
Regional hierarchies of discontent: an accessibility approach

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We argue that so-called geographies of discontent work within regional hierarchies in a spatial continuum, whereas the previous literature has mainly invoked dichotomous divides, such as core-periphery or the North-South. A place's relation to surrounding communities and regions remains an understudied topic. We analyse the municipal distribution of electoral support for Sweden Democrats (Sverigedemokraterna, SD) in the 2014 and 2018 Swedish national general elections. We show that higher accessibility to other large municipalities within the same region, as well as being surrounded by relatively larger neighbouring regions, is associated with further support for SD. The within-region associations are only reliably identified among the urban group.

Keywords: geographies of discontent, places that don't matter, left-behind places, functional geographies, labour market regions, accessibility.

JEL Classifications: D72, J24, R23, Z13

Introduction

Geographies of discontent are often perceived of in a dichotomous way, such as through North-South, East-West, Rural-Urban or Metropolitan-Small City divides. The narrative implies that in many countries of the post-globalised world, central places and major cities have been flourishing, while the rest is *left behind*. Rodríguez-Pose (2018) argues that people living in economically and socially

lagging places channel their discontent through political preferences for populist parties, and exact revenge on a prosperous urban elite that they deem to be dismissive of the rest of the country. Coyle and Ford (2017) similarly highlight growing regional inequalities as a primary source of political discontent in the United Kingdom (UK), manifested by the disproportionate support for Brexit in lagging regions.

Current academic and political debate often relate the geographical disparities in voters'

preferences to how a place is performing economically relative to the largest metropolitan areas in the country. The debate revolves around the alienation residents of small and declining places feel in response to rapid growth elsewhere. This swiftly growing debate has added much to how we think of rural-urban differences and the relationship between the core and the periphery. In this paper, we argue that a cornerstone of modern geography, that is, the spatial continuum, is an important yet overlooked aspect when discussing geographies of discontent.

While the current debate certainly has merits, a binary divide between a ‘centre’ and a ‘periphery’ conceals an urgent area for research. Small communities of discontent are nested within regional hierarchies, and they are connected not only to the rest of the country but also, and perhaps even more importantly, to other nearby communities. It may even be the case that rural communities are intertwined in their own hierarchies of discontent. The relationship between political preferences and local economic performance cannot be fully established only by comparing these localities to the national average or a few prosperous urban centres. As [Waldo Tobler \(1970, 236\)](#) invokes as the first law of geography, ‘*everything is related to everything else, but near things are more related than distant things*’. A gravitational approach would suggest that geographical variation in political discontent can be attributed in part to a community’s relative position in its region, as well as the performance of its region compared to surrounding regions. To give a practical example: voters in the periphery and less affluent parts of an urban labour market might have a feeling of being less well off in comparison to the thriving urban core. Distance as an exclusionary factor in this context is previously addressed by [Dijkstra et al. \(2020\)](#), who argue that the distance from any given location to the nation’s capital is a driver of discontent. We intend to add to this ‘ivory tower’ line of argument and point to smaller pockets of

discontent that are fuelled by inter- and intra-regional inequalities.

To assess the relevance of hierarchies for the manifestation of discontent in local areas and to do so in a spatial continuum, we use data from Swedish municipalities and functional labour market areas. During the past three elections (in 2010, 2014 and 2018), the Sweden Democrats (SD), routinely dubbed a populist party in the press, saw their vote share increase dramatically from low single digits before the 2010 election to nearly 20%, which completely altered the Swedish political landscape. Yet, at the municipal level, the vote shares still range between 9 and 40 percentage points in 2018. Local labour markets, which are based on economic integration and the intensity of commuting between municipalities, provide us with the possibility to investigate the local-regional diversity of those voting patterns. The existence of generally monocentric regional structures across Sweden and access to detailed data further contributes to the informative nature of Sweden as a case.

By using wage sums as proxy for the economic mass of a place, we construct three accessibility measures that together add up to the total market access of any local area. The three elements of the accessibility measure let us assess the importance of the economic capacity of a place relative to other local areas within the same region and to other regions separately in a spatial continuum. The first accessibility variable reflects the municipalities’ own economic conditions. The second accessibility variable captures the economic conditions of the region at large (discounting municipalities’ own conditions), which is a way to investigate how the relative performance of neighbouring local communities may influence discontent. Finally, the third variable measures accessibility to all other regions, albeit weighted towards nearby regions. This measure reflects that the relative position of a municipality’s own region with respect to other regions may contribute to discontent. To isolate the relationship between these

three variables and discontent as manifested in SD vote share and change in support for SD over two election periods, we also control for more established influences of discontent, such as level of education and immigration. We further run the models for urban and peripheral areas separately to assess whether discontent is nested within structures inside and outside of the larger urban centres.

Our argument rests on the conjecture that if inequalities are perceived locally, then their effects, and the ‘revenge’ of left behind places are likely to be more localised than so far recognised in the literature. For example, an individual who commutes within a local labour market, or between neighbouring local labour markets, will be likely to use these places as a reference point when forming her political opinion, in addition to the perceived and experienced inequality between her local environment and a distant metropolis. If this regional hierarchical approach to political discontent proves to have merit, then it is also of societal relevance, as policy responses need to go beyond transfer of resources from ‘South’ to ‘North’ but need to tackle localised disparities as well. Our empirical findings are indeed in line with such a hypothesis, as they are consistent with added effects from regional hierarchies. Holding the economic conditions of a municipality and its own labour market region constant, we show that having relatively strong regions nearby is statistically strongly associated with discontent. Our empirical context is hence consistent with discontent as partially spurred by dynamic nearby labour market regions. We also demonstrate interesting differences with respect to urban vs peripheral places, in that the statistical association between discontent and a municipality’s relative position *in the own region* is only reliably identified in urban labour market regions.

The paper is structured as follows: In the next section, we first summarise the current state of debate around geographies of discontent and introduce in what ways we consider relational

aspects measured for example through accessibility and proximity as an explanation for regional divergences in voting patterns. We then continue in section 3 to present the Swedish case, before in section 4 we embark on a quantitative analysis of Swedish labour market regions where the accessibility approach is discussed in detail. Section 5 concludes.

