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Mobilizing the countryside: rurality, turnout and postal voting*

Charles Pattie [a], Stephanie Luke[b] and Luke Temple[c]

[a]Department of Politics and International Relations, University of Sheffield, Sheffield, UK; [b]School of Law and Politics, Cardiff University, Cardiff, UK; [c]Department of Geography, University of Sheffield, Sheffield, UK

ABSTRACT

Election campaigners report greater difficulties in campaigning in rural than in urban constituencies, because of the larger distances involved in traveling around rural seats. Similarly, rural voters can live further from their polling stations than their urban counterparts, increasing the costs of voting. Yet studies of turnout often report higher turnout in rural than in urban seats. We investigate this apparent paradox by examining rurality and constituency turnout at British general elections between 2010 and 2019. Although the costs of in-person voting are greater in rural areas, postal voting is no more common in the countryside than in the town. Instead, much of the rural-urban differential in turnout is explained by the socio-economic make-up of local electorates. Groups who are generally more likely to participate are relatively over-represented in more rural areas, and when this is taken into consideration, some, but not all, of the "rural advantage" in turnout can be accounted for. Other things being equal, turnout remains higher in rural areas even when we control for socio-economic and political conditions, and it cannot be explained away by greater uptake of postal voting. Far from facing a democratic deficit, Britain's rural areas are relative hotspots of electoral participation.

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Electoral participation in rural areas presents a paradox. On one hand, there are *a priori* reasons to expect turnout to be lower in more rural than in more urban constituencies. Party activists point to the greater difficulties they face

CONTACT Charles Pattie C.Pattie@sheffield.ac.uk Department of Politics and International Relations, University of Sheffield, Sheffield S10 2TU, UK

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campaigning in rural seats: votes live further apart, are harder to reach physically, and so on. As voter mobilization is a key function of parties' constituency campaigning, less effective campaigning might lead to lower electoral participation in the countryside than in the town. And because they live in much more dispersed communities, many rural voters live further from their nearest polling station (sometimes considerably so) than do their counterparts in densely populated towns and cities, increasing the inconveniences of voting in person and hence risking lower turnout. Yet on the other hand, these expectations are often confounded by empirical analyses of turnout. In actual elections, turnout is often higher in the countryside than in the city. In this paper, we explore that paradox through an examination of rurality and constituency turnout at British General Elections between 2010 and 2019. We outline the turnout gap between town and country and investigate potential explanations for it. And we examine the extent to which postal voting has been adopted by rural voters to lessen the costs of voting in more remote communities.

We begin by discussing some of the existing scholarship on rurality, access to polling stations and electoral participation. We then outline our data and methods, before presenting our findings. We find no evidence for a "democratic deficit" in Britain's rural areas: general election turnout is generally higher there than in urban constituencies. This is largely a function of rural electorates' social make-up, which tends to be older, whiter and more likely to be owner-occupiers than urban electorates. Once these factors are taken into account, however, the independent effect of rurality on turnout is inconsistent over time: in some election years, turnout increases as constituencies become more rural, while in other election years, the effect either vanishes or reverses. Finally, postal voting *per se* does not shore up rural turnout: rates of postal voting are much the same in rural and urban seats. Rural voters often turn out at a higher rate than their urban counterparts, but they do so without making greater use of alternatives to in-person voting.

Rurality and participation: past research

Electoral turnout is perhaps the most widely researched form of public political participation (Bekkouche, Cage, and Dewitte 2022; Haspel and Knotts 2005; Magalhães, Aldrich, and Gibson 2020; Santana and Aguilar 2021; Smets 2012). Across a wide range of different countries and time periods, those citizens who vote tend to be older and more affluent than those who abstain. They also generally have more, and higher-level, formal educational qualifications than non-voters and are more interested in politics and more partisan. Political conditions affect turnout too. Turnout is often (though not always) higher the closer and less predictable the outcome of the election, and the more proportional the electoral system (Bursztyn

et al. 2024; Lijphart 1997; Stockemer 2015; Blais and Carty 1990; Blais and Aarts 2006).

The focus for this paper, however, is a different form of local contextual effect on turnout in a community: how rural or urban it is. Interviews we have conducted with activists from a major UK party who are responsible for aspects of its electoral campaigning confirm that many consider campaigning to be harder in rural than in urban areas (Luke et al. 2025). It is likely that election campaigners in other countries' rural districts face similar concerns. This carries a direct implication that (other things equal) turnout will be lower in rural than in urban areas.

