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Understanding the disability voting gap in the UK☆

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ABSTRACT

Using nationally representative longitudinal data from Understanding Society we explore the relationship between disability and political participation in the UK. More specifically, we examine the determinants of the 'disability voting gap', and assess how it varies by the severity, type and chronicity of disability. After accounting for demographic characteristics, the disability voting gap across UK General Elections between 2010 and 2019 is found to be 6.2 percentage points. More than half of this gap is explained by the channels of resources and recruitment, with evidence of a residual disability gap consistent with additional disability-specific barriers to participation. We find a larger disability voting gap for those with more severe disability, disabilities relating to mental health and chronic disabilities. Applying panel data methods, however, we find no evidence that transitions in disability status are related to changes in voter turnout.

1. Introduction

Disabled people have consistently been found to have lower levels of political participation, illustrated by a sizeable 'disability voting gap' (DVG), estimated to be between 4 and 17 percentage points in the US (Schur and Adya, 2013) and 5 percentage points in Europe (Reher, 2020). Despite this, disability is not routinely included in studies exploring political participation (see, Smets and van Ham, 2013) and it has been referred to as a missing socio-economic variable in European research (Priestley et al., 2016). The existing evidence for Europe is also based on a binary measure of disability and neglects potential heterogeneity, for example, by the type and severity of disability (Reher, 2020). Importantly, the international literature on the DVG has also almost exclusively used cross-sectional data and has therefore been unable to explore the relationship between disability and voting after accounting for unobserved individual heterogeneity or, that which is closer to a causal relationship.

In using rich, contemporary, nationally representative longitudinal data from the UK Household Longitudinal Study (known as Understanding Society (USoc)) this paper contributes to the international literature by quantifying and exploring the drivers of the DVG in the UK. In addition to considering the established channels of resources (which determine ability), recruitment (which encompasses external influences on participation) and psychology (which reflect preferences) (see, for example, Schur and Adya, 2013) which are hypothesised to mediate the influence of disability, this analysis considers heterogeneity by the type, severity and chronicity of disability and provides the first exploration of the relationship between within person changes in disability and political participation. The latter represents an important methodological contribution, and we present new evidence of the relationship between disability and voter turnout after controlling for individual time-invariant unobservable heterogeneity.

Our context is the UK, where existing legislation (the Equality Act, 2010) gives disabled people an equal right to vote, including via the

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provision of reasonable adjustments. We focus on voter turnout at the four most recent successive national general elections (GEs), in 2010, 2015, 2017 and 2019 respectively. In 2010, Gordon Brown (Labour) was replaced by a coalition government led by David Cameron (Conservative) and Nick Clegg (Liberal Democrat). In 2015, the coalition was replaced by David Cameron (Conservative), in 2017 Theresa May (Conservative) was re-elected with a minority government and in 2019 Boris Johnson (Conservative) was elected with a landslide majority. Despite policy attention (see, for example, Equality and Human Rights Commission (EHRC), 2015) and concern about the exclusion of disabled people within the political process, disability has been neglected in political science in the UK.[1] Indeed, evidence on the DVG in the UK has largely been derived from European studies where country specific samples are small (see, for example, Reher, 2020; Teglbjærg et al., 2022). The dearth of UK evidence is particularly surprising given the prevalence of disability, where disabled people, defined to have a long-term, activity-limiting health condition, represent nearly one in five of the working-age population, and evidence of substantial disability-related economic and social disadvantage (see, for example, Baumberg et al., 2015).[2] In broadening the UK literature on political participation to include disability and extending the existing UK evidence on disability inequality to include political representation, this paper thereby also contributes important new insights for national policy and electoral practice.

Our findings suggest that, after accounting for demographic characteristics, there is a 6.2 percentage point DVG for activity-limited disabled people across the 2010–2019 UK GEs. Resources are an important driver, accounting for 60 per cent of the DVG. However, even after accounting for demographic characteristics and the channels of resources and recruitment, we find a significant residual or unexplained DVG of 2.3 percentage points. This is consistent with the presence of additional disability specific barriers to voting (for example, accessibility of campaign information or polling stations) which reduce the turnout of disabled relative to observationally comparable non-disabled individuals. This is greater for more severe disability, disability related to mental impairments and chronic disabilities. Further analysis using longitudinal data suggests there is no relationship between disability and voting after accounting for individual unobserved heterogeneity, which raises questions as to the causal relationship between disability and voting, something that clearly requires further scrutiny, including in other international contexts.

The remainder of this paper is organised as follows. The next section provides a brief review of the international evidence on disability and political participation and sets out important gaps in relation to the heterogeneity of disability and longitudinal analysis. Section three introduces the data and measures from USoc. Section four quantifies and investigates the channels through which the DVG operates. Section five considers heterogeneity in the DVG by the characteristics of disability and Section six explores the impact of controlling for time-invariant unobserved heterogeneity on the relationship between disability and voting. We briefly conclude in Section seven.

2. The disability voting gap

Over the past twenty years political participation among disabled people in the US has been subject to growing scrutiny, with concerns for disabled people's representation in policy development (see, Schur et al., 2017). This issue has attracted more recent attention in Europe, where it has been described as a "weak spot in European democracy that has received fairly little attention by political scientists, policy-makers, and the media alike" Reher (2020).[3] We review this evidence to identify possible drivers of the UK DVG, as well as to highlight gaps within the international evidence which motivate the focus of this paper.[4,5]

2.1. Theoretical determinants of the DVG

Building on established theoretical models of voter turnout (for example, Verba et al., 1995), Schur and Kruse (2000), Schur et al. (2002) and Schur and Adya (2013) develop the mechanisms by which disability might influence political participation and highlight the channels of resources, recruitment and psychology.

Resources include the time, capacity, skills and financial assets that facilitate participation. In terms of the latter, lower levels of education, employment and income among disabled people are predicted to reduce participation. Physical and mental capacity, each potentially limited by specific disability types, can also be considered as a form of resource, and might restrict participation, for example, due to the additional effort involved (Powell and Johnson, 2019). Related to this, several empirical studies consider access to transport as a resource (for example, Schur and Kruse, 2000). The influence of time is more ambiguous, with lower employment rates increasing time for participation but physical and/or mental restrictions potentially limiting what is achieved within a given period.

