

## Defining local economies beyond their boundaries

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# Defining local economies beyond their boundaries

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## ABSTRACT

Local economy is conventionally defined through political administrative units. The continuity of this approach has been challenged as more networked forms of economy have evolved. In response, local economies are increasingly reconfigured around city-regions, on presumption of linking network potential with local dynamics. Such challenges present several problems for practitioners in local economic governance. This paper examines the continuity between city-regional articulations of local economy units (LEU) and localised dynamics. Using lower-tier localities in Staffordshire, UK, reconfigured into the Greater Birmingham & Solihull city-region, it uses a location quotient to examine industrial concentration as a determinant of related variety. It extrapolates these concentrations to define LEUs and examine their continuity with formal political designation. It argues growing dependence on the city-region is a partial representation which ignores industry-based approaches and the need for plurality in defining local economies. Adopting such approaches may be of value to local government policy practitioners.

**KEYWORDS** Local economy; sub-national governance; networks; related variety; smart specialisation

## Introduction

Local economic governance in the UK has seen significant reconfiguration during the past decade. Introduction of the Local Economic Partnerships (LEP), creation of Combined Authorities, and adoption of elected Mayors in certain areas has run alongside the need for changing practices in response to public sector austerity and ongoing settlement reductions for local government. Incorporating several functional changes and reconfigurations, specifically to compensate for the loss of NGOs, a key element of this transition has been a changing spatial picture.

Challenging the spatial configuration of local economic governance has been fundamental to the LEP project. Founded on a platform of rejecting artificial boundaries imposed by the Regional Development Agencies (HM Government 2010), LEPs were invited to create their own geographies

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through state-market dialogue employing the principle of the functional economic area (FEA) (Fox and Kumar 1994).

One of the most notable outcomes of this approach was a more plural form of local economy across England. Here, several LEPs incorporated overlapping geographies as they sought to configure FEAs with not only their own political boundaries but a diversity of sectors and thus transactional geographies.

Publication of the LEP review, 'Strengthened Local Enterprise Partnerships' (HMG, 2018) has once more called to reconfigure sub-national economic governance arrangements. Providing a more prescriptive role for LEPs from guidance offered at their inception, the review is explicit that such overlapping 'dilutes accountability and responsibility for setting strategies for places' and thus 'seek to ensure that all businesses and communities are represented by one Local Enterprise Partnership' (HM Government 2018, 7).

Such prescription creates a new tension for local economic governance arrangements. Adoption of the FEA approach was a response to the fragmentation of local economies through both ongoing challenges in production and transaction occurring via trade deregulation and technological advancement (Oinas, Trippi, and Höyssi 2018) and the regressive effect of standardised policies applied to local contexts (Jones 2001; Harrison 2010a). Response from the state has been to focus on the role cities play in creating agglomeration economies and thus gravity effects (Martin and Sunley 2011; Harrison and Heley 2015). A number of policies have thus been introduced to establish local economy units (LEU) as a concatenation of localities formed around a core urban centre and interacting through a core-periphery relationship.

This response poses two specific risks. First is a presumption that geographic proximity equals economic dependence, with a growing school arguing tendencies towards geographical fragmentation of the economy (Arndt and Kierzkowski 2001; Dicken 2007). Second is a failure to develop holistic and robust understandings on the complex set of economic interactions and dependencies occurring within local authority areas (Coombes 2014; Harrison and Heley 2015). Both present a continued challenge to local government in relation to its ability and capacity to identify and thus respond appropriately to the needs of their local economy.

This article examines the relationship between reform in the articulation of LEUs and the structure of economy using industrial concentration. It uses a case study of five localities in Staffordshire, UK, absorbed into the Greater Birmingham and Solihull (GBS) city-region. Applying a related variety approach to defining local economies, it explores the political reform of the study area following the introduction of the LEPs and its concomitance with the concentration and spatial distribution of related industry. In response to calls for a rationalisation of how LEUs are defined, it argues the need at the

local level to incorporate broader techniques and levels of critical inquiry in order for local government to form effective interpretations and units of intervention in the governance process.

The following section explores debates on the structuring and dynamic nature of local economy and sets out the research objectives. Following this, the study area is introduced, considering how it has been interpreted as a LEU through phases of political restructuring, and the methods discussed. The paper then progresses analysis of this structuring of local economy using a related variety approach. It closes with discussion on the implications of these findings for ongoing changes to local economic geographies in England alongside how local government defines local economies.

### **Defining local economies: political and relational constructs**

This paper commences with a simple question: how do we define local economy? Historically, this has been seemingly straightforward, determined through the formation of local economy units (LEU) linking markets and their regulation (Lefebvre 1970). Ongoing waves of trade deregulation and communication advancement have however raised questions on this approach (Oinas, Trippl, and Höyssä 2018). In place of a singular and static model of local economy bound to administrative geographies, a more networked form has emerged. This shift requires a fundamental re-evaluation of how the concept of local economy conforms with that of LEUs and local government.

This section examines the changing relationship between local economy and local governance, and how the state has sought to reform its approaches. Drawing on literatures on networked economic practice, regional development, and state spatial strategy, it discusses changes in the structuring of LEUs and how these (re)interpret relationships between economy and place. In doing so, it outlines deficiencies in attempts to reconcile the political economy of bounded administrative units with the networked practice of contemporary economic production.

#### ***Local economy as a networked concept***

A significant literature has emerged over the past 30 years on the nature of local economy and how it fits within broader systems of production. Swyngedouw (1997) argued the local is integral in an increasingly globalised economy through which localised resources and global demand are integrated. More recently however, debates have turned to consider the contested nature of the local, in both its political and geographic forms (Cochrane 2016). Whilst a growing thesis argues sub-national scales are a more effective governance unit to the nation-state (Storper 1997; Jones et al. 2005), processes of regulatory liberalisation and communication

advancement have reconfigured conventional relationships between, and thus interpretations of, production and space (Oinas, Trippl, and Höysä 2018).