There are theoretical reasons why we might expect such an outcome. From a rational choice perspective, anything that increases the costs of voting should reduce turnout (Downs 1957). One might therefore anticipate that the further voters have to travel from their homes to their nearest polling station in order to cast their ballots, the greater the costs (primarily of time and effort) they incur in doing so. And a logical prediction arises from this: the further people have to travel to cast a vote, the less likely they will be to do so (and the more likely they will be to abstain). Empirical studies in the UK, USA and Canada confirm this (Gimpel and Schuknecht 2003; Orford and Schuman 2002; Orford et al. 2011; Bhatti 2012; Garnett and Grogan 2021; Bitzer, Dukes, and Cooper 2023).

While many of the studies testing that relationship have been conducted in urban settings, this line of thinking also leads to a plausible prediction about urban-rural differences in turnout. Voters who reside in geographically dispersed rural constituencies are more likely to live relatively far from their nearest polling station than are their counterparts living in tightly packed urban ones. We might therefore anticipate greater costs to voting in rural than in urban seats. And it seems voters themselves are aware of this: one recent cross-national study finds that urban voters perceive lower costs to voting than rural voters (Santana and Aguilar 2021). On that basis, therefore, our first hypothesis is:

H1a: Turnout is lower, *ceteris paribus*, in rural than in urban seats.

However, only a relatively small part of the large literature on turnout has examined urban-rural differences. And work on the topic, carried out in a range of different national contexts, presents somewhat contradictory findings (for recent meta-analyses of the turnout literature, see Cancela and Geys 2016; Smets and van Ham 2013; Stockemer 2017). Some studies report lower turnout and participation in rural than in urban communities (Kaufman 2019; Durkan 2022). But (and contrary to the "costs of voting" prediction) others find the opposite, reporting higher turnouts in more rural places than in more urban ones (Bratton 2008; Kavanagh, Mills, and Sinnott

2004; Kavanagh 2015; Garcia-Rodriguez and Redmond 2020). Indeed, some have set out theoretical reasons for higher rural than urban political participation, arguing that in urban areas there is greater depersonalization of politics and reduced social pressure on people to vote (Henderson and McEwen 2010, 412; Lin and Trujillo 2023). An alternative hypothesis is therefore also possible:

H1b: Turnout is higher, ceteris paribus, in rural than in urban seats.

To add to the complications, some studies suggest a non-linear relationship, with turnout decreasing with increasing distance between voters' homes and their polling sites, up to distances of two to five miles, but increasing (or at least no longer falling) turnout thereafter (Martis et al. 1992; Gimpel and Schuknecht 2003; Haspel and Knotts 2005). In part, this may be caused by greater access to and use of cars in rural than in urban areas (Bhatti 2012). And yet other studies find a changing pattern over time. For instance, Durkan (2022) reports that between 2012 and 2019, an urban-rural turnout gap in Michigan, with initially lower turnout in more rural areas, narrowed as turnout rose more in rural than in urban communities. Kavanagh's (2015) study of turnout at Irish elections between 2007 and 2014 also finds a narrowing rural-urban turnout divide, but in the opposite direction. There, though rural turnout was initially higher than urban turnout, over time turnout increased more in the towns and cities than in the countryside, again narrowing the gap.

Other factors might also complicate the effect of increasing rurality on electoral participation. For instance, in many modern societies, rural populations tend to be older than their urban peers, not least because younger people are drawn to the opportunities of city life. But (as discussed above) we know that older people tend to turn out more readily than younger people, and this age gap has grown over time. In so far as this is an issue, it may reduce, or even reverse, a tendency for turnout to be lower in rural than in urban areas. Other socio-demographic and political correlates of participation, such as class, education, constituency marginality and so on, if they also vary across the urban-rural spectrum, may also cut against any tendency for turnout to be lower in more rural than in more urban areas. Hence it is important to control for potential confounders, a point we return to below.

Also potentially undercutting a simple expectation of lower rural turnout is the shift from in-person to more remote forms of voting, and in particular to postal voting. In the past, a postal vote was difficult to obtain at British elections, and few voters qualified: between 1945 and 1997, only around 2% or 3% of votes were cast by mail (Pattie et al. 1996; Rallings and Thrasher 2012; Cracknell 2014). But since 2001, the rules on postal voting have been relaxed: any voter can opt to vote by post. In recent elections, around 1 in every 5 votes are postal votes (Rallings and Thrasher 2012; Cracknell 2014;

Townsley et al. 2023). Easy access to postal ballots therefore potentially affords voters in more remote rural locations a route to casting a ballot which might in effect mitigate any "friction of distance" problems they face in accessing distant polling stations. Some have argued that, by reducing the costs of voting, easier access to postal ballots might actually lead to increased turnout (Rallings and Thrasher 2007; Leuchinger, Rosinger, and Stutzer 2007; McDonald et al. 2024). The evidence is very mixed, in truth: to a large extent, voters who make use of postal ballots would vote anyway, even if a postal option was not open to them (Karp and Banducci 2000; Rallings, Thrasher, and Borisyuk 2010). Even so, it is possible that both the take-up and the effect of postal voting might be different in more rural than in more urban constituencies. If postal votes are used by rural voters to compensate for the greater friction of distance they face compared to their urban peers in traveling to their polling stations, we expect that:

H2: Registration for a postal ballot will be higher in more rural than in in more urban constituencies; and
H3: Postal votes will form a higher proportion of the votes cast in more rural than in more urban constituencies.