Recruitment principally arises through political campaigning and personal networks. The latter may be reduced as a consequence of social isolation (Schur and Kruse, 2000) or a reduction in social capital (Schur et al., 2002), including that arising from inadequate resources (e.g. non-employment) or living alone. This is typically captured in empirical studies via measures of social networks including attendance at group meetings and religious services (Schur et al., 2003, 2005).

In terms of psychology, key factors include political interest and internal and external efficacy, but also collective or group purpose. While exclusion or injustice may decrease political efficacy through a perceived lack of influence, it may alternatively motivate disabled individuals to engage, for example, through collective purpose aligned to relative deprivation theory (Schur and Kruse, 2000; Schur et al., 2003; Schur and Adya, 2013). Disability gaps in external efficacy might also reflect broader perceptions of inadequate support from government and/or the lack of representation of disabled people in politics (see EHRC, 2015), which generate feelings of a lack of influence (Reher, 2020).

2.2. Empirical evidence on the DVG

Quantitative studies exploring the DVG have generally used two main forms of cross-sectional data. Studies using national surveys and established measures of disability often with relatively limited depth of information on disability specific issues (for example, Schur and Adya, 2013), have been complemented by those utilising detailed, disability-specific information, typically for smaller, and sometimes unrepresentative or disability specific, samples.

Evidence of a large and persistent DVG in the US, typically of more than ten percentage points (Schur and Adya, 2013; Schur et al., 2002), despite protection of disabled people under national and international

[1] UK studies on voter turnout very rarely control for disability (see Clarke et al., 2006; Blackaby et al., 2020 for exceptions).

[2] It is also in stark contrast to UK interest in political participation in relation to gender (Fraile and Sanchez-Vitores, 2020), age (Phelps, 2005), race (Sanders et al., 2014) and religion (Kotler-Berkowitz, 2001).

[3] A series of European studies have considered health rather than disability (for example, Mattila et al., 2013).

[4] Schur and Adya (2013) also explore political views such as support for particular parties, government policies and perspectives on the political process. See also Powell and Johnson (2019).

[5] Studies have also explored specific pertinent issues, e.g. postal voting and polling place accessibility, and find disabled people benefit disproportionately (Norris, 2005 for Britain; Schur et al., 2017 for the US). See also Schur et al. (2005) and Mattila and Papageorgiou (2017) for analysis of disability activism.

legislation, has motivated considerable academic scrutiny. Key to this literature has been the application of multivariate regression models to assess the extent to which the DVG can be explained by socio-demographic characteristics and the channels of resources, recruitment and psychology. Studies generally find a partial narrowing role of personal characteristics (Schur et al., 2017), with an important influence of age (Schur et al., 2002) and, aligned to their role as resources, a mediating role of education (Schur and Adya, 2013) and employment (Schur and Kruse, 2000).

Such an approach has also been adopted by recent European studies, including Reher (2020) who finds evidence of a DVG across European countries that is typically smaller than in the US.[6] After adjusting for demographic characteristics, she estimates the European DVG at five percentage points. After accounting for measures of resources and recruitment (education, income, employment, and social contact), she finds the residual DVG to be just over two percentage points. Albeit subject to constraints on sample size, Reher (2020) finds the DVG in Great Britain is around the middle of the country distribution. However, this contrasts with evidence from Teglbjærg et al. (2022) who suggest there is no significant DVG in the UK. Illustrating the importance of country specific studies, Amilon et al. (2021) find a residual DVG among working-age people at the 2016 local election in Denmark after accounting for demographics and education. In contrast, and albeit based on a small survey of about 2000 respondents, Mattila et al. (2017) find that after accounting for demographic characteristics, measures of resources and recruitment there is no residual DVG at a Finnish 2015 parliamentary election.

Consistent with the role of recruitment, Schur and Kruse (2000) find higher rates of turnout among disabled people with spinal cord injuries who attend religious services in the US. Using a broader measure of disability, Schur et al. (2017) similarly find that community involvement has a particularly positive role on participation among disabled people. However, Reher (2020) finds a modest role of social interactions and religious service attendance on the DVG in Europe.

Studies on the DVG have tended to use measures of political attitudes to measure psychology. For example, Schur et al. (2003) find that while disabled people in the US have lower levels of internal efficacy, including interest in and understanding of politics, this difference is largely explained by other characteristics, particularly education. While resources are also an important determinant of external efficacy, that is, individual perceptions of political influence, disability gaps remain after controlling for this (see also Schur and Adya, 2013). Moreover, they find that disability gaps in efficacy make a substantial contribution to gaps in participation (measured to include, but extend beyond, voting). Albeit constrained to measure disability by economic status, Powell and Johnson (2019) explore the relationship between disability, attitudinal measures and outcomes in the US, enabling them to explore exposure to news, partisanship, and ideology, missing from prior analysis of the DVG. Unlike earlier studies, they find no relationship between disability and political efficacy, but suggest that the 2012 DVG is partially explained by disability gaps in political awareness and knowledge. In the European context, Reher (2020) similarly finds disability gaps in internal and external efficacy, trust and interest in politics. In the same manner as Schur et al. (2003), disparities in internal efficacy and political interest are not evident after accounting for resources and recruitment but, while partly explained, disability gaps in external efficacy and political trust, remain. Nevertheless, Reher (2020) finds political interest and party identification to have a minimal impact on the DVG. Mattila and Papageorgiou (2017) and Teglbjærg et al. (2022) similarly find a residual DVG after accounting for political interest and efficacy.[7]

2.3. Variation in the DVG among disabled people

Reher (2020) identifies investigation by impairment type, on which analysis has been restricted to the US, and analysis of disability using panel data, which has hereto been absent internationally, as important avenues for future work.

In relation to the nature of disability, existing evidence documents substantial differences in the socio-economic impact by disability type. For example, impairments relating to mental health are associated with a particularly pronounced impact on employment in the UK (Jones, 2011). Such differences are therefore likely to affect political participation through the mediating channels of resources and recruitment. Moreover, residual impairment-specific differences in the DVG might be driven by barriers related to disability type (Schur et al., 2017), including the distinction between physical and informational barriers.

