terms (for this, see Salokangas and Chapman 2014 and Wilkins 2017). Rather, the focus is solely on identifying those features of local authorities with the most significant levels of academisation that distinguish them from other local authorities. This research is of particular relevance at this point in the evolution of the programme, since there is presently a "policy vacuum" surrounding the academisation agenda, with the status of schools largely being left to local determination. This, in itself, is one of the key reasons for there being such significant variance in the academisation levels across different local authorities. In setting out the causal factors that have underpinned high levels of academisation, the conclusions of this paper will therefore potentially

be of use to policy-makers and practitioners interested in working towards the more consistent implementation of this programme of reform.

This paper employs Fuzzy-Set Qualitative Comparative Analysis (fsQCA) as its analytical tool. The *Background* presents a short history of the evolution of the academy concept, so as to secure a precise definition of the outcome of interest. Following this, the *Methodology* sets out fsQCA in detail, as well as explaining its suitability to the present task. The *Theory and Calibration* establishes a number of plausible causal explanations for the variance in the outcome, which represent the 'conditions' to be explored in the analysis. The conditions are "operationalised", through the attribution of suitable indicators and their calibration, such that the data can be employed in fsQCA. This section concludes by defining a hypothesis pertaining to how the conditions may combine to produce the outcome, based on the framework provided by Realist Causal Explanation (Pawson 2006). In the *Analysis* the fsQCA is undertaken and the results interpreted in view of the hypothesis. The paper concludes with a review of the analysis and a consideration of its implications for policy-makers.

Background

The academy represents a significant shift in the organisation and management of England's school system. Academies are distinguished by their freedom from local authority control, instead contracting directly with central government and being 'free from the national curriculum; their own admissions authorities; and not bound by national union agreements' (Hatcher 2011: 485). The academy concept was introduced through the Labour Government's *Learning and Skills Act 2000*, which allowed for the creation of 'City Academies', later rebranded 'Academies' under the *Education Act 2002*.

Academies were originally conceived as a means of addressing inequitable educational outcomes. Typically, academies replaced failing schools, with the aim being "to raise standards while breaking the cycle of underperformance and low expectations" (Blunkett 2000) in deprived urban areas. Despite sequential broadening of the terms under which academies could be established, this model of the academy-as-solution-to-poor-educational-standards remained the focus throughout the Labour period, as exemplified by the Government's statement that it would consider schools with sub-30% 5xA*-C at GCSE (including English and Maths); those in special measures; and those that had a notice to improve as eligible candidates for academisation (DfES 2007). Ultimately, the Labour Government 'did not want all schools to become academies; Ministers stressed that academisation could not be the solution for all secondary schools' (Long 2015: 4).

These limits on the academy model were effectively removed by the Conservative-Liberal Coalition Government in 2010. The *Academies Act 2010* introduced two key changes, providing for any maintained school to decide to convert to academy status and allowing academies to be created as an entirely new provision, in the form of 'Free Schools'. Alongside these converter academies and free schools, the Government retained the principle of imposed academisation on institutions deemed to be underperforming, in the form of the 'sponsored' academy (the 'sponsor' typically being a private organisation or, latterly, a multi-academy trust), thereby providing three distinct routes to the creation of new academies. Thus, as noted by Wiborg (2015), the effect of this Act was to "universalise" the academy concept; this was now a model open to all schools and, during the Coalition's term in government, the number of academies increased dramatically from 203 to 4,674 (DfE 2015). This was further reinforced by the *Education Act 2011*, which introduced the Academy Presumption (later the Free School Presumption), requiring local authorities to pursue academy/free school proposals as the default option when establishing new schools.

Upon election as a majority Government in 2015, the Conservative emphasis on universal academisation shifted from active enabling, to determined promotion. As part of what the then Education Secretary, Nicky Morgan, termed the "schools revolution", the Government determined to work towards a fully-academised system, as set out in the *Education Excellence Everywhere* White Paper, which proposed a requirement for all schools to convert to academy status by 2022 (DfE 2016a). Owing to a degree of opposition and a change in priorities in the national policy agenda, this proposal was dropped, although the DfE subsequently reaffirmed that it remained 'the Government's ambition that all schools ultimately benefit from the autonomy and freedom to innovate and to meet the needs of their community that academy status brings' (DfE 2016b: 7). Since the formation of a Conservative minority government in 2017, the push to greater levels of academisation has fallen off the national policy agenda, amid a general education "policy vacuum". In practice, then, the academisation agenda remains locally formulated and directed, overseen by local authorities and the offices of the Regional Schools Commissioners. This makes consideration of the factors underpinning local variances in academisation especially pertinent, as it seems that they will continue to play a fundamental role in how the academisation programme evolves. In approaching this task, it is important to be clear about the types of 'academy' that will be analysed. In this respect, there is an important distinction to be made between sponsored academies and the newer breed of converter academies/free schools. As should be clear from the preceding, converter academies and free schools result from the *voluntary* decisions of micro-level actors, inasmuch as schools themselves decide to convert, or free school proposers elect to establish a new school in an area. On the other hand, sponsored academies are typically the result of a *centrally-imposed* intervention with respect to an underperforming institution. The prevalence of sponsored academies in a particular area, therefore, does not convey anything more than the number of schools that have fallen sufficiently below national standards to warrant intervention

by the Secretary of State. Since the purpose of this paper is to understand the *local contextual factors* that underpin the academy model taking hold in certain local authorities more than others, it is important to focus solely on the incidence of converter academies and free schools, i.e. those instances where the underlying decision has been elective, rather than externally imposed. As the *elective* nature of conversion is the crucial element here, it is also worth noting that the analysis does not distinguish between converter academies that joined multi-academy trusts and those that have established single-academy trusts. The outcome of interest is defined accordingly, in the form of the following set:

Academisation (A): Local authorities that contain a high number of converter academies and free schools, as a function of their total number of schools (excluding sponsored academies).