As a result, economy is increasingly interpreted as relational rather than bounded, and determined through networked relationships (MacLeod and Jones 2007; Jones 2009; Jonas 2012; Goodwin 2013). Ongoing effects of industrial redistribution policies (Dicken 1982; Hall 2002; Tallon, 2013) and firm-based entrepreneurial responses (Nelson and Winter 1982; Spithoven, Clarysse, and Knockaert 2010; Salder and Bryson 2019) have seen the fragmentation of localised economic activities (Arndt and Kierzkowski 2001; Dicken 2007). Thus, production is more appropriately conceptualised through scaled networks (Allen, Massey, and Cochrane 1998) or fields of potential (Andersson and Karlsson 2004). For local government and the governance of local economy, this presents several significant issues. Most prevalent here are those of effectively interpreting the nature of a more polymorphous form of local economy and thus identifying how best to implement effective systems of governance.

### ***Redefining local economy: the role of related variety***

Fragmentation within the functioning of local economy has challenged more conventional, bounded approaches to understanding local systems. As a result, several explanations have been proposed in relation to how local economy can be conceptualised as part of a set of dispersed production systems. One explanation prominent in both academic and policy debates is that of complementarity, or related variety (Frenken, Van Oort, and Verburg 2007; Boschma and Frenken 2011). Related variety offers a foundation for defining local economy more sophisticated than historic administrative boundaries or associations, prioritising the interactions between specific firms and regionally situated knowledge institutions (Agrawal & Cockburn, 2003; Youtie and Shapira 2008). This interaction builds 'knowledge domains' (Foray, 2009), a defined spatial unit which contains distinctive sets of knowledge, aptitude, behaviour, and professional discourse (Cooke and Morgan 1998; Hall and Soskice 2001).

Capturing these knowledge domains is a critical element in smart specialisation approaches to local economic development. Smart specialisation has become increasingly prominent in economic development policy in recent years. In particular, its proposition of forming knowledge-based, actor-led and spatially-integrated approaches has gained favour with policy organisations seeking to reconcile an ongoing separation between policy objective and local context (Peck et al. 2013; Bergholz 2018); a key challenge reform in the UK's sub-national governance arrangements sought to address (HM Government 2010).

Critical to smart specialisation is determining the right domains for intervention (Foray, David, and Hall 2011). Two specific dimensions are critical here; the spatial, through which a geographic area is determined, and the relationship between knowledge and industry specialisation within that geographic area (Foray 2009). Here, the industrial element is integral, both tradability and knowledge complementarities occurring more prominently amongst sectors which are knowledge-based and display export potential (Cantwell 1994; Boschma and Iammarino 2009).

Smart specialisation's focus on knowledge-sector dynamics may suggest an explicit link with more networked models of economy. For its application as a policy tool, these dimensions require translation to clear spatial contexts (Hildreth and Bailey 2014; McCann and Ortega-Argiles 2015). Here the link between smart specialisation and local economic governance becomes explicit, with smart specialisation utilised as an integral concept in the reinterpretation of local economy and reform of its representative units.

### ***Local economic governance: an evolution***

Transition towards more networked economic practice has required a distinct response from the state. Embodied by a shift towards multi-scalar modes of governance incorporating supra- and sub-national scales (Jones et al. 2005; Gardner 2017), pursuit of an optimum scale of intervention (Jones 2001) has seen ongoing reform to sub-national economic governance arrangements in response to escalating internal and external challenges (Harrison 2010b; Askim et al. 2017). Within the UK, numerous rounds of spatial reconfiguration have occurred recently, progressing from regions to city-regions to FEAs, and most recently Combined Authorities (Harrison 2010b; Pemberton and Morphet 2014).

Despite this reconfiguration, processes of restructuring have to some extent seen ongoing reiterations of the same problem. Recognition of a need to more explicitly link spaces of governance with the location and distribution of industry has not stymied tendencies towards generic and plagiarised policy and intervention (Harrison 2010a; Fricke 2020). Thus, issues of the singularity of bounded models (Agnew 2013) are only partially addressed, whilst presumed autonomy applied through the LEP/FEA approach introduced in 2010 is framed within an overriding process of top-down governance (Bailey and Wood 2017). As a result, deficiencies in previous articulations of LEU have sought to be mitigated through generic adoption and application of the preferred city-regional model (Martin and Sunley 2011; Harrison and Heley 2015).

Cities have become an integral dimension of recent sub-national governance arrangements. As a result, local economy is increasingly framed as part of a conventional core-periphery model linking population centres to

hinterland (Park and Burgess 1925), a structure reinvigorated through the presumed concentration-agglomeration benefits cities offer in innovation, production, accumulation, and network-formation (Hall 2003; Bettencourt et al. 2007; Swianiewicz 2018).

Several issues are prevalent in the city-regional approach to defining local economy. Documented externalities and concentration-agglomeration benefits are principally founded on a tendency to research successful or major cities; the application of these dynamics to less-successful or secondary cities may be misplaced (Markusen, 1999; MacKinnon, Cumbers, and Chapman 2002; McCann and Ortega-Argiles 2015). Structuring LEU's around cities is highly prejudicial of certain industries. Here, the advantages offered such as borrowed size or agglomeration shadow (Burger et al. 2015; Meijers and Burger 2017) often overlook local dependence on certain traditional industries and their esoteric production patterns (Vaessen and Keeble 1995; Johnstone and Lionais 2004; Hamdouch, Demaziere, and Banovac 2017). Both governance arrangements and related network types create an *a priori* version of local economy through intervention design and its distribution of activities (Skelcher 2017; Blackmond Larnell 2018). Despite notable reorganisation in governance arrangements, the extent to which these represent the distinctive needs of different local areas remains an open question (Coombes 2014; Harrison and Heley 2015; Fricke 2020).