Consistent with this, and although sometimes limited by relatively small samples, US studies have examined how the DVG varies by the nature of restrictions (Schur et al., 2003, 2005, 2017; Schur and Adya, 2013). The definition of disability type is often determined by the available data but the functional measures of disability in the US typically makes it possible to separate visual, hearing, mobility, and mental impairments (Schur and Adya, 2013), with studies often able to further identify difficulty with self-care and difficulty going outside alone. Larger DVGs are typically associated with mental/emotional impairments and difficulty in going outside alone (Schur et al., 2002; Schur and Adya, 2013) suggesting both physical and informational barriers to participation. Matsubayashi and Ueda (2014) similarly find the lowest turnout for those with mobility and cognitive impairments.[8] In contrast, insignificant DVGs related to hearing are frequently observed in the US (Schur and Adya, 2013; Schur et al., 2017).

While it is recognised that severity might vary with the nature of impairment (Schur and Adya, 2013), the relationship between the severity of disability and the DVG has received limited scrutiny. This is despite evidence of a relationship between severity, including measures of self-reported restrictions and multiple health problems, and socio-economic disadvantage (for example, Jones 2011). Greater restrictions are therefore likely to magnify the influence of the channels of resources, recruitment and psychology, as well as enhancing residual disability specific barriers to participation. Indeed, in utilising self-reported information on restrictions in daily activities to define moderate and severe disability, Teglbjærg et al. (2022) recognise the importance of severity, but focus only on severe disability given the absence of evidence of a DVG related to moderate disability. Schur et al. (2017) also find disability severity, as measured by requiring support in daily activities, is positively associated with reporting voting difficulties.

Based on recall data, US studies have further considered variation by the duration of disability, typically measured by years since disability onset. While it is hypothesised that the shock and subsequent adjustment associated with recent disability will affect electoral participation most acutely immediately post-onset (Schur et al., 2017) it might equally be the case that the impact persists or, is magnified should it take time for disability to influence the channels of recruitment, resources and psychology. Evidence that socio-economic disadvantage increases in chronicity (Meyer and Mok, 2019) would also be consistent with a larger

[6] Differences in the magnitude of the DVG across countries raise important questions as to country specific barriers to participation but in the absence of comparable data between the US and Europe these are difficult to identify. Moreover, differences in the definition, measurement and institutional context surrounding the collection of information on disability across countries is well-established to limit comparability in relation to social and economic inequality (see, Kapteyn et al., 2007).

[7] Mattila and Papageorgiou (2017) and Reher (2020) find a larger DVG when disability is associated with perceived group discrimination, which Reher (2020) suggests arises due to a lack of perceived influence.

[8] Those with learning disabilities have the same right to vote in the UK but face particular barriers to participation (Redley, 2008).

DVG. Consistent with the arguments relating to shock and subsequent adjustment, Schur and Kruse (2000), Schur et al. (2002, 2005) find that participation is most affected immediately post-onset. In contrast, Schur et al. (2017) find no role for duration in reporting voting difficulties.

2.4. Longitudinal analysis of disability and voting

Fraile and Sanchez-Vitores (2020) argue that, in general, longitudinal data is underexploited in analysis of political participation and, to our knowledge it has not been previously utilised to explore the DVG. This is despite well-established advantages of utilising panel data methods to explore disability disadvantage in other contexts (Meyer and Mok, 2019), particularly the ability to use control for individual level unobserved heterogeneity to explore causal relationships.

Estimates of the DVG based on cross-sectional data potentially reflect the influence of unobservable characteristics correlated with disability and political participation. Studying a cross-section of disabled people at a point in time also inevitably means aggregating people with more permanent or temporary spells of disability. In relation to the latter, evidence has shown that disability is dynamic (for example, Meyer and Mok, 2019), with individuals experiencing disability onset and exit. Consistent with the arguments relating to duration, disability onset might temporarily divert time and attention away from political participation and/or by changing life circumstances, may impact participation over the longer term through the established channels of resources, recruitment and psychology.

Indeed, despite evidence of the habitual and persistent nature of voting, recent studies have confirmed the impact of other life events on participation. Most closely related to disability, Rapeli et al. (2020) use data from the British Household Panel Survey between 1992 and 2005 and find that a decline in self-reported health is associated with a reduction in the probability of voting. Extending this, and including information from USoc, Rapeli et al. (2021) explore the impact of a range of life events including unemployment, retirement, changes in partnership and residential mobility. In doing so, they consider the impact of 'disability' onset (as measured by labour market non-participation), which they find reduces turnout for habitual voters by about 6 percentage points.

The contribution of this paper to the existing literature is threefold. First, in focusing on the DVG in the UK, we address a national gap in evidence on inequality in political science and broaden our understanding of disability inequality in the UK.[9] Second, and unlike previous European studies, we consider heterogeneity by disability type, severity and chronicity, and for a large and representative sample. Finally, to our knowledge, we are the first study internationally to apply panel data methods in this context and utilise within-subject variation, that is transitions in disability, to explore the causal relationship between disability and turnout.

3. Data and measures

3.1. Understanding Society

Our analysis is based on data from USoc (University of Essex, Institute for Social and Economic Research, 2022), a large representative and longitudinal survey of UK private households which contains information on disability and political participation, as well as detailed information on the individual and their household. It has previously been used to explore voter turnout (see, Jessen et al., 2021), as well as disability (see, Davillas and Pudney, 2020). These data are collected annually (over a 'wave' of two years) from about 26,000 households (45,000 individuals) and, at the time of writing, information is available for 12 waves (2009–2022). Adult interviews were predominately carried out face-to-face (from wave 7 (2015–2017), online), with a small portion by telephone. Interviews are supplemented by a self-completion questionnaire, which includes information on voter turnout.