Naturally, in grouping converter academies and free schools together in a single category, conditions will have to be selected that could feasibly pertain to the prevalence of each category of school and this was a consideration that influenced the selection of conditions used within the analysis.

Methodology

Qualitative Comparative Analysis (QCA) was developed by Charles Ragin in his 1987 book *The Comparative Method*, the idea being to devise a methodological "bridge" between qualitative and quantitative analysis. Although originally developed for analysing social science datasets with a small-to-medium number of units (n), QCA has since been applied to disciplines as diverse as environmental science (Scouvart et al. 2007) and polemology (Chan 2003), as well as to large-n studies (Roig-Tierno et al. 2017: 20). Pertinently, QCA has also recently been utilised within the field of comparative education (Cooper 2005; Glaesser and Cooper 2012; Lee 2013), a tradition upon which the current paper builds.

Ragin's objective was 'to combine the richness and fine granularity of explanation-oriented enquiry with increasingly wider opportunities for generalisation (Befani 2013: 281). This synthesis rests on the adoption of a standardised, scientific approach to qualitative analysis, which is achieved through two core strategies. Firstly, to ensure an essentially qualitative, case-oriented approach, QCA analyses cases in an holistic manner. Thus, cases are deconstructed into a number of potential causal factors (referred to as 'conditions') and subsequently analysed in terms of how these factors combine to generate the outcome. Secondly, to standardise the analysis, the outcome and conditions are coded in a logically uniform manner (in the range 0 to 1), with respect to their presence (or absence) across the analysed cases, thereby enabling translatable comparisons and broader conclusions to be drawn. The net effect is that QCA is an inherently *configurational* approach,

within which 'cases are understood in terms of the aspects they combine, as different configurations of set memberships' (Ragin 1999: 1225). Additionally, the methodology implies *equifinality*, whereby different combinations of conditions can result in the same outcome. In QCA, then, causation is not regarded as an exclusive affair, but 'a search for patterns of cooperation in which the variables join forces to mutually produce various configurations' (Markoff 1990: 178).

The various types of QCA are distinguished with respect to how variables are coded. The original methodology developed by Ragin was Crisp-Set Qualitative Comparative Analysis (csQCA), which required that variables be coded in a binary fashion, such that each case is regarded as either possessing (1) or not possessing (0) the feature in question. Consequently, csQCA does not permit distinctions of degree and, over time this came to be regarded as a limitation, since a significant amount of social science data does, in fact, vary by degree, rather than in a binary either/or sense. The development of fsQCA was a direct attempt to address this limitation, 'by permitting membership scores in the interval between [0] and [1]… The basic idea behind fuzzy sets is to permit the scaling of membership scores and thus allow partial membership' (Ragin 2009: 89).

The rationale for utilising QCA, and particularly the fuzzy-set version, is two-fold. Firstly, we employ a form of QCA because it is contended that conditions selected for the analysis act in specific combinations to produce the outcome, rather than there being any variable that could achieve this in isolation (as clarified in the hypothesis). Secondly, *Fuzzy-Set* QCA is used because all of the indicators attributed to the variables within this paper relate to scales and, as such, do not lend themselves to straightforward dichotomisation. Whilst it would be possible to select binary-type indicators for some of the variables, this is not achievable in all cases (including, importantly, for the outcome itself). Thus, it was determined to utilise fsQCA, so as to maximise analytical precision and minimise the potential for coding error.

Within QCA, causal relationships are assessed in terms of *necessity* and *sufficiency*, both of which entail a subset relation. Where a (combination of) condition(s) is necessary for outcome generation, the set of cases displaying the outcome will be a subset of the set of cases displaying the (combination of) condition(s) in question. Conversely, for a (combination of) condition(s) to be sufficient for outcome generation it is required that the set of cases displaying the (combination of) condition(s) be a subset of the outcome set. Within fsQCA, a subset relationship is determined to exist when the fuzzy-set membership scores in a (combination of) condition(s) are persistently higher (necessity) or lower (sufficiency) than the membership scores in the outcome set. A case's membership score in the outcome or a single condition is simply the score for this variable in the range 0 to 1, whereas subtracting this score from 1 provides the degree to which the case displays the condition's absence.

Following the "weakest link" principle of fuzzy-set logic, a case's membership in a *combination* of conditions is equal to the lowest membership score in one of these conditions. For example, if a case had a membership score of 0.9 in condition A; 0.4 in condition B; and 0.7 in condition C, then its membership in combination ABC would be 0.4 (i.e. the membership in B, which is the lowest of the three).

For the purposes of this paper, the fsQCA procedure is divided into the following steps:

1. Identify outcome of interest
2. Case selection
3. Select causal conditions
4. Calibrate the variables
5. Formulate a truth table
6. Analyse the output
7. Interpret the results

It should be noted that 'the best QCA work entails a rich 'dialogue with the cases' at virtually every step' (Rihoux and Lobe 2015: 1050), making it an inherently iterative process. To explain, it is common for the initial specification of the analysis to produce an output that lacks consistency with and/or coverage of the cases (concepts explained in the *Analysis*). Consequently, having completed steps 2-6 in the first iteration, it is quite possible that the assumptions established in one or more steps (pertaining to condition selection, variable calibration etc.) may need to be revised, so as to deliver a more coherent output. The iterative process that underpinned this research is summarised in full within this paper.