Methods of defining LEU's have witnessed significant disruption through progression towards more networked modes of production. The state spatial response has seen a move towards defining the local principally in the context of a reconfigured geography focused on cities under a presumption city-based concentration-agglomeration serves as the primary determinant of local economy and foundation of related variety. Several deficiencies are here prevalent. First, it creates structure to fit defined spaces as opposed to building space around structure; place is thus prioritised over industry. Secondly, it focuses singularly on a core-periphery hierarchy of dependence within city-regional geographies. Thirdly, it presumes the integration of concepts of concentration-agglomeration and related variety. Finally, whilst the reconfiguration of local economy has to some extent occurred through a process of spatial reform at the regional scale, this has run parallel to a continued erosion of the role of local level institutions (McCann 2016). As a result, ongoing calls for greater levels of localised representation linked to failures of economic governance (Dijkstra, Poelman, and Rodríguez-Pose 2019; Rodríguez-Pose, 2018) illustrate the need for further reconfiguration. This includes scope for an enhanced role for local government in not only local economic governance but the identification and implementation of LEUs. This paper contributes to this call by both undertaking an analysis of links between LEU and local economic structure and illustrating a means through which local government and governance actors may take a more critical approach to defining LEUs. To achieve this, it uses a case study of local economies within the GBS city-region, UK, examining first the



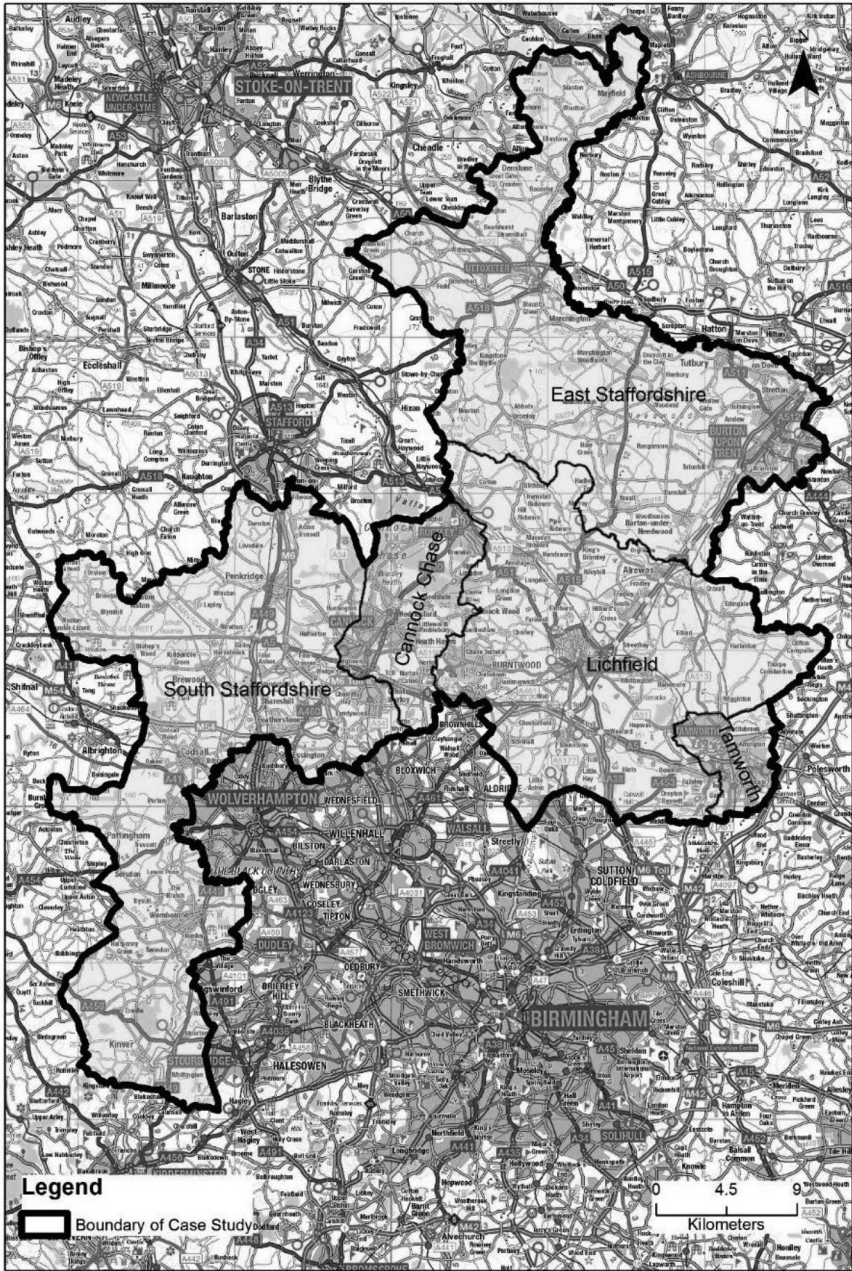
reconfiguration of LEU followed by constructing local economy through a related variety approach using industrial concentration.

### **Restructuring the local: the case of southern Staffordshire and greater Birmingham**

State spatial reform has represented a key element of the governance transformations which occurred in England following the change of government after 2010's General Election. Dissolving the preceding Regional Development Agencies (RDA), a new set of organisations were established. LEP's are distinctive from the RDAs in three specific ways: they are organisations separate from the machinery of government offering certain levels of autonomy to local stakeholders; they incorporate direct involvement of business communities through Board representation requirements; and at inception they saw some autonomy in relation to the arrangement of their geography. This autonomy not only disrupted embedded regional and local maps, applying the logic of the FEA (Fox and Kumar 1994) over that of established LEUs, but also allowed flexibility around the plurality of local economy, introducing a number of overlapping LEP areas. Of these overlapping arrangements, one incorporated the study area of Southern Staffordshire.

Southern Staffordshire (SST) is the collective name given to five lower tier local authority areas – Cannock Chase, East Staffordshire, Lichfield, South Staffordshire, and Tamworth (Map 1). Historically in Staffordshire county, and thus under the jurisdiction of Staffordshire County Council, certain dynamics within the SST localities have challenged the stasis of this two-tier relationship. Critical here has been emergence of the city-region in state spatial policy. The city-regional agenda has been explicitly patronised by recent governments through both city-deal funding for LEPs and the formation of Combined Authorities in major metropolitan areas with directly elected Mayors. Prior to such initiatives however, city-regions had been identified as 'engines of economic growth' and 'building blocks in the national fabric' through the Urban Task Force report (Urban Task Force 2005, 4). In 'A Framework for City-Regions', the ODPM explicitly positioned city-regions as of 'greater economic and cultural resonance than current administrative regions and local authority districts' (ODPM, 2006, 1).