Geographies of discontent

The literature on ‘geographies of discontent’ has grown considerably over the past few years. A central theme in research on the topic is that lagging places cultivate a feeling of being ‘left behind’ that ultimately results in revenge voting for populist parties (Coyle and Ford, 2017; McCann, 2018; Rodríguez-Pose, 2018). Much of the literature is written in the context of the UK’s Brexit vote (see for example, Abreu and Öner, 2020, Dorling and Tomlinson, 2019, Los et al., 2017, Rodríguez-Pose, 2018, Rodríguez-Pose et al., 2020 amongst others), or at the EU level (Dijkstra et al., 2020). The lagging regions are characterised by, for example, persistent poverty and weak access to public services (McCann and Ortega-Argilés, 2021; Rodríguez-Pose, 2018, 2020).

An underlying rationale in most of the literature is that the left-behind mindset develops in places ‘distant’ from the main metropolitan regions, or where traditionally thriving industries decline and where the central government’s policy response is perceived of as insufficient or even harmful (see for example, Rodríguez-Pose, 2018). Dorling and Tomlinson (2019) argue, in the case of the UK, that austerity policies disproportionately affected already poor areas. In a similar vein, the authors of several papers argue that anti-globalisation attitudes arise from exposure to trade shocks, and that internationalisation of Foreign Direct Investment (FDI) into the local economy contributes to populist voting patterns (Calontone and Stanig, 2016; Creszenzi et al., 2018). The local nature of FDI leads to widening inequalities across

regions with different economic structures, for example, manufacturing vs service-oriented local markets (Figus et al. 2018; Rodrik 2017; *The Economist* 2017). Such variation in local economic structure is then linked to how gains from globalisation are capitalised on by a select number of people living in globally connected regions with high accessibility. In a similar vein, Dijkstra et al. (2020) highlight the role of deindustrialisation and the winners of a digital and service-oriented economy. They map anti-EU votes in electoral districts in the EU-28, concluding that an *'anti-EU vote is mainly a consequence of local economic and industrial decline in combination with lower employment and a less educated workforce'* (2020, 737).

There is also some literature on the relationship between immigration and discontent. Over the past decade, European countries have been a popular destination for refugees from countries that experienced turmoil and war. Immigrants arrived from places such as Iraq, Afghanistan, parts of Africa and more recently from Syria, often in masses and almost exclusively in unexpected waves that spurred coordination and governance issues (Henrekson et al., 2020). In the context of the EU referendum in the UK, there is some evidence that the voters in regions with higher net migration are more sceptical towards immigrants (Arnorsson and Zoega, 2018), and that although the Leave vote was lower in more ethnically diverse areas, rapid growth in immigration is associated with a higher propensity to vote Leave (Goodwin and Milazzo, 2017; Kaufmann, 2019). Similarly, in Sweden, a positive correlation between refugee concentration and support for anti-immigration sentiment is observed, particularly in declining small communities outside the metropolitan areas which received a higher proportion of refugees during the recent Syrian refugee crises due to shortages of housing in large

labour markets (Wennström and Öner, 2015; 2021).

Cultural grievances related to alienation from an open and young urban society, resentment towards reinforced multiculturalism and cosmopolitan views and a general feeling of being dismissed by the 'establishment' are other issues that are highlighted in the academic debate (Abreu and Öner, 2020; Collier, 2018; Rodríguez-Pose, 2020). However, sometimes it is perceived rather than real inequality that is linked to discontent (McCann, 2020), whereby political views are related to feelings about an issue rather than actual exposure to it. For example, in the context of immigration, there is some evidence for anti-immigration sentiments in areas with relatively low share of immigrants (Essletzbichler et al., 2018; Goodwin and Milazzo, 2017).

None of the existing work argues that the only relevant explanation is the economic and social downturn in a local environment alone but that it is a combination of several factors and their interaction with the individual characteristics of the voters. Voter characteristics, such as education, employment, personality traits, age, gender, ethnic background, and cultural values are highlighted as integral parts of grievances manifested in political preference (Abreu and Öner, 2020; Los et al., 2017). Consideration of these characteristics has spatial implications likewise as the individual and their local environment is in continuous interaction: people sort themselves in space with respect to their characteristics, and these characteristics in turn are influenced by geography. There is some, albeit limited, attempt to tackle the issue of sorting. For example, by way of examining seemingly identical voters living in different environments, Abreu and Öner (2020) differentiate between the compositional and contextual effects. They find that the most important contextual determinants of the Leave vote are cultural rather than economic in nature.

Regional hierarchies of political discontent

While rich in identifying the contextual determinants of discontent, the literature has not dealt systematically with spatial interaction and hierarchical relationships between localities. Much of the literature builds on the presentation of voting patterns via electoral districts and administrative units in a discrete fashion (Dijkstra et al., 2020; Rodríguez-Pose, 2020). But these territorial units do not exist in space in a vacuum. They are in continuous interaction with one another, where the extent of this interaction diminishes with distance. The persistent relationship between distance and intensity of interaction is exactly what constitutes the backbone of the regional science literature. Hierarchical arrangement of places and the spatial interaction between them have been at the core of the field, starting from the traditional location theories (for example, Berry, 1964; Christaller, 1933; Lösch, 1944; Parr and Denike, 1970) to gravitational models (Haynes and Fotheringham, 1984; Reilly, 1929, 1931).

In our approach, we move beyond a discrete analysis of localities where they are compared against one another indiscriminately. Instead, we incorporate *spatial continuum* into the analysis of geographies of discontent by way of an accessibility approach. Over and above a local area's position relative to the prosperous urban centres, increased support for populist political movements at the local level can be attributed to how voters compare their social and economic environment to others in the vicinity. In fact, the relevance of others' conditions as a baseline against which voters compare their own environment may diminish with distance to them, implying a distance decay in comparison.

This approach lines up well with other strands of geography as well. The feeling of resentment against the establishment, while certainly being pertinent in peripheral regions, has been acknowledged to exist in a complex geography. The literature in human geography,

as well as critical geography with its strand on relational perceptions of territoriality (Amin, 2004; Jessop, 2001, 2016), have argued for an understanding of space as a result of 'flows' and a 'network society' (Castells, 2000). Harvey, as early as 1969, presented a relational understanding of space where space can be understood through social, ecological, cultural, and physical processes, influenced by its relation to other entities. Castells (2000) argues that the transformation of society is forging ahead towards a network society where connectivity plays an ever more important role. Such connectivity is an inherent feature of accessibility within and across regions (Klaesson et al., 2015).

Twenty years after critical geography started to discuss relational geographies as forms of territorial structure, the nation states arguably preserve their importance as the fundamental territory. The nation has gained further momentum as manifested in peoples' voting pattern in favour of populist parties calling for a strong state, often fuelled by nationalist sentiments. Why, then, do we argue that relational aspects can aid us in understanding voting patterns? People cross borders continuously, for example, for commuting and consumption. It is, therefore, reasonable to hypothesise that conditions at the local level influence their political preferences, as well as their perception of how well or worse off they are in relative terms. It follows that accessibility between the localities that are nested within and across integrated local market areas (that is, functional regions) captures politically relevant local conditions better than the administrative boundaries of these localities can accomplish on their own.