Having already identified the outcome, we can proceed to case selection (step 2). This paper's units of analysis are upper-tier local authorities in England (i.e. authorities with direct responsibility for education), of which there are 152 in total. Although consideration was given to analysing the causal relationships over a subset of this group, it was ultimately decided that, in terms of their remit and structure, these authorities were sufficiently homogenous and therefore met the prerequisite of being 'alike enough to permit comparisons' (Berg-Schlosser and De Meur 2009: 20). Utilising such a large dataset also eliminates practical restrictions on the number of conditions that can be employed (see Krogslund et al. 2015 for a further discussion of this point). The only local authorities excluded from the analysis were the City of London and the Isles of Scilly, on the basis of their each containing only a single maintained school, which was too small a sample over which to adequately assess patterns of causation. As such, the core dataset used in the analysis comprised 150 cases.

Theory and Calibration

The next task is to establish the potential determinants of the outcome (step 3). This paper focuses on the *structural* influences on the relative level of academisation in a local authority. Whilst it should be acknowledged that the decision to convert to academy status or submit a free school bid is vested in micro-level actors (governing bodies and free school proposers, respectively), each with their own rationale, there can be no doubt that the structural framework within which these decisions are taken has a significant influence, as evidenced by the remarkable variation in the academisation rate across local authorities (ranging between 1.33% in North Tyneside to 88.76% in Bromley; see *Appendix 1*). Naturally, there will be many influences on the academisation rate. Some of these will be locality-specific and thereby incapable of being fully captured within an analysis of this type. Others represent universally applicable (nationwide) motivations, such as the financial incentives offered to converter academies in the early years of the initiative, which (although important) cannot explain the variance between localities. Of the remaining candidate factors, we have selected those that are most prominent in the relevant literature and represent (to our mind) the most plausibly significant influences, with respect to the prevalence of *both* converter academies and free schools. Realistically, though, such an analysis can only hope to explain a portion of the outcome. In this respect, we set the ambition of explaining a majority (i.e. ≥0.5) of the outcome within the derived solution (see the *Analysis* for further detail). Although our analysis cannot capture locally-specific factors, it can identify locally unique *combinations* of prominent factors that are related to a high level of academisation, which is a distinct benefit of (fs)QCA in comparison to standard multivariate statistical approaches. Applying this type of analysis therefore goes some way towards identifying locally unique drivers of the academisation process. An initial review of the literature pertaining to academisation identified four potential conditions, set out below.

As noted by Eyles and Machin (2015: 5), 'the academies programme has been promoted and pursued with almost evangelical fervour by advocates, and run down with an equal lack of enthusiasm and stark criticism by detractors'. Since the promotion of *universal* academisation is a Conservative-led programme of reform, the ideological divide referred to by Eyles and Machin typically sets those on the political right (as promoters) in opposition to those on the political left (as detractors), with those in the latter group opposing the programme on the basis of, amongst other things, the capacity for academies to exempt themselves from the framework of national pay and conditions negotiated by unions (see Hatcher 2011 for a detailed list). It might therefore be expected that Conservative local authorities would be more predisposed to promoting the academisation of schools within their purview, as well as encouraging the development of free schools, where relevant. This hypothesis is given additional weight by the fact that Conservative local authorities have been the exclusive source of policies promoting full academisation of their school systems. This occurred first in Lincolnshire, where schools were "advised" to academise (Channel 4 2011) and has most recently been actively considered in Bath and North East Somerset, where a report suggested changing local policy to "encourage" full

academisation (Somerset Live 2018). This latter case is particularly significant, as it is only since the council has come under Conservative control (in 2015) that this policy discourse has started. The first condition is defined in respect of the following set:

Conservative (C): local authorities that have predominantly been run by Conservative administrations during the period of analysis.

Moving to the second condition, a sizeable portion of the existing literature on converter academies and free schools, points to an association between the presence of such schools and socio-economic advantage. The stated motivation of the free schools initiative is to 'give parents, teachers, charities and local communities the chance to set up new schools' (Cabinet Office 2010). This aim has translated into reality, with research showing that 49.5% of accepted proposals in Wave 1-3 of the initiative were developed by such groups (Higham 2014b). However, although notionally open to applicants from all social strata, the formulation of a successful application is decidedly resource intensive. As such, access to the scheme is highly premised on 'people's differential capacity to mobilise expertise, resources and entrepreneurialism' (Higham 2014a: 125). Consequently, the demands of this process may mean that socio-economic disadvantage acts as a barrier to effective action and, therefore, that there may be an (inverse) association between the prevalence of free schools in a local authority and its level of socio-economic deprivation.[i]

In terms of converter academies, statistics show that, at the point of transition, secondary schools that convert to academy status had, on average, 7.7% of pupils eligible for Free School Meals (FSM), as opposed to 15.4% at local authority maintained schools (Bolton 2015). Furthermore, analysis of the intake post-conversion shows that 'Converter Academies generally take far less than their fair share of FSM pupils' (Gorard 2014: 273). Although the reasons for this have not been fully mapped, it is likely that parental choice plays a role, inasmuch as socio-economically "enabled" parent groups may perceive academisation as preferable, in respect of the increased scope for local involvement in shaping the local educational offer. Following this line of reasoning, we may postulate that schools with a relatively advantaged socio-economic catchment may see the greater curricular and organisational flexibility the academisation brings as a means of both remaining responsive to their existing stakeholders and placing them at a competitive advantage in the annual drive to attract applications. Accordingly, it is hypothesised that the association between individual converter academies and relatively low levels of socio-economic disadvantage may also hold true at this paper's level of analysis (i.e. the local authority). The second condition is framed as follows:

Deprivation (D): local authorities that have a significant level of socio-economic deprivation. [Inverse relationship]