The above discussion begs some obvious questions which motivate the analyses reported below. First, does turnout in fact vary consistently between more rural and more urban communities? Is there (as some campaigners fear) a rural "democratic deficit" in the form of lower electoral turnout in the countryside than in the city? Or is rural turnout, in fact, higher than urban? Second, if there is an urban-rural turnout differential, is it the product of socio-economic differences between rural and urban communities? And third, is there greater uptake of postal ballots in more rural than in more urban constituencies (and does that affect any variations in turnout)? In answering these questions, we seek to further understand the impact of rurality on political participation.

Methodology

To address these questions, we employ a dataset pooling constituency general election results for every seat in Britain at each contest between 2010 and 2019 (we exclude seats represented by the Speaker of the House of Commons, and Northern Irish constituencies: descriptive statistics for all key variables are in Table A1 in the online appendix).[1] Each constituency

[1]Although the 2024 UK General Election had taken place at the time of writing, comparable constituency-level Census data was not yet available for the new constituencies employed for the first time in that contest. We have therefore omitted the 2024 contest from our analyses. We see no reason, however, to expect substantially different results in that election year.

therefore appears in the dataset four times, once for each election year, and the unit of analysis is a "constituency year". Our main dependent variable is the constituency turnout at each election, expressed as the percentage of the constituency electorate who voted. In later analyses, we also look at the number of postal votes obtained and cast at each general election between 2015 and 2019, again expressed as a percentage of the local electorate in that election (we do not have data on postal votes in 2010).

Measuring what constitutes a rural or an urban constituency is not straightforward. One strategy might be to use the Parliamentary Boundary Commissions' designation of all UK parliamentary constituencies as either "Borough" (Burgh in Scotland) or County seats. Borough constituencies are in predominantly urban areas, while County seats contain "more than a small rural element" (Boundary Commission For England 2023, 10). While this may seem a straightforward metric, however, it is problematic and not satisfactory for our purposes. The problem is that many "County" constituencies are actually comprised mainly of large towns, often in the commuter hinterland of major cities. To take one example, the East Dunbartonshire constituency immediately north of the city of Glasgow, was designated a "County" constituency in the 2005 boundary review because around half of its land area was countryside. But the great bulk of its population live in the commuter towns of Milngavie, Bearsden, Bishopbriggs and Kirkintilloch, the first three of which are part of the Greater Glasgow built up area: by no stretch of the imagination is this is really a rural seat. The same is true of many other "County" seats. What is more, a simple binary distinction between "urban" and "rural" is rather crude: rurality is better conceptualized as a continuum, from very urban to very rural. To reflect this, a constituency's population density, measured as the number of residents per hectare in 2020, is our preferred measure of how rural it is. The higher the population density, the more urban (and less rural) the seat. It varies from a low of 0.05 people per hectare in the Ross, Skye and Lochaber constituency, to a high of 175.52 people per ha. in Westminster North.

As the population density variable is strongly skewed, we have repeated all the analyses reported below using the logged population density: we have also repeated the analysis using the Boundary Commissions' classification of each seat into a County (rural) or Borough (urban) constituency as a further robustness check (the models are reported in the online appendix: Tables A2 and A5 to A8): our key findings are unaffected. It might also be objected that over the course of the decade covered in this paper, Britain's changing population geography will have also produced changes in the geography of population density, rendering a measure of population density taken at the end of our time period a problematic indicator for elections at the start of the period. We recognize the theoretical anxiety. But it is worth noting that the 2020 constituency population density variable is very

strongly correlated indeed (r = 0.99) with the equivalent measure taken at the time of the 2011 UK Census (near the start of our time period). In other words, the underlying geography of rurality in Britain did not change markedly over the period studied here.

In the analyses below, we also take into account other factors which might affect constituency turnout. As discussed above, some of these factors are related to the socio-economic make-up of each constituency. Election turnout would be expected to be higher in more than in less affluent constituencies, in seats where the population is on average older than where it is younger, and so on. We control for these possible influences using constituency results from the 2011 Census (discussed in greater detail below).