Such changes occurred through recognition of a shifting dynamic between sub-national administrative areas. Ongoing expansion and growth in cities, structural transformation of the economy, and the extent of dependence between an urban core and its periphery or hinterland blurred existing administrative boundaries. Focus upon cities as a policy panacea, where concentration-agglomeration is presumed to lead to externality gains, has become the principal template for intervention. This approach had two distinct effects on the reconfiguration of LEUs; first, pressure to identify as



**Map 1.** Southern Staffordshire study area Source: University of Birmingham, produced under licence from Ordnance Survey

or align with a spatial designation consistent with central policy objectives, specifically city-regions, and second, to do so to gain access to government sponsorship or patronage.

The shifting geography of SST has been framed through policy objectives following the 2010 general election. As part of the West Midlands (WM) industrial heartland of the UK, rhetoric of rebalancing the economy through greater sectoral diversity was popular in places such as SST. Employment in manufacturing here remains strong despite industrial decline in the UK. The route to investment supporting this sector in SST has been through integration in the city-region, underpinned by the labour mobility relations and comparative industrial heritage between Birmingham and SST. Through the LEPs more permissive spatial approach, the relationship between SST and Birmingham as a core city became official in an invitation to join the GBS LEP. As a result, the LEU of SST evolved towards that of the city-region on a basis of travel-to-work and presumption of industrial heritage underpinned by a manufacturing-based related variety.

## Methods

The analysis in this paper defines local economy using industrial concentration as a form of related variety (Cantwell 1994; Boschma and Iammarino 2009). Identifying the key industries here uses a Location Quotient (LQ) method, measuring industrial concentration at the local level against a defined baseline where a strong concentration is one equalling or greater than 1.5. The LQ was selected as it addresses two critical factors; variance, the degree of deviation, and magnitude, the extent of localised specificity (Mack and Jacobson 1996). The LQ here uses sector-based workplace employment as the determinant of industrial concentration. This approach conforms to a convention used in determining local economic structure through its labour force whilst allowing for a measure which both emphasise local industry – as opposed to the resident-based employment often preferred – and applies a metric with readily available data. This compared employment concentration data from the Business Register & Employment Survey (BRES) from 2010 at SIC Broad Industrial Group. The analysis compared concentrations in SST local authorities against figures for England, used in place of the UK due to regional reform, and therefore the context of this paper, being specific to the English regions.

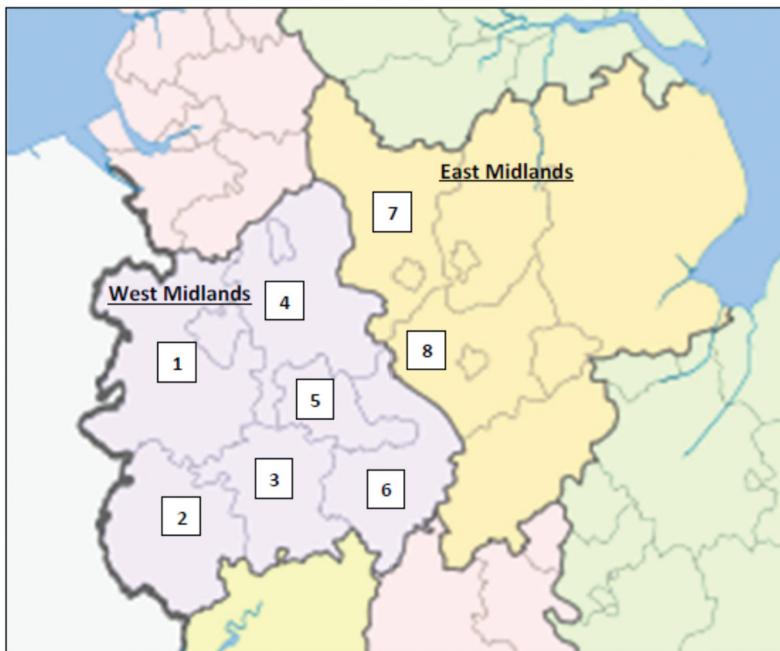
Unpicking the structural analysis and moving towards building LEUs used key sectors at a more refined level. For this, the SIC Division (2 digit) level was used, allowing a more granular examination of industrial concentration at the local level. This approach again used the LQ, local employment in the sub-sector compared against proportional rates for England. The specific sub-sectors concentrated within SST were then examined across proximate

localities in the West Midlands and moving into parts of the East Midlands as adjoining localities to SST (Table 1; Map 2).

This analysis uses secondary data obtained from the BRES, the data created using a survey sample weighted up to represent the national economy.

**Table 1.** Local authority areas.

Local Authority	County/Sub-Region
Cannock Chase; East Staffordshire; Lichfield; South Staffordshire; Tamworth Birmingham; Solihull; Dudley; Sandwell; Walsall; Wolverhampton	Southern Staffordshire West Midlands Conurbation
Newcastle-under-Lyme; Stafford; Staffordshire Moorlands; Stoke-on-Trent Herefordshire	Stoke & Staffordshire Herefordshire
Shropshire; Telford & Wrekin	Shropshire
Coventry; North Warwickshire; Nuneaton & Bedworth; Rugby; Stratford-on- Avon; Warwick	Coventry and Warwickshire
Bromsgrove; Malvern Hills; Redditch; Worcester; Wychavon; Wyre Forest Amber Valley; Derby; Derbyshire Dales; Erewash; South Derbyshire Blaby; Charnwood; Hinkley & Bosworth; Leicester; North West Leicestershire	Worcestershire Derbyshire Leicestershire



1	Telford and Shropshire	5	Birmingham and the West Midlands Conurbation
2	Herefordshire	6	Warwickshire
3	Worcestershire	7	Derby and Derbyshire
4	Stoke and Staffordshire	8	Leicester and Leicestershire

**Map 2.** Study area at county/unitary level Source: Modified from [https://en.wikipedia.org/wiki/File:English\\_regions\\_2009.svg](https://en.wikipedia.org/wiki/File:English_regions_2009.svg), Attribution: Nilfanion and Dr Greg, © Wikipedia Commons under Creative Commons Attribution-sharing alike 3.0 licence

Benefits of this database are its ability to provide detailed industrial data at highly localised geographic levels. It should be noted however that the quality of its estimates deteriorate as geographies get smaller. The analysis has been conducted on the basis of workplace-based employment; these figures do not differentiate between locally-registered and locally-based employees; neither are they sensitive to the use of personnel recruited through employment agencies.