The third condition relates to the perceived standard of schools. To explain, it is posited that in school systems that generally underperform against national indices of educational outcomes, relatively well performing schools will be more inclined to convert to academy status, so as to disassociate themselves from the perception of underperformance (e.g. in the minds of prospective parents). Furthermore, it was a stated ambition of the Conservative administration that free schools would particularly emerge 'in areas where there are disadvantaged groups experiencing low-quality local-authority-controlled schools' (Green, Allen and Jenkins 2015: 909) and, as such, we may also expect a prevalence of this school type to be associated with school systems that underperform against the aforementioned indices. Thus, an *inverse* relationship between the outcome and performance against the educational outcomes measured by the index in question is posited. The third set is formulated as follows:

System (S): local authorities within which the school system delivers significantly strong educational outcomes. [Inverse relationship]

The fourth condition is based on the idea that urban areas are likely to provide a more fertile environment than rural ones for the development of converter academies and free schools. Rural areas are likely to have a relatively high number of smaller, isolated schools that would be placing more at risk by "going it alone" outside the purview of the local authority, as well as being less attractive to multi-academy trusts, who might otherwise provide such support. This line of reasoning is reinforced by a House of Commons Committee of Public Accounts report, which concludes that '[s]ome small rural primary schools are unattractive to multi-academy trusts because they are financially vulnerable or geographically isolated' (2018: 5). It might, therefore, reasonably be expected that such schools would be less likely to convert and, consequently, that rural areas would have fewer converter academies than their urban counterparts. Similarly, in terms of free schools, we may posit that rural areas are less likely than urban ones to contain the demographic "critical mass" required to provide the demand base for such provision. The set for the fourth condition is specified accordingly:

Urban (U): local authorities within which the population is concentrated in urban areas.

In formulating these conditions, it should be acknowledged that there are undoubtedly numerous exceptions to the general relationships between the

individual conditions and the outcome posited above. For example, it is acknowledged that not all Conservative local authorities endorse the academies programme (Guardian 2016). Indeed, it is for precisely this reason that they are analysed in respect of causal *configurations*, rather than as isolated variables.

Step 4 of the fsQCA procedure requires the association of indicators with, and calibration of, the outcome and conditions. Calibration serves to standardise the analytic input, whilst also enabling quantitative datasets to be adjusted in line with qualitative understanding. In this sense, it is important 'for researchers to distinguish between relevant and irrelevant variation… variation that is irrelevant to the set must be truncated so that the resulting membership scores faithfully reflect the target's label' (Ragin 2008a: 10-11). This requires the specification of two 'qualitative anchors', relating to full membership and full non-membership of a set, above/below which variation in the data is considered largely irrelevant. In order to complete the calibration, it is necessary to specify a third qualitative anchor, referred to as the point of maximum ambiguity (or crossover point), with regard to whether a case is classified as more "in" or "out" of the set. The research for this paper utilises the direct method of calibration, whereby distinct points in the indicator data range are attributed to each of full membership (≥0.95); the crossover point (0.5); and full non-membership (≤0.05). As these are *qualitative* anchors, they should not be mechanically derived, through straightforward replication of the indicator's own scale. Rather, '[s]uch calibration is possible only through the use of theoretical and substantive knowledge, which is essential to the specification of the three qualitative breakpoints' (Rihoux 2008: 731).

The calibration of the outcome set will demonstrate the application of the above methodology. The indicator used to measure the relative level of academisation is the percentage of a given local authority's total number of schools (excluding sponsored academies) that were converter academies and free schools. The relevant data was extracted from the 'Get information about schools' service (formerly Edubase) in November 2017. Local authorities within which a *majority* of target schools were converter academies or free schools were defined as full members of the set, locating full set membership at 50%. Local authorities with an academisation rate of fewer than one-in-ten schools were marked as fully out of the set, placing full non-membership at 10%, which was also within one of the more substantial breaks in the bottom end of the data range (locating qualitative anchors in substantial breaks is advised, to avoid potentially arbitrary demarcations). The crossover point was placed at 27.1%, on the basis of proximity to the median score (27.04%) and the overall academisation rate (27.11%).

The calibration of the conditions utilised in the first iteration of the analysis is summarised in Table 1. Indicators were taken from the beginning of the relevant "causal period", commencing with the *Academies Act 2010* (i.e. 2010-2017),[ii] so as to best reflect a cause-effect sequence. In accordance with the preceding, calibration was undertaken on the basis of substantive knowledge; qualitative judgement; and location within breaks in the data. In the absence of another basis for judgement, the

crossover points were aligned with the mean and/or median scores for the relevant dataset. The rationale for the definition of each qualitative anchor is provided in *Appendix 1*.

Table 1: Calibration of the Original Conditions

Condition	Indicator	Range	Calibration	
Conservative	Whole years of Conservative administration (2010-2017)	0 - 7	0.95	7.0
			0.50	3.5
			0.05	0.0
Deprivation	% children in low-income families (2010)	7.4 - 45.9	0.95	40.0
			0.50	21.1
			0.05	14.1
System	% 5xA*-C (including English & Maths) (2010)	38.0 - 71.3	0.95	64.6
			0.50	53.5
			0.05	50.0
Urban	% population living in urban areas (2011)	30.8 - 100.0	0.95	100.0
			0.50	90.0
			0.05	50.0

The fs/QCA 2.5 program was utilised to calculate all fuzzy-set membership scores, on the basis of the specified anchor points. The raw datasets are provided in *Appendix 1* and the fuzzy-set scores in *Appendix 2*.