Another possible political confounder is a constituency's electoral marginality. Under the first-past-the-post system used in the UK for Westminster elections, we might expect that the more marginal a constituency is, and hence the closer the political battle there, the higher the seat's election turnout should be, other things being equal. Two related factors might be thought to produce this outcome. First, the "rational voter paradox" states that a fully rational voter should not go to the inconvenience of voting, as the likelihood their personal participation will prove decisive in any election contest will be so small that they can safely assume the result be unchanged where they vote or not (Downs 1957). While this exaggerates the case (turnout is routinely much higher than a strict application of the paradox would suggest), it does point to a clear expectation which also has some empirical grounding: the closer the electoral competition between the first and second-placed parties in a constituency, the more likely it is that an individual voter's personal participation might be decisive, and hence the more voters should turn out (Denver and Hands 1974, 1985; Pattie and Johnston 2005; Levine and Palfrey 2007). Second, political parties, as rational actors, expend greater campaign efforts in marginal than in safe seats, as the chances of affecting the result in the former races are much higher than in the latter, providing a better return to their investment (Johnston and Pattie 2006, chapter 6; Pattie et al. 2017). And, by mobilizing more voters, that extra campaign effort will also tend to produce higher turnout in more marginal than in safer seats (Johnston and Pattie 2013). In the analyses below, we therefore control for constituency marginality, measured by the winning party's percentage majority at the previous election: the higher their majority, the less marginal the seat.[2]

To take into account contest-specific factors which might affect participation, we also include fixed effects for election year.

[2]We use marginality at t-1 as this is a relatively standard measure of how close the competition is in a seat, and is unaffected b the results of the election at time t.

Rurality and electoral turnout

To examine how rurality affects turnout, we begin by estimating a simple bivariate regression model, with the percent turnout in each constituency in each of our four election years as the dependent variable, and the seat's population density in 2020 as the independent variable (see Model I in the first two columns of Table 1). Two things stand out. First, the effect of rurality (as measured by population density) on turnout, while statistically significant, is substantively quite weak: the model R^2 value is small. Second, weak though it is, the relationship between population density and turnout is negative. On average, in other words, insofar as rurality does have an influence, it is in the exact opposite direction to the notion of a "democratic deficit" anticipated by party campaigners who fear that it will be harder to mobilize voters in the countryside than in cities (Luke et al. 2025). In fact, the more rural the seat (i.e. the lower its population density), the higher its election turnout. On average, every increase in population density of one person per hectare reduces turnout by 0.06 percentage points. This may not seem substantial, but it is worth noting that constituency population density in 2020 ranged from just 0.05 to 175.52 people per hectare. The effect size suggests, therefore, that in moving from the least to the most densely populated constituency, turnout will decrease by around 10.5 percentage points (about a quarter of the overall range for constituency turnout in the sample as a whole). Living in more rural areas does not seem to be an impediment to electoral participation.

This initial model is very simple, however, and does not explain much of the variance in turnout. With such an underspecified model, it is possible there are other, confounding, factors at play which might mask or distort the relationship between rurality and electoral participation.

Table 1. Rurality and turnout, 2010–2019 (OLS regressions).

Model:	Y = % constituency turnout 2010–2019					
	I		II		III	
	B	SE	b	SE	b	SE
Constant	68.13	0.13**	65.85	0.18**	66.23	0.20**
Population density 2020	−0.06	0.00**	−0.01	0.00*	−0.03	0.01**
% Majority, t-1			−0.02	0.00**	−0.03	0.00**
Component 1: SES			3.92	0.06**	3.91	0.06**
Component 2: Trad Britain			1.66	0.13**	1.66	0.13**
Election year (comparison = 2010)						
2015			1.18	0.18**	1.21	0.22**
2017			3.68	0.18**	2.86	0.22**
2019			2.25	0.18**	1.72	0.22**
Election 2015*Popn density					−0.00	0.01
Election 2017*Popn density					0.04	0.01**
Election 2019*Popn density					0.03	0.01**
R^2	0.08		0.68		0.69	
N	2528		2528		2528	

*$p < 0.05$; **$p < 0.01$.

As discussed above, one potential confounder is constituency marginality. At many (though not all) elections, the more marginal a constituency (and hence the closer the competition between the leading parties there), the higher the local turnout tends to be. In truth, whether constituency marginality can explain population density's negative influence on turnout is doubtful, as in British elections, many rural constituencies tend to be relatively safe Conservative seats (and large margins of victory should suppress, not encourage, turnout). Even so, it would make sense to at least control for its confounding influence.