### **Industrial concentration as a regional determinant: data from southern Staffordshire**

In undertaking the analysis, the initial task is identifying key industries within SST. Following this, further refinement to establish a more granular understanding of local industrial structure is required; the historic and culturally-specific dimension articulated through sub-sectoral analysis provides a more detailed and distinctive interpretation (Cooke and Morgan 1998; Hudson 2004). From this interpretation a structural comparison is applied to surrounding localities in the Midlands to construct a more contextual picture of local economy via sub-sectoral distribution.

#### ***Key sectors***

To define key sectors in the study area a LQ was applied to workplace-based employment data. Using England as the comparator, this identified concentrations in SIC Broad Industrial Groups. As part of the WM, the enduring cultural-economic identity in SST is rooted in manufacturing, the legacy of resource-based backward and amenity-based forward linkages (Dicken 1982). This however runs against a national profile transitioning from production towards service-based occupations.

Representation of service-based industry diverges from such tendencies in SST. Distribution of workplace-based employment within the area shows a lower proportion of jobs in knowledge-based services (Banking, Financial, Insurance; Public Administration, Education, Health) and higher dependence on consumer-based services, construction, and manufacturing. Deviation specifically in manufacturing shows a notable increase of over five percentage points from the national (England) profile towards SST (Table 2). Implying a stronger concentration, and therefore greater magnitude, of certain industries within SST, applying a LQ to the data offers a clearer picture of any deviation. Using aggregate data for the five SST localities, Manufacturing solely displays a strong concentration, with an LQ score of 1.6 (Table 3).

**Table 2.** Proportional distribution of employment by sector.

Sector (SIC Broad Industrial Group)	Southern Staffordshire	West Midlands Region	England
Agriculture	0.4%	1.9%	1.4%
Utilities	1%	1.2%	1%
Manufacturing	14%	12%	8.7%
Construction	7.2%	5%	5.2%
Distribution, Hotels, Restaurants	27%	23.7%	23.1%
Transport, Communications	8.4%	7.8%	8.6%
Banking, Financial, Insurance	15.9%	16.8%	21%
Public Admin, Education, Health	22%	27.2%	26.3%
Other Services	4.3%	4.3%	4.6%

Source: BRES, 2010

### ***From key sectors to key sub-sectors***

Using Manufacturing as the defined key sector, considering local distinctiveness of this industry requires further refinement. Manufacturing incorporates 24 separate SIC sub-sectors. As concentration of manufacturing employment diverges from the national profile in SST, similarly sub-sectoral distribution varies. Almost 80% of manufacturing jobs in SST occur in nine of these 24 manufacturing sub-sectors. Across these nine key sub-sectors, the level of concentration is strong almost uniformly as each represents a higher proportion of employment against the national profile, the LQ score falling short of a strong concentration for only one – Food Production (Table 4). Using these sub-sectors as the foundation of related variety, the analysis considers their concentration beyond SST to incorporate its surrounding localities in defining local economy.

### ***Sub-sectoral distribution as local economy***

SST sits both administratively within Staffordshire and for economic governance in the FEA of GBS. In addition, it shares borders with multiple other localities within the East and West Midlands. Considering for regional association and adjoining location, this creates a wider area of 40 adjoining or proximate localities. Dependent on your location within SST, transactional relationships through what are seen as key functional areas vary significantly.

Accommodating these complex relationships into the analysis, these wider Midlands localities were taken into consideration in creating a related variety picture of LEU. In the first instance this involved testing for structural similarity through LQ-based concentration in the identified key manufacturing sub-sectors across this wider Midlands area (Figure 1). Replication of at least one of the nine sub-sectoral concentrations found in SST were observed across all 40 adjoining localities; 63% (25) displayed concentration in at least four of this nine. The location of these concentrations across the Midlands study area showed distinctive manifestations and distributions for each sub-sector (Appendix 1).

**Table 3.** Concentration of key sectors by location quotient.

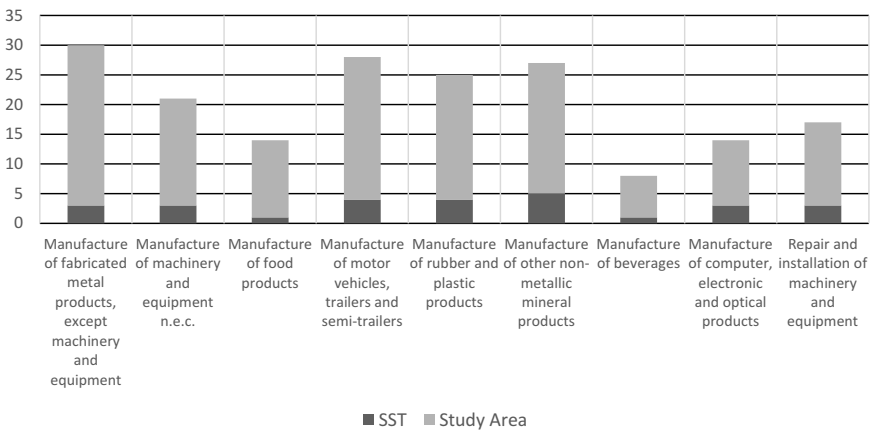
	Cannock Chase	East Staffordshire	Lichfield	South Staffordshire	Tamworth	Southern Staffordshire	West Midlands
Agriculture	0.1	0.1	0.1	1.0	0.0	0.3	1.4
Utilities	0.4	0.6	1.3	<b>2.4</b>	0.4	0.9	1.2
Manufacturing	<b>1.6</b>	<b>2.1</b>	1.2	1.4	1.4	<b>1.6</b>	1.4
Construction	<b>1.8</b>	1.1	1.3	<b>1.5</b>	1.4	1.4	1.0
Distribution, Hotels, Restaurants	1.4	1.0	1.2	1.1	1.4	1.2	1.0
Transport, Communications	1.1	1.0	1.0	0.8	0.9	1.0	0.9
Banking, Financial, Insurance	0.5	0.8	0.9	0.7	0.9	0.8	0.8
Public Admin, Education, Health	0.8	0.9	0.8	1.0	0.6	0.8	1.0
Other services	0.6	0.8	1.3	1.0	0.9	0.9	0.9