This paper's hypothesis is based on the conceptual framework provided by Realist Causal Explanation, as set out within Pawson's *Evidence-Based Policy*. The core contention is that conditions operate in 'Context-Mechanism-Outcome Configurations' (CMOCs). Causal elements are therefore divided into two distinct categories: 'generative mechanisms' and 'contextual conditions'. Mechanisms serve as the active "triggers" of the outcome, although they also require a conducive context to operate effectively in this manner. Consequently, '[d]iscovering the explanatory mechanism in action… is only half the battle because the association between its operation and the occurrence of the expected outcome is not fixed. Rather, outcome patterns are also contingent on context' (Pawson 2006: 24). Thus, the model implies that '[f]ormally similar inputs, mediated by the same mechanisms, can lead to different outcomes if the contexts are not analytically equivalent' (Falleti and Lynch 2009: 1160). In the extreme, variance in contextual conditions has the capacity not only to enable or inhibit the operation of mechanisms, but to alter their effect on the outcome entirely. Since the CMOC model specifically addresses the capacity for conditions to operate in causal configurations, it is ideally suited to QCA analysis and has previously been used in this context (see, for example, Befani 2013).

In accordance with the CMOC model, this paper's hypothesis conceives of the above conditions as either generative mechanisms or contextual conditions. It is contended that the first two conditions act on the outcome in respect of their relating to agent-mechanisms (i.e. a Conservative administration and/or a socio-economically "enabled" population) that actively promote greater academy conversion rates and the establishment of free schools in their local area. The latter two conditions, on the other hand, do not relate to the active agents of academisation, but instead relate to an overall context (i.e. a less-well-performing school system and/or an urban environment) that is likely to be conducive to the greater prevalence of converter academies and free schools.

Drawing this together, the hypothesis is that a "monocausal" explanation will be untenable and, more concretely, that (at a minimum) both a mechanistic factor and a contextual factor must be present, in order to produce the outcome of interest. The rationale underpinning this is that *significant* levels of academisation will require mechanistic "promoters" to trigger the shift and, furthermore, that such actors would not be able to act effectively if the contextual conditions did not favour such change. Thus, in rural contexts where the school system is perceived to be performing well, the scope and/or incentive for academisation will be lacking and the outcome of interest will not be realised, irrespective of the presence of the mechanistic factors. The hypothesis is formulated accordingly:

Hypothesis: Causal configurations that are sufficient for the realisation of a high proportion of converter academies and free schools within a school system must contain at least one generative mechanism, combined with at least one contextual condition.

Thus, in the first iteration of the analysis, only those causal configurations that combined 'C' and/or 'd' with 's' and/or 'U' would serve to support this hypothesis (note here that lowercase lettering is used to denote the absence of a condition, in line with the inverse relationships posited).

Analysis

Step 5 of the fsQCA procedure involves the conversion of the case-level data into a truth table, which lists 'the different logically possible combinations of causal conditions along with the cases conforming to each combination' (Ragin 1999: 1230). The purpose is to summarise how the causal configurations map onto the outcome across all the cases (measured in terms of sufficiency). Translating the fuzzy-set data from *Appendix 2* in this manner produces the truth table presented as Table 2.

Table 2: Truth Table I

conserv	deprived	system	urban	number	academies	raw consist. ▽
1	1	1	0	1	1	0.919471
1	1	0	0	1	1	0.853846
1	0	0	0	4	1	0.848143
1	1	1	1	8	1	0.843230
0	1	1	0	4	1	0.796888
0	1	0	0	5	1	0.795101
1	0	1	1	8	1	0.771817
0	0	0	0	4	1	0.751215
1	0	1	0	26	0	0.714076
0	0	0	1	4	0	0.709989
0	0	1	1	7	0	0.703797
0	0	1	0	15	0	0.690834
0	1	1	1	21	0	0.631632
0	1	0	1	42	0	0.580163

In Table 2, the conditions (listed in the first four columns) are presented in binary fashion, with a '1' indicating the presence of a condition and a '0' its absence. The table represents the product of this dichotomisation of the conditions, with each row presenting a logically distinct combination. Conceiving of the conditions in this fashion facilitates the assessment of subset relationships between configurations and the outcome, although the underlying data remains fuzzy-set. Following the fuzzy-set logic presented in the *Methodology*, whilst *all* cases will have a degree of membership in more than one causal configuration, there will only be a single such combination in which a case has an overall membership score exceeding 0.5 and it is to this row of the truth table that the case is allocated (tallied in the 'number' column). As four conditions are utilised, there are sixteen logically possible combinations, fourteen of which are listed in the table. The remaining two combinations were absent from the cases analysed and are referred to as "logical remainders".

The 'raw consistency' figure for each row is a calculation of the degree to which membership in the configuration is consistent with the sufficiency subset relationship, with respect to the outcome. This is undertaken for *all* cases in respect of *all* configurations, using the following formula:

$$Consistency \ (X_i \leq Y_i) = \frac{\sum[min(X_i, Y_i)]}{\sum(X_i)}$$

Where 'X' is the membership score in a configuration for observation 'i', and 'Y' is the observation's membership in the outcome.

Researcher input begins with the coding of the 'academies' (i.e. outcome) column. This requires the researcher to specify the consistency score above which a row is defined as being sufficient for the outcome. It is commonly accepted that the use of thresholds ≥0.75 are theoretically justified (Ragin 2008b; Ragin 2009; Rubinson 2013; Schneider and Wagemann 2010). This lower bound is utilised throughout the analysis, as shown in Table 1, within which all configurations displaying consistency ≥0.75 have been coded as 'positive' in the 'academies' column.