Another set of potential confounders reflects the socio-economic determinants of political participation, and their geographic distribution. A mainstay of research on participation is that turnout tends to be higher among older compared to younger people, among university graduates compared to those with lower-level formal qualifications, and among the economically affluent and more middle class compared to the less affluent and more working class (Geys 2006). Because of the sorting effects of housing and job markets, many of these individual-level patterns are reproduced at the level of constituencies (some areas having greater preponderances of more affluent people, or of less affluent people, and so on). More rural communities tend to be older, on average, than the populations of major cities, and they tend to have less ethnically diverse populations and are more monoculturally White British. And they are often (though not always) home to relatively large concentrations of middle-class households. All these factors might be expected to lead to higher turnout in rural than in urban areas, purely because of the "social-economic status" effect. To properly evaluate the claim that rurality discourages turnout, therefore, we need to control not only for the local political situation in each seat, but also for these socio-economic conditions.

Local socio-economic conditions are measured using variables taken from the 2011 UK Census for each constituency: the percentage of households which were owner-occupied, the percentage of households with no "deprivation" characteristics, the percentage of residents holding a university degree or equivalent, the percentage of people in a professional or managerial occupation, the percentage of residents who described their ethnicity as White British, the percentage of residents aged 65 or over, and the percentage of the economically active who were unemployed (this was measuered in 2019). Although these Census variables were measured near the start of our time period, the underlying social geography they reveal is unlikely to have altered much in most constituencies over the period we consider, and certainly not enough to change our overall findings.

These Census variables are strongly correlated with each other and are in effect alternative measures of a few, wider, underlying concepts. Including them all in one regression model would raise substantial multicollinearity problems and potentially unstable estimates. We therefore subjected them

to a principal components analysis (with a varimax rotation to clarify the interpretability of the components) to uncover the underlying structure while summarizing the variables into new scales which are uncorrelated with each other (hence dealing with multicollinearity concerns). Only the first two components are needed to summarize all seven Census variables (Table 2). These are the only components to pass Kaiser's criterion, with eigenvalues greater than 1 (an examination of the eigenvalue scree plot also indicates a clear break of slope between components one and two on the one hand and the remaining components on the other: Figure A1).

The two components together summarize 87.6% of the variation in the original 7 Census variables. Component 1 loads strongly and positively on % professionals and managers, % in households with no deprivation, and % with level 4 qualifications, and strongly and negatively with % unemployed, making this a clear indicator of the socio-economic status (SES) of an area. Given the loadings, higher scores on the component indicate more affluent, middle-class areas with higher proportions of professionals and university graduates and lower percentages out of work, while lower scores indicate the opposite. Component 2, meanwhile, is strongly related to the % of the population identifying as white British, the % aged over 65, and the % who own their homes, with positive component loadings for all three. The older the population of an area, the more "white British" it is, and the more it is dominated by homeowners, the higher it scores on component 2. Hence component 2 seems to be measuring the extent to which an area is dominated by "traditional older Britain" (for want of a better phrase).

Regression analyses (reported in the appendix: Table A3) with population density as the Y variable and the two component scores summarizing the Census variables as the independents confirm the more "traditional British" (the older, whiter and more home-owning) an area's population profile, the lower its population density and hence the more rural the locality. Closer examination (not reported here) reveals that of the two component scores,

Table 2. Principal components analysis (with varimax rotation) of 2011 Census variables.

	Rotated component loadings	
	Component 1	Component 2
% professionals and managers, 2011	0.972	0.012
% with level 4 qualifications, 2011	0.898	−0.364
% in households with no deprivation 2011	0.874	0.393
% unemployed 2019	−0.734	−0.579
% White British ethnicity 2011	−0.069	0.901
% aged 65 or over, 2011	0.020	0.897
% home owners 2011	0.215	0.888
Rotated eigenvalue	3.107	3.027
Proportion of variance accounted for	0.444	0.432
Cumulative proportion of variance	0.444	0.876
N	2528	

it is the "traditional British" score which has by far the strongest link with how rural a constituency is. The link between an area's rurality and its affluence (as measured by the first component) is less clear – positive when population density is not logged, negative when it is, but in both cases the relationship between component 1 and rurality is very weak indeed.

Model II (Table 1) adds constituency marginality, fixed effects for election year (2010 serves as the comparison case for these), and the two component score variables. Doing so adds considerably to the model's predictive power (R^2 jumps from 0.08 to 0.68). As expected, the larger the previous winner's majority in a constituency (and hence the less marginal it was), the lower turnout was there on average. The year fixed effects show that, compared to the 2010 contest, constituency turnout was on average higher in subsequent elections, peaking in 2017. For the component scores, the more affluent the constituency (as measured by the socio-economic status component) and the more "traditionally British" it was, the higher its election turnout was.