Our analysis focuses on a contemporary dataset (including sample boosts) that pools information from waves 2 (2010–2012), 7 (2015–2017), 8 (2016–2018), 9 (2017–2019), 10 (2018–2020), 11 (2019–2021) and 12 (2020–2022) given the availability of information on voter turnout at four successive GEs in May 2010 (wave 2), May 2015 (wave 7), June 2017 (waves 8, 9 and 10) and December 2019 (waves 11 and 12).[10] We do not rely on these elections as having particular features which drive a differential impact by disability but, prior to utilising the pooled sample, we test for variation in the DVG across time. We exclude proxy interviews (about 2 per cent of respondents) and base our analysis on adults (individuals aged 18 (the minimum voting age) or above), although we also explore the robustness of our findings to restricting the sample to working-age individuals (that is, also below state retirement age (65)) since the latter is more typically the focus within the social and economic literature on disability inequality (see Online Appendix Table A.6).[11] We exclude observations with missing values for any of the core variables used in the analysis and our final unbalanced panel sample includes 83,372 observations from 43,362 individuals.[12]

3.2. Disability

Our measure of disability aligns to the Equality Act activity-limiting definition, which encompasses both physical and mental impairments, and forms a core measure for existing UK evidence relating to disability disadvantage (Baumberg et al., 2015). While the precise definition varies internationally, activity-limiting disability is also used in Europe (see Reher, 2020). The official measure of Equality Act disability is provided in the UK Labour Force Survey (LFS) as a long-term health problem (LTH) which gives rise to substantial difficulties in daily activities. In USoc, a LTH or impairment is defined as a positive response to: *Do you have a long-standing physical or mental impairment, illness or disability? By "long-standing" I mean anything that has troubled you over a period of at least* 12 months *or that is likely to trouble you over a period of at least* 12 months. Those responding positively are then asked about limitations in activities of daily life (ADL): *Do you have any health problems or disabilities that mean you have substantial difficulties with any of the following areas of your life?* Consistent with analysis in other contexts (for example, Davillas and Pudney, 2020), we define activity-limiting disability as a difficulty in at least one of the 12 areas listed, which include mobility, sight and memory (see Online Appendix Table A2 for details). Those with no LTH or impairment, or those with a LTH or impairment but no difficulty in any of the areas listed, are defined as non-disabled. According to this definition, the prevalence of disability is

[9] European evidence has predominantly been based on cross-country data (see, Mattila and Papageorgiou, 2017; Reher, 2020; Teglbjærg et al., 2022) and thereby aggregates trends in individual countries despite differences in disability prevalence and, legal and institutional differences affecting disability equality.

[10] Online Appendix Table A1 provides further details. Our sample is restricted to those surveyed within a year post-election.

[11] Studies use a mix of approaches including all adults (Schur et al., 2003) and/or working-age individuals (Schur et al., 2002). Those who self-report not being eligible to vote are excluded from the analysis.

[12] Appendix Table A3(a) provides further details.

Table 1
Heterogeneity in disability.

	Number	Percent	Percent of disabled
Disability	19,730	23.67	100.00
Severity			
Single ADL	8081	9.69	40.96
Multiple ADL	11,649	13.97	59.04
Type[a]			
Physical ADL (mobility; lifting, carrying or moving objects; manual dexterity; continence; coordination)	14,863	17.83	75.33
Communication ADL (hearing; sight; communication or speech)	4276	5.13	21.67
Mental ADL (memory or ability to concentrate, learn or understand; recognizing when you are in physical danger)	3592	4.31	18.21
Other ADL (personal care; other health problem)	7932	9.51	40.20
Chronicity			
Continuous	12,621	15.14	63.97
Temporary	7109	8.53	36.03

Notes: Data relate to waves 2, 7, 8, 9, 10, 11 and 12. The sample is constrained to that in Table 3, Panel A. [a] Percentages of disabled responses may sum to more than 100 since multiple ADL can be recorded.

23.7 per cent and rates are similar across the four GEs. Rates for the working-age sample (17.9 per cent) are comparable to corresponding activity-limiting estimates from the LFS (see Jones, 2022).

Although subject to potential sources of bias, particularly measurement error and justification bias, given inconclusive empirical evidence, self-reported disability is widely used internationally (see, for example, Schur et al., 2017; Reher, 2020 in this context). Measurement error, whereby individuals with the same impairment and personal circumstances report disability differently, will bias our cross-sectional estimates towards zero. Where measurement error gives rise to spurious transitions for the same individual such bias is likely to be magnified when applying fixed effect models. Justification bias, where individuals with inferior outcomes over-report disability, is likely to be less important in this context than for economic outcomes. However, it remains a potential upward bias on our estimates, including via a resource effect.[13]

We further utilise the information on ADL to explore heterogeneity among disabled people as a potential influence on voting, including through channels relating to resources and recruitment, identified as an important omission from European analysis (Reher, 2020; Teglbjærg et al., 2022). The nature of disability is explored by aggregating the 12 ADLs into 4 non-mutually exclusive groups which form a slightly modified categorisation to Schur and Adya (2013) including physical ADL, communication, mental ADL and other. Given individuals can report multiple ADL we further construct an established measure of severity (see, Jäckle and Pudney, 2015) and test whether this affects the DVG, consistent with evidence on difficulties in voting (Schur et al., 2017). While using multiple ADL assumes severity increases with the number of separate ADL and neglects variation in severity within an ADL, it has previously been shown to be a good proxy for self-reported severity (Berthoud, 2003). We further utilise the panel element of USoc to separate disabilities by chronicity, that is more permanent from temporary disabilities, by distinguishing continuous reporting of disability from any other 'temporary' reporting.[14,15]

Table 1 provides a profile of heterogeneity among disability in our sample. More than half (59%) of disabled responses are 'severe', relating to multiple ADL. Physical ADL are the most common type of disability, being present in 75% of disabled responses, far greater than either communication ADL (22%) or mental ADL (18%). While the majority of disability responses are associated with continuous disability (64%) a significant percentage relate to temporary disability, confirming the presence of transitions in disability status between GEs.

When controlling for individual fixed effects in the longitudinal analysis in Section six we identify the relationship between disability and participation from within-individual *changes* in disability (onset and exit) and electoral participation. Online Appendix Table A3(b) presents transitions in disability between GEs and confirms its relatively dynamic nature, including both disability onset and exit.

3.3. Political participation

Our focus is on electoral participation as being a fundamental influence on the political and policy making process.[16] This is measured in our selected waves using a binary variable indicating whether an individual voted (*turnout*) in the last GE derived from: *Did you vote in this (past) year's general election?* which is asked after the GE.[17,18] While no specific guidance is provided, the measure is assumed to include postal and proxy voting.

Consistent with the literature (see, Schur et al., 2002) and perhaps a consequence of social desirability bias, reported turnout at each GE (see Table 2) exceeds that recorded via administrative records (see Online Appendix Table A1). While studies generally argue that there is no

Table 2
Political participation by disability status.