In order to produce the output analysed in step 6 of the fsQCA procedure, the configurations classified as sufficient for the outcome are condensed into an expression that represents their combination in its logically minimal form. Whilst this can be undertaken solely on the basis of the aforementioned configurations, a more parsimonious solution can be derived by utilising logical remainders in the minimisation process. The most parsimonious solution is derived through utilising all logical remainders, although it is more robust to adopt an 'Intermediate Solution', whereby the use of logical remainders is restricted on theoretical grounds. Specifically, the researcher defines whether the presence/absence of each of the conditions should generally be associated with the outcome and the use of logical remainders is limited to those that are consistent with these assumptions. As set out above, we expect the outcome to be associated with the presence of the 'Conservative' and 'Urban' conditions and the absence of the 'Deprivation' and 'System' conditions, the specification of which produces the output shown in Figure 1.

Figure 1: fs/QCA Intermediate Solution I

```
--- INTERMEDIATE SOLUTION ---
frequency cutoff: 1.000000
consistency cutoff: 0.751215
Assumptions:
urban (present)
~system (absent)
~deprived (absent)
conserv (present)

                    raw         unique
                  coverage     coverage    consistency
                ----------   ----------   ----------
~urban*~system    0.310306     0.085738     0.762111
~urban*deprived   0.208799     0.009855     0.798181
urban*conserv     0.296917     0.150640     0.732038
solution coverage: 0.474602
solution consistency: 0.724174
```

The consistency and coverage measures are used to assess the output. *Consistency* indicates the extent to which the three 'prime implicants' listed are individually sufficient for the outcome, whilst *solution consistency* provides a composite measure in this respect and, consequently, indicates the overall veracity of the output. *Solution coverage* measures the amount of the outcome explained by the output and thereby relates to the "empirical weight" of the solution. *Raw coverage* is the equivalent measure for each of the component parts of the solution, whilst *unique coverage* relates to the amount of the outcome solely explained by each.

Being essentially context-dependent, there are no categorical guidelines as to appropriate thresholds for the aforementioned measures. However, previous practice indicates that solution consistency scores of ≥0.7 tend to produce reliable results (Wagemann and Schneider 2007) and this benchmark is applied in the current context. As mentioned in the *Theory and Calibration*, the ambition in respect of solution coverage is to obtain a solution that explains a majority of the outcome, meaning a benchmark score of ≥0.5.

Applying these criteria to the output, whilst solution consistency (0.72) meets the defined threshold, solution coverage (0.47) falls just short. Thus, it was concluded that the model would benefit from further refinement. The coverage result indicates that the analysis could be improved through the introduction of an additional causal factor that could assist in explaining "more" of the outcome. Consequently, in line with the iterative nature of QCA, the research sought to identify a further causal factor to include within the second iteration of the analysis.

The fifth condition relates to the influence of the wider school marketplace, in the form of the prevalence of private schooling and its potential impact on the financial incentives for conversion. To explain, once allowance is made for any correlation with socio-economic factors (such as deprivation, which is included in the analysis), a relative increase in the proportion of privately educated pupils will tend to take the children of comparatively affluent families out of the state school system. Alongside this, it should be noted that there are perceived financial incentives for schools to convert to academy status, inasmuch as academies' funding is fully devolved, circumventing any "top slicing" by the local authority to pay for centralised services. Indeed, it seems that these incentives have been effective, as a poll of 1,471 headteachers by the Association of School and College Leaders found that almost three-quarters of the heads of converter academies thought that the change of status would help the school financially, with many admitting that money was a key factor in making this decision (BBC 2011). However, the real-terms incentive is greater in the case of schools 'that historically used fewer central services, typically those with fewer challenges in terms of social disadvantage, special needs, and so on' (Coldron et al. 2014: 393). The contention is, then, that higher levels of private schooling result in a greater relative concentration of socially disadvantaged pupils in the state school system and, consequently, reduce the financial incentive for schools to convert to academy status.[iii] The fifth condition is defined as follows:

Private (P): local authorities within which a significant proportion of school-age children attend private schools. [Inverse relationship]

Table 3: Calibration of the Additional Condition

Condition	Indicator	Range	Calibration	
Private	% pupils attending independent schools (2011)	0.0 – 52.5	0.95	20.0
			0.50	7.0
			0.05	0.0

The calibration of this condition is summarised in Table 3. For the purposes of the hypothesis, the degree of private schooling is regarded as a *contextual* condition, inasmuch as it does not relate to a direct "trigger" of academisation. Rather, it is posited to reduce the incentives for schools themselves to convert, with low levels of independent schooling thereby presenting a conducive context within which these active agents of academisation can more effectively operate. Bearing this in mind, the incorporation of the fifth condition produces Table 4.

Table 4: Truth Table II

conserv	deprived	system	urban	private	number	academies	raw consist.
1	1	1	1	0	1	1	0.942699
1	1	1	0	0	1	1	0.921085
0	1	1	0	1	1	1	0.861386
1	0	0	0	1	1	1	0.860922
1	1	0	0	0	1	1	0.854775
1	0	1	1	0	5	1	0.853960
1	0	0	0	0	3	1	0.848520
0	0	0	0	1	1	1	0.833727
0	0	1	0	1	7	1	0.824523
1	1	1	1	1	7	1	0.823227
0	1	1	0	0	3	1	0.794807
0	1	0	0	0	5	1	0.792616
1	0	1	0	0	7	1	0.792483
1	0	1	1	1	3	1	0.780379
0	0	1	1	1	3	1	0.775002
0	0	0	1	1	2	1	0.770903
1	0	1	0	1	19	0	0.749104
0	0	0	0	0	3	0	0.740593
0	0	0	1	0	2	0	0.730277
0	1	0	1	1	10	0	0.723750
0	1	1	1	1	6	0	0.715165
0	0	1	1	0	4	0	0.714874
0	0	1	0	0	8	0	0.689367
0	1	1	1	0	15	0	0.666094
0	1	0	1	0	32	0	0.612004

Five conditions produce thirty-two potential configurations, twenty-five of which are present, leaving seven logical remainders. Although the ratio of logical remainders is increased in this iteration of the analysis, over three-quarters of the possible configurations are present, thereby providing a robust empirical grounding for the analysis and effectively eliminating concerns regarding the *problem of limited diversity* (see Berg-Schlosser and De Meur 2009). The intermediate solution was produced using the same specifications as before, with the additional stipulation that the outcome should generally be associated with the absence of the 'Private' condition.