Source: BRES, 2010

**Table 4.** Manufacturing sub-sector concentrations.

	England: % jobs	SST: % jobs	SST: LQ
Manufacture of fabricated metal products, except machinery and equipment	1.1%	2.2%	2.13
Manufacture of machinery and equipment n.e.c.	0.7%	2.0%	3.01
Manufacture of food products	1.2%	1.7%	1.43
Manufacture of motor vehicles, trailers and semi-trailers	0.5%	1.0%	2.02
Manufacture of rubber and plastic products	0.5%	0.9%	1.69
Manufacture of other non-metallic mineral products	0.3%	0.9%	2.95
Manufacture of beverages	0.1%	0.9%	8.41
Manufacture of computer, electronic and optical products	0.5%	0.8%	1.67
Repair and installation of machinery and equipment	0.4%	0.6%	1.60

Source: BRES, 2010

**Figure 1.** Sub-sectoral concentrations across the midlands study area (count of 40). Source: Author, using ONS BRES data (2010)

This mapping, despite sub-sectoral distinctions, illustrates specific tendencies in terms of spatial patterning and distribution inferring structural similarity between SST and certain adjoining localities. This similarity does tie SST structurally into the GBS city-region, but equally connects it into the administrative county of Staffordshire (North Staffordshire). These associations are rarely singular or absolute, displaying high levels of plurality across potential LEUs.

What emerges is a spatial patterning positioning SST as part of both a regionally dispersed and more locally clustered set of plural economies. Where this is regionally dispersed, a concentration can be observed across the wider Midlands area, including structural similarity between non-adjoining localities. Patterning is most prominent in the case of Manufacture of Motor Vehicles (Appendix 1), indicative of this industry's historic presence in the Midlands. Where patterning is more locally focused, concentrations occur in a smaller, more



**Table 5.** Spatial patterning and distribution by sub-sector.

Sub-sector	Spatial Pattern	Spatial Distribution
Manufacture of fabricated metal products	Regional dispersal	Regional spread
Manufacture of machinery and equipment n.e.c.	Localised concentration	Northern horizontal
Manufacture of food products	Localised concentration	North-East vertical
Manufacture of motor vehicles	Regional dispersal	Regional spread
Manufacture of rubber and plastic products	Localised concentration	Northern horizontal
Manufacture of other non-metallic mineral products	Localised concentration	Northern horizontal
Manufacture of beverages	Specialist node	Dispersed
Manufacture of computer, electronic and optical products	Localised concentration	North-East vertical
Repair and installation of machinery and equipment	Localised concentration	Northern vertical

proximate, and often contiguous set of localities, such as for the Manufacture of Machinery & Equipment n.e.c linking into North Staffordshire, the West Midlands Conurbation, Shropshire, and Warwickshire, and for the Manufacture of Other Non-Metallic Mineral Products, into North Staffordshire, Warwickshire, Derbyshire and Leicestershire (Appendix 1). In addition to these regional and localised distributions, one anomalous pattern was observed in the Manufacture of Beverages; for this sub-sector, concentration indicated a specialist and highly localised activity operating in singular locations spatially detached from one another, in this case most prominently East Staffordshire and Herefordshire.

These forms of spatial patterning occur in a broader set of spatial distributions, but with two specific tendencies. First is regional dispersal, where regional articulations of spatial economy show some concomitance with political-administrative demarcations and support the narrative of the WM as a spatial-economic entity. The second is a tendency towards more localised concentration focused in the northern part of the study area, in particular linking SST with North Staffordshire, the West Midlands Conurbation (Dudley and Sandwell), Derbyshire, and Shropshire (Telford) (Table 5; Appendix 1). Despite some conformity with political articulations, particularly in the case of integration between SST and North Staffordshire, the influence of local administrative boundaries is perhaps of lesser significance than simple proximity and its benefits, explaining the extension of concentrations beyond and between administrative demarcations.

Industrial structure and its concentration present a highly distinctive picture of spatial economy; this moves beyond those defined through socio-spatial interaction and conventional iterations of LEU towards a more integrated and pluralised interpretation of functioning relationships outside of administrative jurisdictions. Applying this approach to the area of SST, its redeployment as part of GBS can be questioned against more engrained and organic relationships. Using concentration in the manufacturing sector as the foundation of related variety, and thus local

economy, and focusing on specific key sub-sectors within this, the distribution and relatedness around SST suggests a diversion from links with Birmingham as the centre of the GBS city-region. In place of this emerges a picture of local economy both plural and multi-scaled, manifestations emerging either in an integrated regional form, dispersed across a more orthodox political-economic area, or locally concentrated within adjoining localities interacting outside of clear political administrative distinctions.

### **Redrawing local economy in a networked era**

Reform in English sub-national governance has sought to address issues of the separation of local economy and political administrative arrangements (Peck et al. 2013; Bergholz 2018). Whilst challenging the orthodoxy of regions as singular units of market integration (Agnew 2013), reform has responded with a highly specific form of intervention privileging the city-regional model. The ability of this model to integrate increasingly separated spaces of economic governance and economic production has depended on a presumption that through its concentration-agglomeration effects, a related variety is embedded and enforced by which spatial economic integration is achieved (Martin and Sunley 2011; Harrison and Heley 2015). This applies a highly selective interpretation of FEA and LEU avoiding consideration of the structural variation seen between and within English localities.

In this analysis, such LEUs are examined using a related variety approach. Applying industrial concentration as the determinant for related variety (Cantwell 1994; Boschma and Iammarino 2009), the picture of local economy emanating from SST suggests only partial integration with its reconfigured LEU as part of GBS. In place of a singular city-regional structural relationship, a more fragmented and pluralist set of scaled networks emerge (Allen, Massey, and Cochrane 1998), although with tendencies towards two specific structural forms; localised and regionally-dispersed concentrations.