Voter turnout (%)	All	Disabled	Non-disabled
2010	75.01	75.49	74.86
2015	77.79	76.81	78.09
2017	82.69	81.85**	82.95
2019	82.12	80.58***	82.59
2010–2019	80.15	79.35***	80.40

Notes: Data relate to waves 2, 7, 8, 9, 10, 11 and 12. Figures indicate the percentage of people who voted at the relevant GE. *, **, *** denote a significant difference between disabled and non-disabled observations at the 10%, 5% and 1% significance level respectively. The sample is constrained to that in Table 3, Panel A.

[13] Issues of reverse causality are also less applicable. This is particularly important since disability is measured post-election. The latter gives rise to a further source of measurement error which likely downward biases our results. Our findings are, however, robust to using a forward-looking measure of voting intentions (see Online Appendix Table A.10).

[14] Unfortunately, for those with continuous disabilities we are unable to identify the age of onset. We might expect a differential impact since childhood disability is likely to affect the family environment, as well as experiences within the educational system and first engagement with the electoral system, found to be important in developing voting habits (Dinas, 2012).

[15] This is measured during the GE waves and is therefore conditional on the length of the panel. Given our unbalanced panel, chronicity is measured relative to waves present. This means there is an element of measurement error where individuals are not present/do not report information on disability in each wave. Our results are, however, robust to using the balanced panel subsample (results available upon request).

[16] Waves 9 and 12 contains additional information on a range of dimensions of political attitudes. Building on Schur et al. (2003) and Reher (2020) we utilise these measures in online Appendix B but focus on the pooled 2010–2019 GE sample in the main text.

[17] In waves 11 and 12 the 2019 general election is specified.

[18] In 2010 and 2015 responses are constrained to be within a year. For consistency we impose a one-year limit throughout.

reason to expect this to differ by disability (Schur and Adya, 2013; Schur et al., 2017; Reher, 2020), recent work using linked register-survey data find survey nonresponse and overreporting can influence turnout gaps, including in relation to gender and ethnicity (Dahlgaard et al., 2019), and socio-economic status (Lahtinen et al., 2019). In the absence of linked administrative data, we are unable to explore this further, but note that this might also bias our estimate of the DVG.

Table 2 provides voter turnout at each GE and for the pooled sample by disability, and provides our first estimates of raw DVGs. While statistically significant, the raw DVG measured across GEs between 2010 and 2019 is small in magnitude, at just slightly greater than 1 percentage point. As for disability, the dynamic patterns of voting across GEs are presented in Online Appendix Table A3(d) and confirm that there are transitions in turnout, with slightly more individuals moving to vote from non-voting than vice versa.

3.4. Explanatory variables

USoc contains comprehensive information on other personal and household characteristics established to be important determinants of political engagement in the UK (see, Fraile and Sanchez-Vitores, 2020), and the DVG internationally (see, Reher, 2020). These include variables designed to capture the core mechanisms of resources, recruitment and psychology through which disability might influence voter turnout which are set out in detail below.[19] A full set of explanatory variables and their means by disability status are presented in Online Appendix Table A4 and confirm some well-established patterns. Disabled people are older on average and less well qualified, and experience economic disadvantage, with lower average household income and a disability employment gap of 36 percentage points, consistent with fewer 'resources'. There is also evidence of a disability gap in social contact, with disabled people less likely to be married or have dependent children, consistent with fewer networks in terms of recruitment.

4. The DVG

To quantify the DVG an Ordinary Least Squares (OLS) equation is estimated as follows[20]

$$V_{it} = \delta + \alpha D_{it} + Z_{it}\beta + \theta_t + \varepsilon_{it} \quad (1)$$

where V_{it} represents the binary variable capturing voter turnout for individual i in GE year t, D_{it} indicates disability and Z_{it} is a vector of personal and household characteristics previously found to influence participation. Our initial specification (model (1)) includes only a constant term (δ), set of GE (time) fixed effects θ_t, and disability indicator where the key parameter of interest, α, measures the raw DVG.[21] Throughout standard errors are clustered by individual. We estimate several additional specifications, successively adding controls for demographic characteristics and to capture the channels of resources, recruitment and psychology through which disability might operate.

Our demographic characteristics, namely gender, age (and age-squared), region of residence, ethnicity and UK citizenship (model (2)), which are designed to be predetermined are fairly standard in analysis of this nature (see, Reher, 2020). Their inclusion enables us to remove the influence of confounding personal characteristics to capture an 'adjusted' disability gap, or an estimate of the DVG that exists among observationally comparable disabled and non-disabled people.

In line with the theoretical arguments, our further specifications capture the potential channels through which disability might operate. We first add highest qualification, employment status and equivalised household income as measures of resources (model (3)) (see, for example, Schur et al., 2003; Reher, 2020), but acknowledge these may also be determinants of psychology and recruitment. Following Schur et al. (2003), we also control for having a driving licence and access to a car as a resource. To capture recruitment, as proxied by social networks, we subsequently add controls for household composition, including marital status and the presence of dependent children (model (4)). Unfortunately, proxies for 'social connectedness', including self-reported number of close friends, whether the respondent visits friends socially and membership of non-political organisations including relating to sport and religion are only available in select waves, but our findings are not sensitive to their inclusion (similar variables are used in Schur and Kruse, 2000, Schur et al., 2003; Reher, 2020).[22]

The variables capturing resources and recruitment are likely to be partly determined by disability and therefore reflect mediating channels. While their introduction might introduce post-treatment bias, their inclusion allows us to explore the *change* in the disability coefficient across specifications, reflecting their role in explaining the DVG and, to identify the residual or unexplained influence of disability (α). Aligned to the literature on disability discrimination, the latter captures the DVG that would exist among otherwise comparable individuals, including in terms of resources and recruitment. It is therefore useful in identifying other barriers to participation, including remaining disability-specific barriers potentially relevant to policy and electoral practice (for a similar approach see Teglbjærg et al., 2022).

The coefficients on disability from equation (1) are presented in Table 3.[23] In Panel A, the raw DVG, presented in column (1), is negative and suggests that relative to non-disabled people, disabled people are 1.1 percentage points less likely to vote. The raw gap will, however, be a function of differences in other demographic characteristics correlated with disability, and in column (2) the DVG is estimated net of this. The adjusted DVG is substantially wider at 6.2 percentage points. This is due to the DVG being measured net of the positive influence of age. Since disabled people are, on average, older, the raw DVG underestimates the true gap. Interestingly, the magnitude of the DVG is similar to that estimated for Britain by Reher (2020), despite the small UK sample and earlier time period. As discussed, disability might give rise to a DVG through a range of channels and, in column (3) we account for the mediating influence of resources. As expected, given evidence of significant disability-related economic disadvantage, and positive influence of resources on participation, the DVG is partly explained by resources. Accounting for this leaves a residual and significant influence of disability of 2.6 percentage points. In column (4) we introduce variables to capture the channel of recruitment as proxied by social connections, and these have a small further role in explaining the DVG. While the raw DVG among the working-age population is larger (Online Appendix Table A6), the patterns are similar after adjusting for age.