Figure 2: fs/QCA Intermediate Solution II

```
--- INTERMEDIATE SOLUTION ---
frequency cutoff: 1.000000
consistency cutoff: 0.770903
Assumptions:
~private (absent)
urban (present)
~system (absent)
~deprived (absent)
conserv (present)

                                  raw        unique
                               coverage     coverage     consistency
                               ----------   ----------   ----------
~urban*deprived                0.208799     0.053090     0.798181
~private*conserv               0.349711     0.037027     0.800000
urban*conserv                  0.296917     0.049838     0.732038
private*~deprived*~conserv     0.278178     0.099521     0.747909
~system*conserv                0.264677     0.010137     0.830389
solution coverage: 0.606504
solution consistency: 0.704036
```

As shown in Figure 2, the introduction of the fifth condition substantially increases solution coverage (0.61), which now comfortably exceeds the defined acceptance threshold. Solution consistency (0.70) also qualifies against the equivalent threshold. Consequently, the solution merits consideration. The solution has five 'prime implicants', which can be reduced as follows:

$$A \geq uD + pC + UC + Pdc + sC$$

$$\geq C*(s + U + p) + cdP + Du$$

In Boolean algebra, 'addition indicates logical OR and multiplication indicates logical AND' (Ragin 1987: 92). Thus, the above translates into the assertion that the following three categories of configuration are sufficient to result in a high degree of academisation:

1. A Conservative-run local authority, combined with an underperforming school system, an urban context, or low levels of private education uptake;
2. The combination of a non-Conservative administration, low levels of socio-economic deprivation and high levels of private education; or
3. The combination of high levels of socio-economic deprivation with a non-urban context.

The unique coverage scores demonstrate that the first two categories have approximately twice the empirical relevance as the third category.

In concluding the analysis, it is important to undertake an assessment of whether any of the conditions display a necessity relationship in respect of the outcome. Again, this is measured with respect to consistency, although here each of the conditions is analysed separately, using the equation:

$$Consistency\ (Y_i \leq X_i) = \frac{\sum[min(X_i, Y_i)]}{\sum(Y_i)}$$

The stipulation of higher consistency thresholds is required for the determination of a necessity relation, with the literature typically recommending that only scores ≥0.90 merit consideration (Maggetti and Levi-Faur 2013: 199; Vis 2012: 186).

Table 5: Necessity Assessment

Condition	Consistency	Coverage
Conservative	0.49	0.64
~Deprivation	0.67	0.59
~System	0.60	0.57
Urban	0.69	0.51
~Private	0.74	0.58

Table 5 demonstrates that all five conditions fall significantly short of the necessity consistency threshold and, as such, this paper's conclusions focus on the sufficiency solution previously derived.

With the analysis complete, we can progress to its interpretation (step 7), which is undertaken in line with the three-part categorisation of the sufficiency solution's components. The first configurational category is entirely in line with the theoretical assumptions, inasmuch as high academisation is associated with the presence of the 'Conservative' and 'Urban' conditions and the absence of the 'System' and 'Private' conditions. Moreover, this category provides a direct validation of the paper's hypothesis, in that the configurations all contain a generative mechanism (i.e. a Conservative-run local authority) combined with a contextual factor (i.e. an underperforming school system, an urban context, or low levels of private education uptake).

Although still corroborative of the hypothesis, in conjoining mechanistic and contextual conditions, the second category's components are not neatly aligned with the theory, with both the 'Conservative' and 'Private' conditions being inverted in this respect. However, the fact that the 'Deprivation' condition *does* align with the theory enables generative capacity to be ascribed to socio-economically "enabled"

promoting agents. Building on this, it seems that the socio-economic mechanism only "triggers" in instances where the other potential mechanism (a Conservative local authority) is manifestly absent (hence the 'c' in the configuration). Furthermore, this mechanism appears to require the context of relatively high levels of private schooling for causal efficacy. The reasons for this are open to interpretation, although it seems plausible that heightened parental awareness of competiveness in the school marketplace may play a role. That is, the presence of greater degrees of private schooling in an area may be driving parents involved in the state school system (in partnership with other interested parties, such as headteachers) to develop competitive alternatives to independent schooling, adopting the free schools and academies programme as the vehicle in this respect. Such an interpretation is corroborated by research showing that the aims of free school proposers from advantaged socio-economic contexts tended to focus on the development of schools 'with traditional conservative values on behaviour, dress and ethos combined with a curriculum focused on academic subjects' (Higham 2014a: 130), with one parent promoter being quoted as aspiring to replicating an independent school culture.

Although the third category includes both a mechanistic and contextual condition, the fact that they are both inverted relative to the theoretical expectations complicates interpretation. It is therefore appropriate to undertake a case-level analysis. Taking a lead from Vis (2011), Table 6 lists those local authorities that are both members of the outcome group (i.e. an 'Academisation' score ≥0.5), as well as *exclusively* displaying the presence of the third configurational category (i.e. scores ≥0.5 against 'Du'). The purpose is to locate the principal exemplars of the specified sufficiency relation and identify whether there are any patterns in this respect.