In the context of our analysis, a functional, relational understanding of space translates to a perspective where citizens perceive themselves as part of their *Verflechtungsraum*,¹ and that they feel left behind on the one hand in relation to others in their area, to other areas. That is: they are unable to profit from opportunities

in their reach, spatially and culturally. A local area's position with respect to the functional region it belongs to and to other functional regions it is surrounded by, therefore, may reveal relational aspects of discontent better than if we simply focus on its conditions in comparison with the country at large. Interestingly, the applied regional science literature offers an appropriate empirical tool to study the extent of relatedness across and within regions, that is, accessible market potential, which constitutes the backbone of our empirical approach (see for example, [Johansson and Klaesson, 2011](#); [Klaesson et al., 2015](#)). This potential mechanism motivates our empirical design in which we investigate discontent in Swedish municipalities in relation to the functional local labour market regions they belong to and to other functional regions nearby.

Swedish context

The Swedish electoral system runs through four general elections. These are elections for National Parliament (Riksdag), for the regional assembly, for the municipal councils and for the European Parliament. Municipal, regional and parliamentary elections take place at the same time every four years and the voter can choose to vote for different parties at different levels of governance. Our empirical focus is on the share of local votes for the national parliament cast for the Sweden Democrats (Sverigedemokraterna, SD) at the municipal level.

The Swedish political landscape is diverse with a total of eight political parties above the 4% threshold for parliamentary representation. Based on 2018 elections, the largest voter base is attached to Social Democrats with over 31% of the votes, followed by the Moderates with 23% of the votes. The third largest party both in 2014 and in 2018 elections was the SD with 12.9 and 17.5%, respectively. The rise of popularity for SD has been extraordinary. In the 2006 elections, the party gathered as little as 2.9% of the total votes. Only in the 2010 elections did

they pass the 4% threshold to gain parliamentary representation with 5.7% of the votes. As of May 2021, SD poll at nearly 20%, leaving a small margin between them and the Moderates, the second largest party.

The official SD party programme is based on nationalism and social conservatism. At a time with rapid and significant refugee migration, they made issues related to immigration and systematic failures associated with the integration of immigrants central to their party policy. Despite that some consider SD a far-right populist party,² the party disputes the far-right label and strives to place itself in the political centre. Sweden has received more refugees per capita than any EU member state during the recent Syrian refugee crises, which magnified the existing challenges related to the integration of immigrants into Swedish labour market and to society at large. In response, SD has focused on national identity and culture, and the party is by and large opposed to multiculturalism. In terms of foreign policy, although the party is against further EU integration, it does not actively promote separation from the union.

[Figure 1](#) displays two maps, showing the geographical distribution of SD votes in 2014, as well as the change in their vote share between 2014 and 2018 general elections across the 290 Swedish municipalities. In both maps, the values are represented in quintiles. We see that southern and the relatively more connected parts of Sweden are overrepresented in terms of a higher support for SD, already challenging the dichotomous notions such as urban-rural or the north-south. It is striking that in the 2018 elections, all Swedish municipalities, without exception, displayed a higher support for SD, the increase in support ranging from nearly one to 12.7 percentage points. Another noteworthy regularity is that municipalities with high support, as well as a higher increase in support, are scattered across the country rather than clustered. This geographical pattern hints at significant

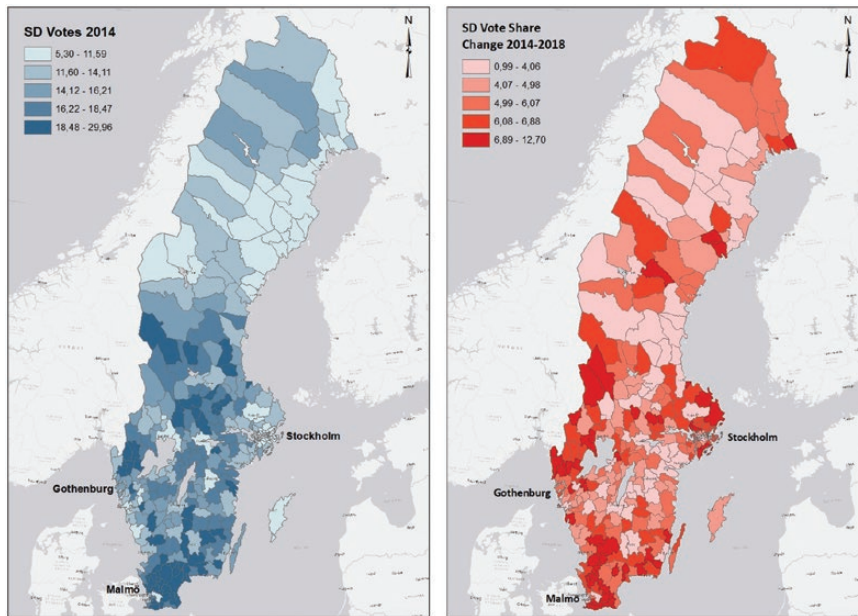


Figure 1. Sweden Democrats' vote share in 2014 General Elections, and the change in their vote share between 2014 and 2018 General Elections across Swedish municipalities. Maps by authors.

variations in political preferences across municipalities that are nested within the same regions.

Data, variables and empirical design

Empirical design

Proximity is a key element in our thinking, captured by an accessibility approach. Accessibility measures what you are surrounded by, but also how 'accessible' those surroundings are. Citizens relate to what happens around them, and hence we argue that their behaviour is influenced, including the extent to which they feel left behind, in their own regional context. Building on the core aspects of accessibility, we argue further that it matters greatly how you are connected to other regions. Accessibility is also a proxy of access to services, which is already regarded as a key cause of discontent in the literature. Proximity plays a role, both in terms of spatial distance as well as in terms of relatability.