The patterning and distribution presented through sub-sectoral concentrations in and around the study area outlines a number of challenges this analysis presents to conventional approaches in determining LEUs. The key objective of this paper has been examination of the structural relationship between city-region and localised industrial concentration, specifically here between SST and GBS. The related variety approach applied here suggests limited coherence. Redrawing sub-national geographies based around core-periphery relationships fits with a broad aesthetic of how spaces of production are formed and reformed, driven by the dynamism of the urban-industrial engine (Hall 2003; Bettencourt et al. 2007). This interpretation runs contrary to forms defined via industry-based interaction; here geographies of production not only sit apart from city-regional demarcations but similarly move away from embedded administrative articulations (Arndt and Kierzkowski 2001; Dicken 2007). The case study reiterates this tendency, illustrating

a more fluid and relational form of distribution involving multiple overlapping but not wholly integrated localities.

In place of any singular and static local economy therefore, key sectoral distribution shows patterns both regionally dispersed and locally clustered. Concentration does however conform to an extent with the regional geography of the WM or the more local Staffordshire County. This indicates that whilst there may be increasing fluidity in the distribution of specific forms of industry, this is to some extent bound by historic, embedded interactions and dependencies between industrial concentration and political economy and further engrained via a mix of economic, cultural, and regulatory factors (Cooke and Morgan 1998; Hudson 2004). Similarly, the distribution illustrates the important role of not only industry but also firms in the formation of LEU – and the need to integrate this role into the LEU formation process, acknowledging these spaces occur through individual entrepreneurial ventures and production relationships despite rather than through formal state-based demarcations (Nelson and Winter 1982; Spithoven, Clarysse, and Knockaert 2010; Salder and Bryson 2019).

The challenge here for local government in the governance of local economy is significant. Despite an ongoing period during which the role of the local state has been eroded (McCann 2016), growing levels of dissatisfaction with progress in addressing enduring issues of uneven economic development illustrate ongoing failures of tested modes of governance and their spatial and policy selectivity (Martin and Sunley 2011; Harrison and Heley 2015; Fricke 2020). The selected study area illustrates potential for reconfiguring LEUs as a result of critical analysis and structural engagement, moving from spaces formed via a place-first to an industry-first approach. It similarly, contrary to objectives outlined in 'Strengthened Local Enterprise Partnerships' (HM Government 2018), illustrates the value of and necessity for pluralistic or multiple governance arrangements (Blackmond Larnell 2018). Here, both GBS and Staffordshire County relationships conform with forms of related variety within SST, although these occur as part of a more distinctive set of LEUs rather than in any singular capacity. Determining the articulation and extent of such spaces requires more complex forms of analysis and intervention to which orthodox models of local economic governance have yet to adjust. To achieve this requires a shift from place-first to industry-first spatial policy. Critically, such a shift would offer a renewed role for local government organisations in progressing the articulation of and intervention in local economy through the application of more structurally sensitive interpretations founded on contemporary concepts such as related variety. Taking a lead in defining such LEUs could contribute towards reintroducing a more integral role in local economic governance for local government. It could further allow for the enhancement of localised knowledge bases to support policy through the development of enduring relationships with key local sectors and industries.

## Conclusion

The formation and interpretation of local economy remains a contentious issue. Attempts at state spatial reform have sought to more appropriately link political economy with spaces of production (Peck et al. 2013; Bergholz 2018). Response to such demands remains a highly contested phenomenon.

This paper offers a perspective on the formation of LEUs and thus interpretation of local economy. Focusing on industrial concentration as an indicator of related variety (Frenken, Van Oort, and Verburg 2007; Boschma and Frenken 2011), through which LEUs can be defined, it has critically examined the relationship between local places in a city-regional context.

City-regions have been widely adopted as a policy response to the question of LEU formation on the basis of presumed concentration-agglomeration benefits (Hall 2003; Bettencourt et al. 2007), in turn counteracting tendencies for the spatial fragmentation of economies (Arndt and Kierzkowski 2001; Dicken 2007). Despite these tendencies, city-regions face limitations in terms of effective interpretation and accommodation of distinctive localised industrial environments (Markusen 1999; MacKinnon, Cumbers, and Chapman 2002; McCann and Ortega-Argiles 2015). Using a Location Quotient method to examine industrial concentration in and outside of SST, this analysis argues the manifestation of local economy is a pluralised concept. Both regional and localised concentrations can be found; in the case of the latter these occur in distinctive and separate but overlapping articulations. Alignment with the new city-regional geography are evident, but partial; state spatial reform whilst consistent with the preferred city-regional approach has only limited efficacy in representing the organic functional economy of structural distribution. Association in industrial concentration can be related to historic administrative demarcations, but these are similarly partial. Instead, adjoinment and proximity in industrial concentration is not singularly associated with political administrative areas.

This analysis makes three key contributions in relation to the process of defining local economy and LEUs, and thus to both practice in researching local economy and policy in terms of local economic governance. First, it critically outlines the limitations of the city-regional model and raises questions of its application as a policy response addressing structural issues, particularly around growing concerns of the separation between political priorities and local economies (Rodríguez-Pose 2018). Despite presumed agglomeration benefits, the capacity of the city-regional model in both the structural integrity of its centripetal influence and its versatility considering deviation between city-regional spaces (MacKinnon, Cumbers, and Chapman 2002; McCann and Ortega-Argiles 2015) has limitations. These are prominent in its ability to effectively articulate and develop appropriate responses for spatially distinctive and dispersed production systems within key local industries.

Second, it illustrates the absence of and necessity for moving beyond place-first approaches to policy design and implementation. Tendencies to

focus on overlaying structural economy based on *a priori* LEUs avoids broader questions on the relationship between spatial and political economy in deregulated and networked production systems (Martin and Sunley 2011; Harrison and Heley 2015). Examining ways structural economy and spaces of production can be defined using an industry-first approach, extrapolating from a local starting point rather than using a pre-determined LEU, may be more appropriate in the present environment.

Finally, moving towards industry-first spaces presents local economic governance with a further challenge interpreting and intervening in overlapping forms of local economy. Despite greater integration into multi-scalar modes of governance (Jones et al. 2005; Gardner 2017), such interpretations are clearly demarcated within a nested scale of hierarchies formed around political administration (Bailey and Wood 2017). The move towards industry-first spaces in defining LEU will help illustrate the distinctive historic-geographic forms which emerge as industry evolves, creating integrated and overlapping but individualistic spaces and articulations separate not only from administrative units but from one another. Such integration has scope to be complemented by a renewed, actor-based understanding of local economy within local government through its role in economic governance.