Of most interest to us is the impact on population density's effect on turnout. The effect is reduced somewhat (the effect size is about a sixth of that suggested by the naïve model reported in Model I), but it remains negative and statistically significant. Even when we control for potential confounders, therefore, lower population density is still associated with higher turnout.

The implication is clear. To some extent, the tendency for turnout to increase as population density decreases can be put down to the higher concentrations of older, home-owning white British populations in rural than urban areas, and by these groups' tendency to vote in larger numbers than younger, more ethnically diverse populations where more people rent their property. But no matter what we do, we can find no scenario in which turnout is lower in more rural than in more urban constituencies. If anything, the opposite is true. Rural voters are no less likely to vote than are their urban counterparts – and in fact may even be more likely to do so.

Our final turnout model (Model III, Table 1) investigates whether the effect of rurality on turnout is steady over time by adding interactions between population density and election year. The main effect of population density (which now shows the impact of population density at the 2010 election) remains significant and negative (with an effect size about half that reported in Model I), while the interactions between population density and the variables for the 2017 and 2019 elections are significant and positive. This suggests that the impact of rurality on turnout changed from election year to election year. It further suggests that while turnout was generally higher in more rural than in more urban seats at the 2010 and 2015 elections, the effect was smaller (or even reversed) at the 2017 and 2019 contests.

It can be hard to read the implications of interaction effects directly from the relevant regression equation. To make it easier to do so, we have visualized the

interaction effects in Model III by plotting the predicted relationship between population density and turnout in each election year, holding all the other independent variables at their averages (Figure 1). This confirms that at the 2010 and 2015 elections, the relationship was indeed negative (and quite similar – the prediction trend lines are almost parallel, and the 95% confidence intervals also overlap at higher levels of population density suggesting that in more urban settings there was little difference in turnout between the two elections). At those contests, turnout was on average higher in more rural than in more urban seats. But at the 2017 election, the predicted trend is, if anything, weakly positive, with somewhat higher turnout in more densely populated urban constituencies than in less densely populated rural ones (though the large confidence interval for estimates at the upper bound of population density makes this slightly unclear). And at the 2019 election, there was no "rurality" effect: the trend line is to all intents and purposes flat. As a robustness check, the interaction model was also run using the logged population density (model III in Table A1 and Figure A2), and with the County/Borough constituency variable (Model III in Table A6). The results were broadly similar to those using untransformed population density, with more pronounced negative effects of rurality in turnout at the 2010 and 2015 elections than in 2017 or 2019. Where the three versions differ, however, is in what they imply for the effect of rurality on turnout at the 2017 and 2019 contests: when population density is logged, the trend in both election years is negative, indicating higher

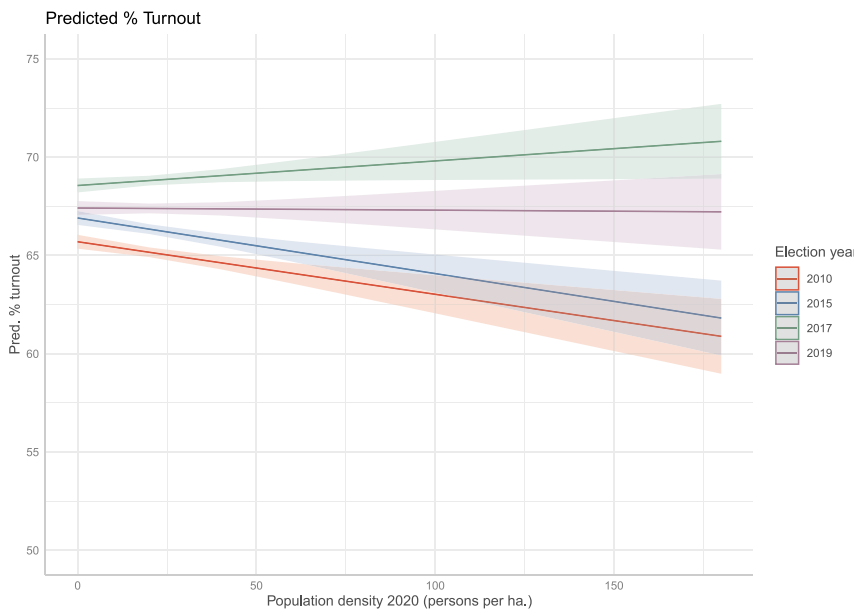

Figure 1. Predicted % constituency turnout and rurality, by election year.

turnout in more rural seats, not flat or positive (as in the untransformed model). In the County/Borough version of the model, meanwhile, turnout is consistently higher in rural County seats than in urban Borough ones in every election year apart from 2017, when there is no discernible difference between them However, where all three versions of the model agree is that the effect of rurality on constituency turnout was not steady over time and was noticeably less pronounced at the 2017 and 2019 contests than in either 2010 or 2015.