It should be noted at this point that what we present below are correlations conditioned on confounding factors known from previous literature. It is not our ambition to isolate causal effects, but rather show some suggestive results to investigate the empirical validity of our points made above. Using experimental data, or instrumental variables, to deeply analyse causal effects is a complicated matter that we leave for future research on this topic. With these caveats in mind, the model to be estimated is a simple, linear Ordinary Least Squares (OLS) model. The full model is outlined in equation (1).

$$y_{i,t} = \alpha + X'_{i,t}\beta + Z'_{i,t}\delta + \varepsilon \quad (1)$$

where $y_{i,t}$ denotes the SD vote share in national parliament elections in each municipality i at time t , X is a vector of accessibility variables described below and a variable describing driving distance to Stockholm. Z is a vector of control variables. We estimate the model using data for the two most recent

elections, that is, 2014 and 2018. The model is estimated first, using only the accessibility variables, and second with all control variables included. We also estimate the influence of variables at time t (2014) for the change between t (2014) and $t + 1$ (2018), that is $y_{i,t+1} - y_{i,t}$.

Further, we estimate the models based on whether the municipality belongs to a region classified as peripheral or urban. Peripheral regions have been defined as those regions where the central municipality in terms of commuting flows has fewer than 50,000 inhabitants in 2016. Out of a total of 290, this classification designates 148 municipalities as urban and 142 as rural. The rationale for this operation is to investigate the differences between sparser regions with few municipalities to metropolitan, larger and denser regions with many municipalities. The choice to run our analysis for urban and rural regions separately is motivated both by theory and the empirical regularity displayed above in Figure 1. Theoretically, based on a central place theory framework, each market area of a higher order contains the market areas of a lower order. The larger the centre is in a regional system, the greater its gravitational pull is, leading to a higher degree of connectivity between the smaller localities. Whereas in relatively rural regions, hierarchical domination of a high order centre either does not exist (where a municipality is a region of its own), or its gravitational pull is weaker compared to their urban counterparts (leading to relatively fewer localities being nested within the same region). Empirically, the variation in spatial dependencies can be observed between such urban and rural regions from Figure 1, where we see greater dependence around the urban areas down south than we observe in the north.

Variables and descriptive statistics

Accessibility variables

The accessibility variables that we employ are based on wage sums. The decision to base the

analysis on wage sums, rather than employment numbers, is in part based on recent criticism of employment numbers as proxies for economic activity. Many who are registered as ‘employed’ work little or have occasional jobs; this problem is particularly prevalent among the foreign-born (Eklund and Larsson, 2020). We consider wage sums generated by the resident population a better measure of ‘economic mass’ in our empirical context.

The wage sums are discounted by time-travel distances. A place has high accessibility if it has high economic mass, as proxied by wage sums, combined with effective infrastructure to render that mass *accessible*. Accessibility may hence be thought of as a measure of effective density (for example Andersson et al., 2014; Matas et al., 2015). In our empirical context, we use data on average commuting times by car between municipalities. Driving remains the predominant means of commuting in Sweden, and similar data are often used to delineate labour market areas themselves (see for example, Johansson et al., 2002).

It is logical to think of the total accessibility of a municipality i as the sum of three components: accessibility within the own municipality (m), accessibility within the labour market region (R), and accessibility to all other regions of the country (E).

$$Access_{i,t} = Access_{i,t}^m + Access_{i,t}^R + Access_{i,t}^E \quad (2)$$

Several functional forms have been tested out in the literature (see the review in Klaesson et al., 2015) and an exponential distance-decay function coupled with average commuting times (t) generally seems to fit the data best, that is:

$$Access_{i,t}^m = W_i \exp \{-\lambda_m t_{ij}\}, \text{ municipal accessibility to wage earnings of municipality } i$$

$$Access_{i,t}^R = \sum_{j \in R_i} W_j \exp \{-\lambda_R t_{ij}\}, \text{ regional accessibility to wage earnings of municipality } i$$

$$Access_{i,t}^R = \sum_{k \notin R_i} W_k \exp \{-\lambda_{Rt} t_{ik}\}, \quad \text{extra-regional accessibility to wage earnings of municipality } i$$

The setup implies that the first measure exponentially weighs the economic mass of municipality i with average commuting time by car for workers who commute within that municipality. Likewise, the second measure weighs the wages generated in all other municipalities k within the same labour market region. The third measure captures weighted wage sums in all other regions of the country. The time-travel weighting means that the measures all favour nearby places and that places farther away are exponentially discounted away because people are exponentially less likely to commute that far. It follows that the last measure is heavily influenced by accessibility to immediately surrounding regions. The distance-decay parameters (λ) take on three different values³ based on commuters' observed responses to time differences. The parameter values are estimated using gravity models in Johansson et al. (2003). An attractive property of accessibility measures

is that they serve to greatly alleviate, or even eliminate, problems of spatial autocorrelation (Andersson and Gråsjö, 2009).

All data on wage sums (as well as for the control variables) are obtained from Statistics Sweden (SCB). All collected data are aggregated from register data, meaning that there is no risk of sampling errors and at most a miniscule risk of mismeasurement. Figure 2 presents three maps showing the geographical variation of accessibility across Swedish municipalities. By construct, the degree of accessible market potential at the municipal level is more evenly distributed across the country. Whereas accessible market potential at the regional level, and across different regions is more concentrated in urban regions, particularly in the southern part of the country.

Other variables

In addition to the accessibility variables, similar to Dijkstra et al. (2020), we also include a variable measuring distance to the capital. In our case we measure driving distance (number of hours) to the centre

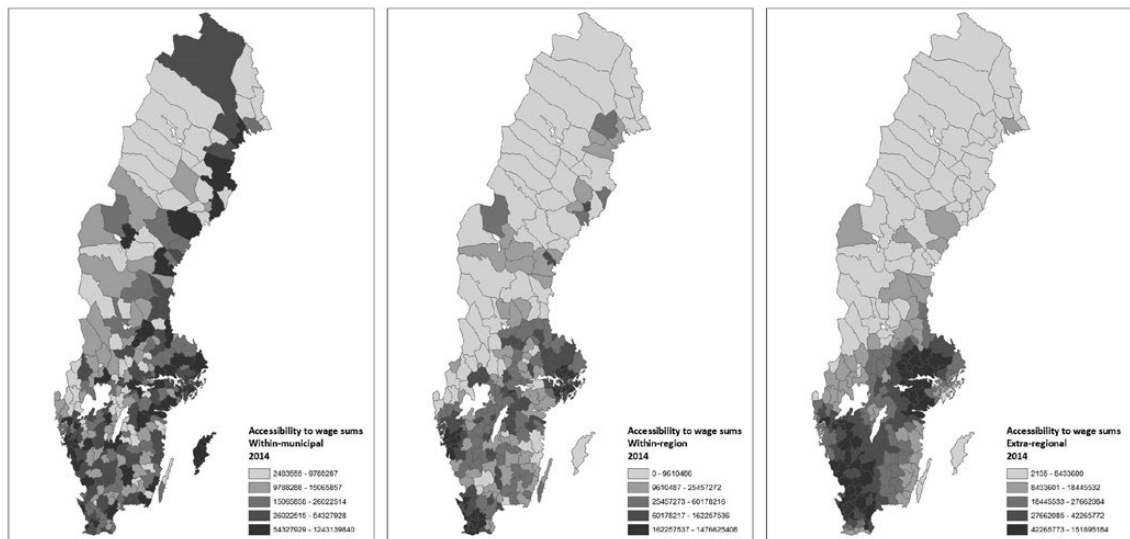


Figure 2. Accessibility to wage sums across Swedish municipalities: within municipalities, within regions and between regions.

of Stockholm. The idea of measuring the distance to the central authority is to analyse the effect of being farther or closer to the ‘central metropolis’.