Our estimate of the residual influence of disability (column (4)), at 2.3 percentage points is consistent with evidence for Europe (Reher, 2020). That the gap is 60 percent smaller after accounting for resources confirms the potential impact of narrowing economic disparities on political participation. Evidence of a residual disability gap is, however, important since it suggests disability specific barriers, e.g., in relation to engagement or access such as via inaccessible material, information or voting mechanisms, that is, otherwise observably comparable disabled and non-disabled individuals have different voting probabilities.

Given information on political attitudes is only available in waves 9

[19] Information on psychology is not available consistently but we explore its influence in 2017.

[20] Coefficient estimates from our linear probability models (LPM) are very similar to the marginal effects from corresponding probit models which account for the binary nature of the dependent variable (results available upon request).

[21] We control for months since the GE in all specifications to capture the potential systematic influence of recall bias.

[22] Unfortunately, USoc does not contain information to directly measure recruitment e.g. political campaigning.

[23] Online Appendix Table A.5 column (1) contains a full set of coefficient estimates for model (4). All coefficient estimates are available upon request.

Table 3
The disability voting gap, 2010–2019 general elections.

Panel A: 2010-2019	(1)	(2)	(3)	(4)	(5)
Disability	−0.011***	−0.062***	−0.026***	−0.023***	–
	(0.004)	(0.004)	(0.004)	(0.004)	–
Demographics	No	Yes	Yes	Yes	–
Resources	No	No	Yes	Yes	–
Recruitment	No	No	No	Yes	–
Psychology	No	No	No	No	–
F-test	102.61	167.56	217.40	199.26	–
Adj-R^2	0.006	0.067	0.111	0.114	–
N	83,372	83,372	83,372	83,372	–
Panel B: 2017-2019[a]	(1)	(2)	(3)	(4)	(5)
Disability	−0.005	−0.040***	−0.015**	−0.013**	−0.009*
	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)
Demographics	No	Yes	Yes	Yes	Yes
Resources	No	No	Yes	Yes	Yes
Recruitment	No	No	No	Yes	Yes
Psychology	No	No	No	No	Yes
F-test	2.73	35.51	51.71	47.57	153.61
Adj-R^2	0.000	0.040	0.079	0.081	0.329
N	23,844	23,844	23,844	23,844	23,844
Panel C: 2010-2019	(1)	(2)	(3)	(4)	(5)
Disability[b]	0.006	−0.054***	−0.016**	−0.013*	–
	(0.008)	(0.007)	(0.007)	(0.007)	–
Disability x 2015	−0.019*	−0.012	−0.010	−0.010	–
	(0.011)	(0.010)	(0.010)	(0.010)	–
Disability x 2017	−0.017*	−0.008	−0.009	−0.009	–
	(0.009)	(0.009)	(0.009)	(0.009)	–
Disability x 2019	−0.026***	−0.012	−0.017*	−0.017*	–
	(0.009)	(0.009)	(0.009)	(0.009)	–
Demographics	No	Yes	Yes	Yes	–
Resources	No	No	Yes	Yes	–
Recruitment	No	No	No	Yes	–
Psychology	No	No	No	No	–
F-test	65.30	149.18	199.42	184.45	–
Adj-R^2	0.006	0.067	0.111	0.114	–
N	83,372	83,372	83,372	83,372	–

Notes: Data relate to waves 2, 7, 8, 9, 10, 11 and 12. Estimates are coefficients from a LPM as equation (1). All specifications contain a constant, control for months since the last GE, relevant GE dummies. Columns (2)–(5) additionally control for demographic characteristics, resources, recruitment and psychology respectively. Demographic characteristics include controls for gender, age, ethnicity, UK citizenship and region. Resources include controls for highest qualification, employment status, household income and access to a car. Recruitment includes marital status and the presence of dependent children. Psychology includes variables capturing interest in politics, internal efficacy, external efficacy, perceived individual benefit, perceived group benefit, perceived social norm, perceived civic duty, perceived cost and party supporter. Standard errors are clustered by individual and reported in parentheses. *p < 0.10, **p < 0.05, ***p < 0.01. The sample is constrained to be the same in models (1)–(5). All F-statistics are significant at the 0.05 level. [a]The sample is restricted to waves 9 and 12, which contain additional psychology variables. [b]Disability in 2010 is the reference category.

and 12 we explore the role of psychology among a smaller sample covering the 2017 and 2019 GEs in Panel B. In a similar manner to Schur et al. (2003, 2017), we do this by enhancing equation (1) with controls for the measures of political attitudes. In this specification, the DVG is measured conditional on the same observed political attitudes. Our comprehensive set of measures complement and extend those used by Schur et al. (2003), Schur and Adya (2013), Powell and Johnson (2019), and Reher (2020) and include controls for interest in politics, perceived influence, internal efficacy, external efficacy, perceived individual and group benefits, perceived social norm, civic duty and cost, and whether the individual is a supporter of a particular political party. Full details are provided in Online Appendix B, where Appendix Table B3 presents a range of alternative specifications. The most comprehensive specification which simultaneously controls for all 10 attitudinal measures is included in Table 3, Panel B, model (5).

Consistent with the full sample, we observe a negative DVG after accounting for demographic characteristics (column (2)), which is partly explained by resources (column (3)). Column (5) explores whether the adjusted DVG is further mediated by disability gaps in political attitudes.[24] The general pattern is of a further mediating influence of psychology as measured by political attitudes. Nevertheless, a residual influence of disability remains (albeit at the 10 per cent level) (column (5)), suggesting additional disability specific barriers to voting, over and above disability gaps in political interest and confidence.[25] Our analysis therefore suggests that the influence of disability in the UK is not fully accounted for by the established theoretical channels.