These change over time are intriguing. We are unable to investigate them fully in the context of this paper, but we suspect that two factors were at play, especially in the 2017 and 2019 contests, which may have reduced the urban-rural turnout differential. First, after hitting a post-war low at the 2001 General election, national turnout in the UK increased at every General Election up to 2017, when it reached its highest point since the late 1990s. As turnout rises, all differentials in turnout (including the rural-urban divide) may tend to reduce (at the limiting case, were turnout to reach 100%, there would be no differential turnout at all!). Second, the 2017 and 2019 elections in the UK were dominated by the Brexit issue, which proved both highly divisive and highly mobilizing: voters had strong opinions on the issue, which varied cross urban-rural, and big city-small town divides, and that may also have given an extra incentive for higher turnout in more urban areas at those two contests. However, we are in the realms of speculation here: this is a topic for further research.

Overall, our analyses so far provide no support for H1a: there is no evidence of declining as constituencies become more rural. But we do have some evidence for H1b: at least some election years, turnout tends to be higher in more rural than in more urban seats. And the effect sizes are moderate.

Rurality and postal voting

Part of the reason for relatively high turnouts in more rural seats rests on the socio-economic make-up of those constituencies, therefore. That may help offset the greater physical costs of voting in more dispersed rural communities (time spent traveling to sometimes distant polling stations, etc.) compared to more densely packed urban seats. Another factor which might have a similar effect is access to postal voting (now very easy in British elections). If voters in more rural communities make greater use of postal votes than their more urban peers, that might counteract greater friction-of-distance costs involved in traveling further to vote in person in rural than in urban constituencies.

We test this by modeling the percentage of the constituency electorate who were issued with, and the percentage who cast, a postal ballot in each seat at the 2015, 2017 and 2019 General Elections (we do not have postal

voting data for 2010, but we have no reason to expect any real difference in the results). There is evidence that applications for postal ballots tend to be higher among more affluent voters, older voters, and among voters in more marginal seats (see e.g. Townsley et al. 2023; Pattie et al. 1996), so we control for both the socio-demographic profile of each constituency (using the component scores described in the previous section) and the marginality of the seat (measured by the percentage majority of the winning party at the previous general election). As before, we also include fixed effects for election year (with 2015 as the base year). Our main independent variable is once again constituency population density. And as a robustness check we have repeated all our analyses using the logged population density and with the County/Borough constituency distinction: the results, given in Tables A3, A4, A7 and A8 in the online appendix, largely confirm our findings.

Turning first to the proportion of the electorate who were issued with postal votes, a simple bivariate model suggests that the less urban a constituency, the higher the proportion of its electorate who were issued with a postal vote (Table 3, Model I). Again, the model is not a particularly good fit to the data (population density accounts for just 4% of the variance in the % issued with a postal ballot). But it is in the direction we might expect if rural voters were making greater use of postal votes to compensate for the increased costs they would face if they were to vote in person, consistent with H3. The effect size suggests that as we move from the least to the most urban constituency in Britain, postal vote application rates drop by an average of 5.2 percentage points.

But that interpretation evaporates when we control for constituency marginality and socio-economic conditions (Table 3 Model II: Model III adds interactions between population density and election year, but neither of the interactions are significant and the main conclusions from model II remain unchanged, so we do not discuss this model further here). Higher proportions

Table 3. Rurality and % issued with a postal vote, 2015–2019 (OLS regressions).

Model:	Y = % electorate issued with postal vote, 2015–2019					
	I		II		III	
	b	SE	b	SE	b	SE
Constant	18.36	0.13**	17.71	0.26**	17.80	0.28**
Population density 2020	−0.03	0.00**	−0.00	0.01	−0.01	0.01
% Majority, t-1			−0.04	0.01**	−0.04	0.01**
Component 1: SES			0.54	0.10**	0.54	0.10**
Component 2: Trad Britain			0.81	0.20**	0.81	0.20**
Election year (comparison = 2015)						
2017			1.95	0.24**	1.87	0.30**
2019			1.09	0.24**	0.94	0.30**
Election 2017*Popn density					0.00	0.01
Election 2019*Popn density					0.01	0.01
R^2	0.04		0.10		0.10	
N	1896		1896		1896	

*$p < 0.05$; ** $p < 0.01$.

of postal votes were issued in more marginal constituencies than in safer ones, in more affluent than in poorer seats, and in more than in less "traditional Britain" places. The closer the local electoral contest (and hence the more each vote counted), the more likely people were to apply for a postal ballot. And the more the constituency's population was comprised of groups (older voters, home owners, graduates, the more affluent) who are most likely to vote no matter what, the more people there applied for a postal vote. There were also small but significant increases in applications for postal ballots at both the 2017 and 2019 elections compared to the 2015 contest. However, population density had no effect on the take-up of postal voting once these other factors were taken into account. In other words, initial appearances notwithstanding, the postal ballot was not being used differently in rural than in urban areas: once we control for who is liable to apply, and for political conditions, the urban-rural difference in postal ballots issued vanishes. Once we control for possible confounders, therefore, H3 proves unsupported.