We further employ a set of control variables to isolate accessibility from other factors. Based on our survey of the previous literature we introduce the following control variables,⁴ also all obtained from SCB:

College share: the share of local inhabitants with at least a 3-year university education.

Employment rate: the share of local inhabitants either employed or registered as employers or self-employed.

Change in share of visible minorities since 2004: share of inhabitants born either in Africa or in the Middle East. Using the concept of visible minorities is important for two reasons. First, the literature that deals with the compositional effects of migration at the local level argue that the native population’s

perception of immigration is shaped much after the divergence of immigrants’ appearance, dress, religious customs, etc. (Östh et al., 2015). Second, the variable captures the two of the largest wave of refugee immigration in recent times, the first wave following the second Iraq War between 2005 and 2006, and the second wave in 2014 onwards following the Syrian civil war (Klaesson et al., 2021).

All variables are summarised in Table 1. Further in Appendix Tables A1 and A2, all variables are summarised again for municipalities in peripheral and urban regions, respectively.

Note that the increase in SD vote share between the 2014 and 2018 is large, indeed the 2014-mean increases by more than a 2014-standard deviation just four years later. Another variable that shows a sizeable increase between elections is the share in visible minorities since 2004. The next section explores to what extent the levels and the change of SD votes can be explained quantitatively.

Table 1. Descriptive statistics.

Variable	Mean	SD	Min	Max
Sverigedemokraterna vote share 2014	15.34	4.47	5.30	29.96
Sverigedemokraterna vote share 2018	20.93	5.43	8.58	39.23
Change in Sweden democrat vote share 14–18	5.59	1.75	0.99	12.70
Within-municipal accessibility to wage sums 2014 (ln)	16.93	1.03	14.73	20.94
Within-municipal accessibility to wage sums 2018 (ln)	17.09	1.05	14.89	21.13
Within-regional accessibility to wage sums 2014 (ln)	16.18	5.22	0.00	21.11
Within-regional accessibility to wage sums 2018 (ln)	16.34	5.27	0.00	21.31
Extra-regional accessibility to wage sums 2014 (ln)	16.73	1.15	7.67	18.84
Extra-regional accessibility to wage sums 2018 (ln)	16.90	1.16	7.87	19.03
Driving distance to central Stockholm (h)	4.04	2.27	0.32	12.90
Share college graduates 2014	13.83	5.98	6.70	43.85
Share college graduates 2018	15.14	6.33	7.86	45.52
Employment rate 2014	67.62	4.14	56.29	78.62
Employment rate 2018	68.86	3.93	59.19	79.09
Change in share visible minorities 2004–2014	1.90	1.35	-0.01	10.04
Change in share visible minorities 2004–2018	3.58	2.09	0.56	12.49

N = 290

Table A1. Descriptive statistics, municipalities in urban regions.

Variable	Mean	SD	Min	Max
Sverigedemokraterna vote share 2014	15.35	5.14	5.30	29.96
Sverigedemokraterna vote share 2018	21.03	6.21	8.58	39.23
Sverigedemokraterna vote share, change 2014–2018	5.68	1.80	2.00	12.70
Within-municipal accessibility to wage sums (ln) 2014	17.25	1.05	14.73	20.94
Within-municipal accessibility to wage sums (ln) 2018	17.43	1.07	14.89	21.13
Within-region accessibility to wage sums (ln) 2014	18.44	2.01	0.00	21.11
Within-region accessibility to wage sums (ln) 2018	18.62	2.04	0.00	21.31
Extra-regional accessibility to wage sums (ln) 2014	17.16	0.78	14.64	18.84
Extra-regional accessibility to wage sums (ln) 2018	17.33	0.79	14.76	19.03
Share older than 65, 2014	25.79	4.37	15.81	36.34
Share older than 65, 2018	26.87	4.90	15.45	38.86
Share college graduates 2014	16.00	7.02	7.18	43.85
Share college graduates 2018	17.75	7.50	7.99	46.46
Employment rate 2014	68.37	4.09	58.69	78.62
Employment rate 2018	70.27	3.87	60.37	79.72
Share visible minorities 2014	3.49	3.37	0.25	23.15
Share visible minorities 2018	4.96	3.78	0.76	25.73
<i>N</i> = 148				

Table A2. Descriptive statistics, municipalities in rural regions.

Variable	Mean	SD	Min	Max
Sverigedemokraterna vote share 2014	15.33	3.65	7.00	25.40
Sverigedemokraterna vote share 2018	20.82	4.49	11.45	32.07
Sverigedemokraterna vote share, change 2014–2018	5.49	1.70	0.99	11.01
Within-municipal accessibility to wage sums (ln) 2014	16.59	0.89	14.84	18.64
Within-municipal accessibility to wage sums (ln) 2018	16.73	0.90	14.92	18.81
Within-region accessibility to wage sums (ln) 2014	13.83	6.37	0.00	19.11
Within-region accessibility to wage sums (ln) 2018	13.96	6.43	0.00	19.29
Extra-regional accessibility to wage sums (ln) 2014	16.28	1.30	7.67	18.24
Extra-regional accessibility to wage sums (ln) 2018	16.44	1.31	7.87	18.43
Share older than 65, 2014	29.35	3.09	21.72	37.12
Share older than 65, 2018	30.83	3.44	21.32	40.56
Share college graduates 2014	11.56	3.40	6.70	22.18
Share college graduates 2018	12.87	3.74	7.95	25.87
Employment rate 2014	66.84	4.06	56.29	76.90
Employment rate 2018	68.72	3.95	59.80	79.64
Share visible minorities 2014	2.64	1.46	0.30	8.72
Share visible minorities 2018	4.47	2.24	1.27	12.63
<i>N</i> = 142				

Regression results

The main results from estimating (1) for all municipalities, initially with only the accessibility and distance to Stockholm variables in (1–3) and then with the control variables in (4–6), are presented in [Table 2](#). The table estimates the association between the variables and election results for SD for 2014 and 2018 general elections, as well as for the change between the two elections.