Prior to considering heterogeneity by the nature of disability we explore whether the DVG varies across GEs, perhaps because of differing political issues or electoral context by interacting the disability status indicator with GE dummy variables (2015, 2017 and 2019). A significant coefficient on the disability GE interaction would indicate that the DVG in the relevant GE differs from that in 2010. These estimates are presented in Table 3, Panel C. While the raw DVG (column (1)) varies across GE's, being narrower in 2010 than 2015, 2017 or 2019 there is no

[24] Disability gaps in political attitudes are documented in Appendix Table B2. All the variables capturing political attitudes are significantly related to voter turnout.

[25] Disability is significant in all specifications in Appendix Table B3, albeit sometimes only at the 10% level.

Table 4
The disability voting gap, 2010–2019 general elections, analysis of heterogeneity.

	Severity				Type				Chronicity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Severity												
Single ADL	0.013***	−0.027***	−0.005	−0.004	–	–	–	–	–	–	–	–
	(0.005)	(0.005)	(0.005)	(0.005)								
Multiple ADL	−0.027***	−0.088***	−0.042***	−0.038***	–	–	–	–	–	–	–	–
	(0.005)	(0.005)	(0.005)	(0.005)								
Type												
Physical	–	–	–	–	0.012***	−0.046***	−0.021***	−0.019***	–	–	–	–
					(0.005)	(0.005)	(0.004)	(0.004)				
Communication	–	–	–	–	0.006	−0.022***	−0.008	−0.008	–	–	–	–
					(0.007)	(0.007)	(0.007)	(0.007)				
Mental	–	–	–	–	−0.084***	−0.063***	−0.040***	−0.038***	–	–	–	–
					(0.009)	(0.009)	(0.008)	(0.008)				
Other	–	–	–	–	−0.022***	−0.025***	−0.008	−0.006	–	–	–	–
					(0.006)	(0.005)	(0.005)	(0.005)				
Chronicity												
Temporary	–	–	–	–	–	–	–	–	0.026***	−0.024***	−0.006	−0.004
									(0.005)	(0.005)	(0.005)	(0.005)
Continuous	–	–	–	–	–	–	–	–	−0.031***	−0.084***	−0.038***	−0.035***
									(0.005)	(0.005)	(0.005)	(0.005)
Demographics	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Resources	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Recruitment	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes
F-test	91.36	165.24	213.18	195.64	78.15	152.74	201.17	193.60	97.57	163.26	212.57	195.36
Adj-R^2	0.007	0.068	0.112	0.114	0.008	0.068	0.112	0.113	0.007	0.068	0.112	0.114
N	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372

Notes: Data relate to waves 2, 7, 8, 9, 10, 11 and 12. Estimates are coefficients from a LPM similar to equation (1). Specifications are as Table 3 columns (1)–(4)) respectively. The relevant omitted (base) group for severity and chronicity is no disability. For each disability type the absence of the disability type specified forms the omitted category. Standard errors are clustered by individual and reported in parentheses. *p < 0.10, **p < 0.05, ***p < 0.01. See Table 1 for definitions of aggregate ADL. All F-statistics are significant at the 0.01 level.

significant difference after adjusting for demographic characteristics (column (2)), suggesting that the adjusted DVG has been fairly constant over time. On this basis we focus on the DVG estimated over GEs between 2010 and 2019.

5. Heterogeneity in the DVG

To explore variation in the DVG among disabled people we replace the binary variable in equation (1) by (i) a measure of severity proxied by single and multiple ADL, (ii) measures of (aggregated) ADL to capture disability type and (iii) measures of chronicity which distinguish between continuous and temporary disability. For severity and chronicity non-disabled observations form the omitted base group. For disability type, in each case the absence of the specific ADL is the comparator.

In a similar manner to Table 3 we build up the model specification in Table 4 across the columns. The results reveal considerable heterogeneity. The DVG varies with severity, aligned to US evidence relating to voting difficulties (Schur et al., 2017). The adjusted DVG (column (2)) is larger for those with multiple ADL (8.8 percentage points) compared to those with a single ADL (2.7 percentage points). Moreover, accounting for the channel of resources (column (3)) fully explains the DVG for those with a single ADL. It is only those with multiple ADL that face residual disability-related barriers to voting.

In terms of the nature of ADL, mental ADL appear to have a greater effect, with the adjusted DVG relating to mental health (6.3 percentage points) larger than the corresponding DVG for physical ADL, communication ADL or other ADL. While there is no residual DVG for communication or other ADL after accounting for resources (column (7)) there is an influence of mental and physical ADL, aligned to ADL specific barriers. In terms of their relative magnitude, resources appear to play a more important role in mediating the DVG for physical ADL relative to mental ADL. Moreover, mental ADL are associated with a larger unexplained DVG, both in absolute terms and relative to the adjusted ADL-specific DVG, consistent with particularly acute additional disability-specific barriers relating to mental ADL.

After accounting for demographics (column (10)), the adjusted DVG is negative for both continuous and temporary disability, but it is considerably larger for the former (8.4 percentage points) than the latter (2.4 percentage points). Indeed, after accounting for resources (column (11)) a residual DVG is only evident for continuous disability where the magnitude remains substantial (3.8 percentage points). Whilst chronicity is related to severity (see Online Appendix Table A.7) in additional specifications where multiple dimensions of heterogeneity are included simultaneously continuous disability remains important (results available upon request). In contrast to the US evidence of a pronounced shock impact at onset (for example, Schur et al., 2005), our analysis suggests a greater DVG for chronic disabilities, consistent with the impact of disability on political participation accumulating over time.

6. Longitudinal analysis

While it is possible to establish the scale of the DVG from cross-sectional analysis, this does not imply a causal relationship between disability and turnout since individuals with particular unobserved traits might be more at risk of both disability and political disengagement. Indeed, several authors have highlighted the benefits of longitudinal data in addressing causality in this context (Reher, 2020; Schur et al., 2017). In this section, we estimate a model of turnout similar to equation (1) but include individual fixed effects. This means we exploit variation in disability *within* rather than between individuals and identify changes in turnout arising from changes in disability status. This represents a causal relationship under the assumption that all relevant individual characteristics are captured by time-invariant influences and the observable time-varying controls.