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## Appendix 1

### Sub-sectoral concentrations by local authority area

Local Authority	Country/ Sub-region	Manufacture of fabricated metal products, except machinery and equipment	Manufacture of machinery and equipment n.e.c.	Manufacture of food products	Manufacture of motor vehicles, trailers and semi-trailers	Manufacture of rubber and plastic products	Manufacture of other non-metallic mineral products	Manufacture of Beverages	Manufacture of computer, electronic and optical products	Repair and installation of machinery and equipment
Camrook Chase		4.02	0.83	0.37	3.70	2.31	4.05	0.00	1.33	0.23
East Staffordshire	South Staffordshire	1.26	6.06	1.99	1.35	0.61	3.33	27.07	0.68	1.96
Litfield	South Staffordshire	1.97	2.93	1.31	2.26	1.80	1.96	0.43	0.97	1.88
South Staffordshire	South Staffordshire	1.16	2.18	1.02	0.11	1.80	2.78	0.48	4.42	2.94
Tamworth	South Staffordshire	2.63	0.38	0.23	2.12	2.82	2.41	1.18	1.89	0.76
Newcastle-under-Lyme		2.18	0.60	0.73	0.48	0.30	4.13	0.00	3.07	0.30
Stafford	North Staffordshire	1.13	1.48	0.69	0.88	0.28	4.62	0.28	2.42	2.13
Staffordshire Moorlands	North Staffordshire	1.17	5.98	1.24	4.07	1.01	3.87	0.32	0.70	1.83
Stoke-on-Trent		1.33	1.34	1.01	1.06	2.61	13.91	0.23	0.46	1.36
Birmingham		1.63	0.73	0.65	2.60	0.94	0.96	0.74	0.49	0.82
Dudley		3.75	2.39	0.33	1.72	1.92	1.47	0.76	0.36	1.33
Sandwell	West Midlands	4.65	2.40	2.15	3.24	1.38	1.36	1.13	0.13	1.32
Solihull	West Midlands	0.24	0.11	0.04	13.44	0.38	0.17	0.71	0.44	0.45
Walsall	West Midlands	5.12	1.44	0.68	1.88	2.37	1.08	0.00	0.34	0.81
Wolverhampton	West Midlands	3.48	1.11	0.31	0.83	0.88	0.69	3.75	0.24	3.91
Coventry	West Midlands	1.47	1.34	0.42	8.11	1.12	0.31	0.00	0.72	0.87
North Warwickshire	Coventry & Warwickshire	2.13	0.84	1.50	3.91	4.85	5.74	1.07	1.00	0.24
Nuneaton and Bedworth	Coventry & Warwickshire	2.74	2.75	0.35	4.16	0.33	0.79	0.00	0.20	3.01
Rugby	Coventry & Warwickshire	1.92	2.80	0.12	1.13	1.13	6.26	4.23	1.09	0.33
Stratford-on-Avon	Coventry & Warwickshire	1.16	1.23	0.19	8.32	0.42	1.09	0.20	0.43	0.53
Warwick	Coventry & Warwickshire	0.91	1.08	1.93	2.31	0.30	0.34	0.16	0.86	0.20
Stoke-on-Trent	Shropshire	1.18	1.32	3.23	1.38	0.29	0.81	1.67	0.30	0.32
Telford and Wrekin	Shropshire	2.30	4.38	1.09	7.24	2.34	1.72	0.07	1.32	4.01
Bromsgrove	Worcestershire	0.54	1.37	0.25	3.37	0.61	0.33	0.39	0.83	0.72
Maven Hill	Worcestershire	1.67	0.30	3.68	2.22	2.80	1.46	1.22	4.65	0.31
Redditch	Worcestershire	6.51	2.81	3.81	1.86	1.86	0.18	0.00	2.50	1.04
Worcester	Worcestershire	3.66	2.70	0.16	0.90	1.32	0.32	0.00	1.23	0.26
Wyke	Worcestershire	1.95	2.13	4.34	0.17	3.01	1.14	0.18	0.51	0.43
Wyke Forest	Worcestershire	1.57	0.92	0.21	2.28	0.70	4.62	0.23	0.53	1.34

Local Authority	County sub-region	Manufacture of fabricated metal products, except machinery and equipment	Manufacture of machinery and equipment n.a.c.	Manufacture of food products	Manufacture of motor vehicles, trailers and semi-trailers	Manufacture of rubber and plastic products	Manufacture of other non-metallic mineral products	Manufacture of beverages	Manufacture of computer, electronic and optical products	Repair and installation of machinery and equipment
Herefordshire	Herefordshire	1.38	1.50	3.15	1.32	5.76	0.49	11.71	1.66	0.86
Amber Valley		2.77	1.44	4.79	0.23	4.11	13.50	0.13	0.56	1.74
Derby		1.39	1.88	0.60	0.37	0.86	1.44	0.04	1.56	1.08
Derbyshire Dales	Derbyshire	1.84	0.19	2.08	0.40	1.71	8.29	0.92	1.23	0.83
Erewash		4.00	1.02	0.36	1.62	3.88	2.26	0.03	0.19	0.91
South Derbyshire		1.59	1.52	2.66	21.10	2.25	3.52	0.19	0.13	0.74
Blaby		1.43	0.43	1.10	0.18	0.70	2.84	3.12	0.33	0.12
Charnwood		2.48	2.21	1.03	0.03	2.37	3.37	0.36	1.14	2.74
Pinxley and Bosworth		2.93	2.86	0.33	1.16	0.35	3.47	0.00	3.74	0.38
Leicester	Leicestershire	1.46	0.62	2.03	0.13	1.56	0.34	0.07	1.32	0.20
North West Leicestershire		1.47	1.09	1.95	1.69	2.61	7.50	7.01	0.83	1.32

Key:  
 Strong concentration ⇒3  
 Concentration: 1.5-2.9  
 Weak concentration: 1-1.4  
 No concentration: <1