Starting with the estimated effects for intra-municipal accessibility, having higher internal access (that is, a denser and more accessible local market) is correlated with lower shares of SD votes as one would predict. In 2014, a one standard deviation increase in internal accessibility is associated with about 2 percentage points lower support for SD. In 2018, the corresponding figure is around 2.5 percentage points. However, these isolated effects completely disappear when we include the control variables. In particular, the share of college graduates is strongly (negatively) associated with the share voting for SD.

The inter-regional measures are generally positive, meaning that, holding a municipalities own market size constant, being surrounded by economically strong municipalities in the same region is associated with more SD votes. The coefficients are of modest size, but the standard deviations are larger here, as can be seen from [Table 1](#). An interesting observation is that these variables all remain statistically significant after including the control variables. In the full model, a one standard deviation change in within-region accessibility is associated with about 1.25 percentage points higher SD support in 2018 and about 0.8 percentage points in 2014. In this light, our argument that the economic capacity of the neighbouring localities within the same functional region affects ‘revenge’ voting is affirmed in our empirical context. Such relationship is evident for places both near and far from Stockholm as we control for the time distance to the country’s capital following [Dijkstra et al.](#)

(2020). For distance to capital, we generally find a positive association between driving distance to Stockholm and higher support for SD. This association is consistent with the argument that voters ‘further away’ from the central power are overrepresented among the revenge voters.

Finally, the association between having larger surrounding regions is generally associated with higher SD votes, all else equal. These relationships are also more robust than the within-region results, as the extra-region results do not change much depending on the control variables. That is: being surrounded, and otherwise having commuting distance to, larger labour market regions is generally associated with more revenge voting. In the full model, increasing extra-regional accessibility by one standard deviation is associated with 1.6 and 1.9 percentage points higher SD votes in 2014 and 2018, respectively.

In conclusion, when we run the model for all municipalities, we find ample support that ‘geography matters’ in the sense that surrounding municipalities and regions are a relevant factor to take into account when analysing so-called revenge voting, over and above the economic capacity of a given locality.

We repeat the same empirical procedure in a multivariate setting for urban and peripheral regions, presented in [Table 3](#). Some things are particularly noteworthy. First, previously isolated effects of within-region accessibility seem to be largely driven by urban areas. That is, having powerful localities nearby within the same functional region seems to drive discontent only in urban regions. We found no evidence for such relationship for municipalities in peripheral regions.

Second, the estimates for extra-regional accessibility are statistically significant in all specifications except change in SD vote share in urban regions. The magnitude of these estimates is statistically significantly larger in municipalities that are hosted in urban regions. The underlying standard deviations are much

Table 2. Predictors of national parliament vote share for Sverigedemokraterna (SD) in 2014 and 2018 general elections, and change over the period.

	1	2	3	4	5	6
	SD Vote Share 2014	SD Vote Share 2018	SD Vote Change 2014–2018	SD Vote Share 2014	SD Vote Share 2018	SD Vote Change 2014–2018
Within-municipal accessibility to wage sums (ln)	-1.809*** (0.223)	-2.300*** (0.265)	-0.535*** (0.0991)	-0.119 (0.286)	-0.285 (0.347)	-0.108 (0.138)
Within-region accessibility to wage sums (ln)	0.0665 (0.0508)	0.131** (0.0607)	0.0656*** (0.0225)	0.155*** (0.0460)	0.237*** (0.0559)	0.0663*** (0.0222)
Extra-regional accessibility to wage sums (ln)	1.959*** (0.224)	2.261*** (0.268)	0.300*** (0.0997)	1.419*** (0.206)	1.661*** (0.252)	0.228*** (0.0994)
Driving distance to central Stockholm (h)	0.379*** (0.118)	0.505*** (0.143)	0.123** (0.0526)	0.392*** (0.107)	0.526*** (0.130)	0.0706 (0.0513)
College graduates (share)				-0.344*** (0.0512)	-0.399*** (0.0604)	-0.0688*** (0.0247)
Employment rate				-0.216*** (0.0572)	-0.245*** (0.0738)	-0.0749*** (0.0275)
Visible minority change since 2004 (share)				-0.145 (0.167)	-0.120 (0.138)	-0.412*** (0.0803)
Constant	10.58** (5.192)	1783*** (6.219)	8.071*** (2.305)	9.167 (6.523)	15.06* (8.034)	9.032*** (3.141)
Observations	290	290	290	290	290	290
	0.331	0.344	0.142	0.491	0.485	0.232

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Regions ($n = 81$) are aggregations of municipalities ($n = 290$). The levels in 2014 and 2018 are predicted by variables recorded in that year. Change 2014–2018 are predicted by variables recorded in the original year, that is, 2014.

Table 3. Urban and peripheral regions – predictors of national parliament vote share for Sverigedemokraterna (SD) in 2014 and 2018 general elections, and change over the period.

	1	2	3	4	5	6
	SD Vote Share 2014	SD Vote Share 2018	SD Vote Share 2014–2018	SD Vote Share 2014	SD Vote Share 2018	SD Vote Change 2014–2018
	Urban regions			Peripheral regions		
Within-municipal accessibility to wage sums (ln)	-0.0468 (0.386)	-0.133 (0.472)	-0.0984 (0.187)	-0.222 (0.428)	-0.537 (0.527)	-0.124 (0.235)
Within-region accessibility to wage sums (ln)	0.323*** (0.148)	0.627*** (0.182)	0.247*** (0.0717)	0.0533 (0.0465)	0.0894 (0.0581)	0.0435* (0.0255)
Extra-regional accessibility to wage sums (ln)	1.941*** (0.372)	2.079*** (0.456)	0.118 (0.180)	0.630*** (0.231)	0.860*** (0.293)	0.321** (0.127)
Driving distance to central Stockholm (h)	0.813*** (0.153)	0.970*** (0.185)	0.0646 (0.0743)	-0.299** (0.144)	-0.147 (0.179)	0.148* (0.0787)
College graduates (share)	-0.332*** (0.0597)	-0.426*** (0.0717)	-0.0950*** (0.0290)	-0.420*** (0.114)	-0.415*** (0.133)	-0.0792 (0.0627)
Employment rate	-0.304*** (0.0878)	-0.348*** (0.114)	-0.0597 (0.0426)	-0.0276 (0.0690)	-0.0858 (0.0888)	-0.127*** (0.0378)
Visible minority change since 2004 (share)	-0.305 (0.229)	-0.212 (0.203)	-0.270** (0.111)	0.482** (0.228)	0.302* (0.179)	-0.564*** (0.125)
Constant	0.958 (10.70)	4.876 (13.12)	6.714 (5.192)	15.24* (8.161)	25.09** (10.36)	11.51** (4.474)
Observations	148	148	148	142	142	142
R-squared	0.627	0.609	0.283	0.469	0.447	0.263

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Regions ($n = 81$) are aggregations of municipalities ($n = 290$). The levels in 2014 and 2018 are predicted by variables recorded in that year. Change 2014–2018 are predicted by variables recorded in the original year that is, 2014.

larger for extra-regional accessibility in peripheral areas, meaning that the standardised changes are smaller than the differences in coefficients. It is further noteworthy that this is the only variable of interest where the aggregate results still hold in the disaggregated models.