Further analyses (not reported here) reveal that it is the socio-economic dimensions that really make the difference. When we control only for year fixed effects and constituency marginality, the relationship between population density and the percentage of postal votes issued remains statistically significant and negative – higher proportions of postal ballots were issued, on average in more rural seats. But when we control only for the election year fixed effects and for the two socio-economic dimensions, rurality ceases to have any significant effect on the take-up of postal votes. Pushing this further, it is the "traditional Britain" dimension that in effect renders population density insignificant in the model. Controlling only for year effects and the SES dimension, the effect of population density is still significant and negative. But in a model containing only population density, the year effects and the "traditional Britain" dimension, population density becomes an insignificant effect. The reason there is somewhat greater take-up of postal voting in more rural than in more urban areas, therefore, would seem to be that the former areas have somewhat older, less ethnically diverse and more home-owning populations than the latter, not because of their rurality *per se*.

Not all postal ballots issued will be returned at any given election. Some people may decide not to vote, some may forget to post their ballot in sufficient time for it to be counted, some might just forget to post it at all. So we also look at the proportion of the electorate who actually cast a postal vote in 2015, 2017 and 2019, as opposed to the percentage who were issued with one (Table 4). But the same picture holds here too (not surprisingly, as the percentage of the electorate casting a postal vote is very strongly correlated indeed with the percentage issued with one: Pearson's $r = 0.97$). Although the simple bivariate picture might suggest greater use

Table 4. Rurality and % casting a postal vote, 2015–2019 (OLS regressions).

Model:	Y = % electorate casting a postal vote, 2015–2019					
	I		II		III	
	b	SE	b	SE	b	SE
Constant	15.36	0.10**	14.82	0.21**	14.91	0.23**
Population density 2020	−0.03	0.00**	−0.00	0.01	−0.01	0.01
% Majority, t-1			−0.04	0.01**	−0.04	0.01**
Component 1: SES			0.68	0.08**	0.68	0.08**
Component 2: Trad Britain			0.93	0.17**	0.92	0.17**
Election year (comparison = 2015)						
2017			1.56	0.20**	1.53	0.25**
2019			0.76	0.20**	0.59	0.24*
Election 2017*Popn density					0.00	0.01
Election 2019*Popn density					0.01	0.01
R^2	0.07		0.16		0.16	
N	1896		1896		1896	

*$p < 0.05$; ** $p < 0.01$.

of postal ballots in more rural seats, once we control for local socio-economic and political conditions, that effect vanishes (compare Model I in Table 4 with Models II and III). H4 is unsupported.

Conclusions

In this article, we have examined how rurality affects turnout and thus participation. While existing research has focused on the costs of voting, social and demographic influences, the effects of party campaigning and mobilization, and the effects of different electoral systems, little research has focused on the relationship between turnout and urban-rural differences. What has been done has produce contradictory results: while some studies associate lower turnout with rurality, others report the opposite. However, this study has found that there is no evidence for a "democratic deficit" in Britain's rural areas, with turnout at general elections in fact typically higher in rural compared to urban constituencies. This is largely because "traditional Britain" voters (who are among the most likely to vote) are over-represented in rural populations. People's decisions on whether to participate appear to be affected much more by their socio-economic situation and by political conditions than by the relative inconveniences of living in more remote areas.

While rural voters are no less likely to vote than their urban counterparts, one explanation could be that rural constituencies are making greater use of postal votes, which reduces the costs of voting. Yet when it comes to analysing the uptake of postal voting, we find that the postal ballot is not used differently in rural compared with urban constituencies. Thus, not only is there no "democratic deficit" in rural areas, voters in rural areas are not more likely to have a postal vote. Whatever the "costs of voting" discouraging participation might be, rural living is not among them.

Our findings apply for the British case. But given the international literature on rurality and ease of access to voting sites and facilities, and on rurality and turnout, discussed in the literature review, similar patterns may apply elsewhere in. This might provide an avenue for future comparative research: we invite others to follow the lead.

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No potential conflict of interest was reported by the author(s).

ORCID

Charles Pattie http://orcid.org/0000-0003-4578-178X

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