Table 6: Case-level Analysis of 'Du'

Case	A	Du
Barnsley	0.78	0.51
Calderdale	0.52	0.52
Doncaster	0.86	0.57
Redcar and Cleveland	0.77	0.69
Rotherham	0.96	0.50
Thurrock	1.00	0.53
Wakefield	0.96	0.53

Reviewing Table 6, at six of seven cases, the geographical concentration in Yorkshire is significant enough to suggest that there may be factors specific to this region driving the observed levels of academisation. Such factors could include localised "chain wars" between Multi-Academy Trusts (Chapman 2013) and/or whether a competitive or collaborative discourse dominates in the area (Smith and Abbott 2014). Detailed exploration of such unique conditions is beyond the scope of this paper, although it represents a promising avenue for further research. More

generally, the unique coverage of this category is substantially lower than the preceding two, which is indicative of its being less empirically relevant. Thus, it would seem best to consider this element of the solution as simply a descriptive shorthand for the cases it exclusively refers to and disregard it in forming general conclusions. Indeed, removing this configuration has a negligible impact on solution consistency (which remains above 0.70) and a small effect on solution coverage (which reduces to 0.55). Since both consistency and coverage remain above the defined acceptance thresholds without this configuration, it is safe to regard these as exceptional cases. Thus, the *generalisable* solution becomes:

$$A \geq C^*(s + U + p) + cdP$$

It is worth emphasising that this is a general solution, to which there are exceptions (as evidenced by the sub-100% consistency). Consequently, the formula is most appropriately regarded as "usually sufficient" for the outcome. However, the solution does confirm the paper's hypothesis that both mechanistic and contextual factors are necessary elements in delivering high rates of academisation.

Conclusion

Throughout this paper, we have explored the prominent role that the academisation of England's schools has played within successive Governments' education policy, with a focus on establishing the causal factors that have supported greater rates of academisation. The analysis demonstrates that, although the conditions do broadly operate as expected, they do so as part of causal combinations and, as such, the use of QCA as an analytic tool has been fully justified. Additionally, it has been shown that none of the factors analysed represents an overarching *necessary* condition with respect to high levels of academisation. Rather, necessity manifests itself with respect to the requirement for the presence of at least one mechanistic and one contextual factor. Thus, in line with the hypothesis, it can be concluded that local authorities that do not demonstrate such a combination of factors will be unlikely to deliver high levels of academisation, in the present context.

At the start of this paper, reference was made to the general policy trend towards full academisation and it is appropriate to consider the implications of this paper's conclusions for policy-makers involved in this field. Critically, the fact that high levels of academisation have typically been associated with Conservative or relatively non-deprived local authorities indicates that more could be done to broaden the appeal of the programme. Certainly, of the two mechanisms, a Conservative local authority seems to be the dominant factor, inasmuch as it has causal efficacy when combined with *any* of the analysed conducive contexts and, further, since the socio-economic factor only comes to the fore *in the absence* of the Conservative mechanism (and in limited circumstances). However, as it is unlikely that policy-makers will be able to

convince ideologically opposed local authorities to promote the programme, consideration could be given to enabling a wider range of social actors to act as agents for change. To achieve this, thought needs to be given to what contexts (or incentives) might motivate the active engagement of such actors, in a manner akin to the competitive dynamic that has been hypothesised as driving the involvement of socio-economically "enabled" groups. Furthermore, in considering these wider structural factors, we should not lose sight of the fact that the key agents of academisation (at least, in terms of academy conversions) are the schools themselves. This was partially acknowledged in the structuring of the 'Private' condition, in respect of the financial motivations at play, which do seem to have causal influence (as evidenced by the configuration 'Cp'). As such, a key element in stimulating academisation in the absence of the identified structural mechanisms could be developing a broader range of incentives that connect directly with schools themselves.

As noted at the start of this paper, the literature on the causal factors underpinning academisation is sparse and this paper, whilst filling a portion of the identified gap, is limited in its scope. In particular, it is worth noting that the "causal period" (2010-2017) considered is relatively extensive and it is quite possible that the causal configurations identified may have shifted in relative importance over the period of analysis. Indeed, in addressing this causal period as a whole, the conclusions drawn are necessarily broad and a more detailed exploration of recent trends may uncover further causal patterns underpinning the move to progressively greater levels of academisation. Consequently, this represents an interesting subject for further exploration, with the high rates of academisation in the Yorkshire region presenting a promising avenue for detailed further research, especially in light of the recent collapse of the Wakefield City Academies Trust (BBC 2017) and its possible link with the systemic factors driving academisation in the region. As noted by Fenwick-Sehl (2013: 189), the rapidly changing nature of the academies programme makes it 'impossible to predict how the landscape of educational provision will appear even one year from now'. Therefore, this area merits further consideration, both now and in the future.

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[i] It is worth noting that whilst research shows that a majority of free schools have been established in the 50% most deprived Lower Super Output Areas (Higham 2014a), it could be that they are located in deprived areas of otherwise relatively affluent local authorities, which is compatible with the relationship posited in this paper.

[ii] Except for the 'Conservative' indicator, which reflects the period as a whole.

[iii] As grammar schools could have a similar effect as private schools in this respect, the authors ran an additional analysis that included the presence/absence of such schools as a separate condition. This analysis generated a solution coverage and consistency score that hardly differs from the one presented in the current paper. Moreover, its output was exceedingly complex, including many combinations with three or four conditions. This, we felt, obfuscated rather than contributed to the development of theoretically useful propositions with wide applicability. We therefore decided to omit grammar schools from the ultimate analysis. The output of this additional analysis can be obtained from the authors upon request.