Third, the effect of driving distance to Stockholm is strongly positive for SD vote shares for municipalities in urban regions; each hour of distance to Stockholm is associated with 0.8–1 percentage point higher support for SD. Such relationship is negative for the municipalities in peripheral regions (albeit not statistically different from zero in 2018). Such result implies that the positive relationship between distance to capital and support for SD is entirely dominated by the municipalities in urban regions.

Finally, we also observe an interesting pattern for the relationship between the change in visible minorities and support for SD. For the level of support captured by SD's vote share in the two elections, we find that a higher growth in visible minorities is negatively associated with SD support (albeit not statistically significant) in urban areas. But such relationship is positive and statistically significant in peripheral municipalities. This result implies that the isolated effect of having more non-western immigrants take off in opposing directions inside and outside of urban areas.

Concluding remarks

This article reappraises the role of *the geography* in 'the geographies of discontent'. The point of embarkation in this paper was that in addition to alienation from 'urban elites', a feeling of 'being left behind' can also take root when citizens live in places that are overshadowed economically by neighbouring places. A potential importance of proximity in a spatial continuum for how people assess their conditions and display discontent is an underexplored aspect in the debate. To address

this issue, we recall **Tobler's (1970, 236)** first law of geography: '*everything is related to everything else, but near things are more related than distant things*'. We argue that to understand geographies of discontent, and 'revenge voting', inter-regional and intra-regional disparities are important avenues to explore.

Communities of discontent are nested within their regional contexts and geographies, whereby the feeling of being left behind is, in addition to the national context, fuelled by their perception of prosperity in nearby places. We recognise the validity of the arguments brought forward in the existing literature: resentment towards the central political power ('the establishment') is real, and also supported by our analysis. However, over and above a locality's relative position to the country average at large, citizens are likely to compare the social and economic conditions of their own environment to other localities nearby; those that they associate with, resemble culturally more closely, and observe more often.

We evaluated this idea by analysing the extraordinary success of the Sweden Democrats (Sverigedemokraterna, SD) in Swedish politics in two general elections (2014 and 2018) across Swedish municipalities using an accessibility approach. We document that municipalities surrounded by larger municipalities in the same region, as well as those surrounded by larger regions, have substantially higher support for SD, holding their own economic mass constant. Inter-regional disparities are the strongest predictor in our analysis and they remain strong when we control for known confounding factors. This result is consistent both in urban and peripheral places. Further, revenge voting is also correlated with having larger areas nearby *within* the own region, albeit only reliably so in regions with a strong urban core.

An interesting interpretation is that the idea of infrastructure as a solution for these types of grievances may be counteracted at least to some extent, and particularly so with intra-regional links

to larger places. This is so, since *increasing* accessibility to nearby regions may indeed increase the extent to which people feel disadvantaged in their communities compared to places with larger economic capacity, in addition to perhaps also further relocation of economic activity to those larger places. We consider such interaction an absolute key for future research to consider.

Endnotes

¹ Regions consisting of a densely packed inner core and the surrounding connected area.

² See, for example, https://web.archive.org/web/20100925083436/http://hsf.bgu.ac.il/europe/index.aspx?pgid=pg_127842651505941456.

³ The λ for within-municipality accessibility is 0.02, for within-region accessibility 0.1 and for extra-regional accessibility 0.05.

⁴ For reasons of multicollinearity, we had to exclude the share of elderly people in the analysis. Including this variable does not meaningfully change any of the main results of the paper.

References

- Abreu, M. and Öner, Ö. (2020) Disentangling the Brexit vote: the role of economic, social and cultural contexts in explaining the UK's EU referendum vote, *Environment and Planning A: Economy and Space*, **52**: 1434–1456.
- Amin, A. (2004) Regions unbound: towards a new politics of place, *Geografiska Annaler, Series B, Human Geography*, **86**: S33–44.
- Andersson, M. and Gråsjö, U. (2009) Spatial dependence and the representation of space in empirical models, *The Annals of Regional Science*, **43**: 159–180.
- Andersson, M., Klaesson, J. and Larsson, J. P. (2014) The sources of the urban wage premium by worker skills – spatial sorting or agglomeration economies? *Papers in Regional Science*, **93**: 727–747.
- Arnorsson, A. and Zoega, G. (2018) On the causes of Brexit, *European Journal of Political Economy*, **55**: 301–323.
- Berry, B. J. L. (1964) Cities as systems within systems of cities, *Papers of the Regional Science Association*, **13**: 147–163.
- Castells, M. (2000) *The Rise of the Network Society*, 2nd ed. Oxford: Blackwell Publishers.
- Christaller, Walter. 1933. *Central Places in Southern Germany*, C.W. Baskin. Trans. London: Prentice-Hall [1966].
- Colantone, I., and Stanig, P. (2018) Global competition and Brexit. *American Political Science Review*, **112**(2): 201–218.
- Crescenzi, R., Di Cataldo, M., and Faggian, A. (2018) Internationalized at work and localistic at home: The 'split' Europeanization behind Brexit. *Papers in Regional Science*, **97**(1):117–132.
- Collier, P. (2018) *The Future of Capitalism: Facing the Anxieties*. London: Allen Lane, Penguin.
- Coyle, D. and Ford, R. (2017) Brussels bureaucrats and Whitehall Mandarins: taking regional identity seriously. In *Quo Vadis? Identity, Policy and the Future of the European Union*, p. 65–72. Centre for Economic Policy Research.
- Dijkstra, L., Poelman, H. and Rodríguez-Pose, A. (2020) The geography of EU discontent, *Regional Studies*, **54**: 737–753.
- Dorling, D. and Tomlinson, S. (2019) *Rule Britannia: Brexit and the End of Empire*. London: Biteback Publishing.
- Eklund, J. and Larsson, J. P. (2020) *När blir utrikes födda självförsörjande?* Entreprenörskapsforum. Available online at: https://entreprenorskapsforum.se/wp-content/uploads/2020/04/Rapport_Sjalvforsorjning_web.pdf
- Essletzbichler, J., Disslbacher, F. and Moser, M. (2018) The victims of neoliberal globalisation and the rise of the populist vote: a comparative analysis of three recent electoral decisions, *Cambridge Journal of Regions, Economy and Society*, **11**: 73–94.
- Figus, G., Lisenkova, K., McGregor, P., Roy, G. and Swales, K. (2018) The long-term economic implications of Brexit for Scotland: an interregional analysis. *Papers in Regional Science*, **97**: 91–115.
- Goodwin, M. and Milazzo, C. (2017) Taking back control? Investigating the role of immigration in the 2016 vote for Brexit. *The British Journal of Politics and International Relations*, **19**: 450–464.
- Harvey, D. (1969) *Explanation in Geography*. London: Edward Arnold.
- Haynes, K. E., Fotheringham, A. S. (1984) *Gravity and spatial interaction models*, Vol. 2. Beverly Hills: Sage publications.
- Henrekson, M., Öner, Ö. and Sanandaji, T. (2020) The refugee crisis and the reinvigoration of the nation-state: does the European Union have a common asylum policy? In *The European Union and the Return of the Nation State*, pp. 83–110. Cham: Palgrave Macmillan.
- Jessop, B. (2001) Institutional re (turns) and the strategic – relational approach, *Environment and Planning A*, **33**(7): 1213–1235.

- Jessop, B. (2016) Territory, politics, governance and multispatial metagovernance, *Territory, Politics, Governance*, **4**(1): 8–32.
- Johansson, B., Klaesson, J., and Olsson, M. (2002) Time distances and labor market integration. *Papers in Regional Science*, **81**: 305–327.
- Johansson, B. and Klaesson, J. (2011) Agglomeration dynamics of business services, *The Annals of Regional Science*, **47**(2): 373–391.
- Johansson, B., Klaesson, J. and Olsson, M. (2003) Commuters' non-linear response to time distances, *Journal of Geographical Systems*, **5**: 315–329.
- Kaufmann, E. (2019) Can narratives of white identity reduce opposition to immigration and support for hard Brexit? A survey experiment, *Political Studies*, **67**: 31–46.
- Klaesson, J., Larsson, J. P. and Norman, T. (2015) Accessibility and market potential analysis. In C. Karlsson, M. Andersson and T. Norman (eds.) *Handbook of Research Methods and Applications in Economic Geography*, pp.412–435. Cheltenham: Edward Elgar.
- Klaesson, J., Öner, Ö. and Pennerstorfer, D. (2021) Getting the first job: size and quality of ethnic enclaves and refugee labor market entry, *Journal of Regional Science*, **61**: 112–139.
- Los, B., McCann, P., Springford, J. and Thissen, M. (2017) The mismatch between local voting and the local economic consequences of Brexit, *Regional Studies*, **51**: 786–799.
- Lösch, A. (1940) *Die räumliche Ordnung der Wirtschaft*. Jena: G. Fischer. English translation (1954): *The Economics of Location*.
- Lösch, A. (1944/1954) *Die raumliche Ordnung der Wirtschaft*, 2nd edn. Jena: Gustav Fischer [Translated by W. H. Woglom and W. F. Stolper as *The Economics of Location*. New Haven, CT: Yale University Press].
- Matas, A., Raymond, J. L., & Roig, J. L. (2015). Wages and accessibility: The impact of transport infrastructure. *Regional Studies*, **49**(7): 1236–1254.
- McCann, P. (2018) The trade, geography and regional implications of Brexit, *Papers in Regional Science*, **97**: 3–8.
- McCann, P. (2020) Perceptions of regional inequality and the geography of discontent: Insights from the UK, *Regional Studies*, **54**: 256–267.
- McCann, P. and Ortega-Argiles, R. (2021) EU cohesion policy: the past, the present and the future. In D. Rauhut, F. Sielker and A. Humer (eds.) *The EU's Cohesion Policy and Future Spatial Governance: Territorial, Economic and Social Challenges*. Cheltenham: Edward Elgar.
- Östh, J., Clark, W. A. and Malmberg, B. (2015) Measuring the scale of segregation using k-nearest neighbor aggregates, *Geographical Analysis*, **47**(1): 34–49.
- Parr, J. B. and Denike, K. G. (1970) Theoretical problems in central place analysis, *Economic Geography*, **46**: 568–586.
- Reilly, W. J. (1929) *Methods for the Study of Retail Relationship*. Austin: University of Texas.
- Reilly, W. J. (1931) *The Law of Retail Gravitation*. New York: Pilsbury.
- Rodríguez-Pose, A. (2018) The revenge of the places that don't matter (and what to do about it), *Cambridge Journal of Regions, Economy and Society*, **11** (1): 189–209.
- Rodríguez-Pose, A. (2020) The rise of populism and the revenge of the places that don't matter, *LSE Public Policy Review*, **1**(1): 1–9.
- Rodríguez-Pose, A., Lee, N. and Lipp, C. (2020) *Golfing with Trump: Social Capital, Decline, Inequality, and the Rise of Populism in the US*. Papers in Economic Geography and Spatial Economics, No. 14. London: LSE Department of Geography and Environment.
- Rodríguez-Pose, A. and Dijkstra, L. (2020) *Does Cohesion Policy Reduce EU Discontent and Euroscepticism?* WP 04/2020. Luxembourg: Publications Office of the European Union.
- Rodrik, D. (2017) The trouble with globalization, *The Milken Institute Review*, 671–685.
- The Economist (2017) *Left in the Lurch: Globalisation Has Marginalised Many Regions in the Rich World*, available on at: <https://www.economist.com/briefing/2017/10/21/globalisation-has-marginalised-many-regions-in-the-world>.
- Tobler, W. R. (1970) A computer movie simulating urban growth in the Detroit region, *Economic Geography*, **46**(supp 1): 234–240.
- Wennström, J. and Öner, Ö. (2015) Den geografiska spridningen av kommunplacerade flyktingar i Sverige, *Ekonomisk debatt*, **4**: 52–68.
- Wennström, J. and Öner, Ö. (2021) Political hedgehogs, *Statsvetenskaplig tidskrift*, **122**: 671–685.