We present the coefficient estimates for disability in Table 5 and, as above, build up the model, subsequently adding variables capturing demographics, resources and recruitment.[26] Controlling for time invariant heterogeneity removes the relationship between disability and voter turnout identified in Table 3, with coefficient estimates now nearer zero. This is true across the specifications controlling for demographics (column (2)), resources (column (3)) and recruitment (column (4)). Our longitudinal analysis therefore suggests that disability transitions do not form a life shock which affects electoral turnout. The contrast between this and our cross-sectional analysis presented in Table 3 suggests an important role for unobserved individual heterogeneity in driving the relationship between disability and voting, or that (unobserved) characteristics of disabled people are associated with the reduced probability of voting, rather than disability transitions. One interpretation is therefore that the relationship between disability and voting estimated from cross-sectional data reflects a spurious relationship.

However, several features of this analysis are worth highlighting. First, since the estimates are based on transitions in disability status, including both disability onset and exit, they are identified by acquired disability and/or recovery (including transitory disability) rather than continuous disability, which would include chronic disability from birth/childhood. Although the existing literature has not explored this distinction *per se*, our analysis of chronicity suggests the DVG is greater for those with more permanent disability, and we return to this issue below. Second, there is a risk that transitions in disability are disproportionately driven by measurement error, magnifying the downward bias on longitudinal estimates.[27] While we cannot rule this out completely, the focus on GEs between 2010 and 2019 mean our analysis does reflect annual disability transitions which might be expected to be subject to greater measurement error.

In additional specifications we consider disability severity and type to explore whether the findings vary depending on the specific nature of the transition considered. Changes in severity and type can occur due to onset/exit of disability and transitions in severity/type *among* disabled people. Surprisingly, after accounting for demographics (column (10)), there is a positive and significant coefficient (at the 10 per cent level) on physical and communication ADL, consistent with a positive relationship between voting and transitions into these types of ADL. Nevertheless, the main conclusions remain the same, after accounting for individual unobserved heterogeneity there is no relationship between voting and multiple ADL or mental ADL where the DVG was most pronounced.[28]

Our findings contrast to US evidence (for example, Schur and Kruse, 2000) of pronounced declines in turnout immediately post disability onset and we further explore the potential asymmetry in disability onset and exit in Online Appendix Table A.8. After controlling for demographics disability onset and exit have a similar negative relationship with participation consistent with past disability being important even in the absence of current disability.[29] However, consistent with the analysis of chronic disability the relationship between disability onset or exit and voting is much smaller in magnitude than the DVG for two-period disability. Moreover, neither onset nor exit of disability is associated with voting after accounting for individual fixed effects.

[26] Online Appendix Table A5 column (2) provides a full set of coefficient estimates for model (5).

[27] However, consistent with Myers et al. (2020), we find evidence that disability onset is associated with a significant decline in health (as measured by the General Health Questionnaire) relative to those who remain non-disabled.

[28] It is not possible to consider continuous disability since this is absorbed by the individual fixed effect.

[29] In Online Appendix Table A.9 we distinguish between current, future and former disability. Past disability appears to depress voting through resources. After accounting for demographic characteristics, future disability is unrelated to voting, which does not suggest those who subsequently report disability differ from those who remain non-disabled in unobserved ways which affect voting.

Table 5
Longitudinal analysis of the disability voting gap, 2010–2019 general elections.

	Overall				Severity				Type			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Disability	0.002	0.004	0.005	0.005	–	–	–	–	–	–	–	–
	(0.005)	(0.005)	(0.005)	(0.005)								
Severity												
Single ADL	–	–	–	–	0.005	0.006	0.006	0.006	–	–	–	–
					(0.005)	(0.005)	(0.005)	(0.005)				
Multiple ADL	–	–	–	–	−0.002	0.001	0.002	0.002	–	–	–	–
					(0.007)	(0.006)	(0.007)	(0.007)				
Type												
Physical	–	–	–	–	–	–	–	–	0.006	0.009*	0.009*	0.009*
									(0.005)	(0.005)	(0.005)	(0.005)
Communication	–	–	–	–	–	–	–	–	0.012	0.014*	0.014*	0.013
									(0.008)	(0.008)	(0.008)	(0.008)
Mental	–	–	–	–	–	–	–	–	−0.014	−0.015	−0.015	−0.014
									(0.010)	(0.010)	(0.010)	(0.009)
Other	–	–	–	–	–	–	–	–	−0.004	−0.003	−0.002	−0.002
									(0.006)	(0.006)	(0.006)	(0.006)
Demographics[a]	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Resources	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Recruitment	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-test	54.11	17.48	12.52	11.63	45.29	16.60	12.10	11.28	34.60	15.43	11.57	10.85
Adj-R^2	0.008	0.010	0.011	0.012	0.008	0.010	0.011	0.012	0.008	0.011	0.012	0.012
N	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372	83,372

Notes: Data relate to waves 2, 7, 8, 9, 10, 11 and 12. Estimates are coefficients from a LPM as equation (1). All specifications contain a constant, GE dummies and control for months since the last GE. Standard errors clustered at the individual level are reported in parentheses. *p < 0.10, **p < 0.05, ***p < 0.01. All F-statistics are significant at the 0.01 level. [a]Time invariant characteristics (gender, ethnicity and national citizenship) are omitted due to the inclusion of individual fixed effects.

Our findings based on the panel data methods therefore question the causal interpretation given to the DVG. Rather than reflecting the onset or exit of disability, the relationship between disability and voting appears to reflect differences in underlying preferences for participation. This itself might reflect a causal relationship should such preferences arise due to disability and persist, for example, among those who experience chronic disability at birth/in childhood (see Langsæther et al., 2022 for similar arguments in the context of the relationship between social class and political preferences). Nevertheless, with our data it is not possible to identify such effects and we cannot rule out that the DVG simply reflects selection into disability based on these different preferences for participation.

7. Conclusions

Using unusually rich, nationally representative longitudinal data from USoc we contribute new evidence to the international literature on heterogeneity in the DVG and on the causal relationship between disability and voting. The latter represents an important methodological contribution. In using UK data, the analysis also addresses an omission in national evidence on equality and political participation, and in doing so, extends the UK literature on disability-related social and economic inequality.

Based on data covering four GEs between 2010 and 2019 we find evidence of a DVG of 6.2 percentage points after accounting for demographic characteristics. While smaller than estimates typically observed in the US, it is of comparable magnitude to previous estimates for Europe, and suggests disability is an overlooked dimensions of political inequality in the UK. After controlling for the channels of resources and recruitment, through which the effect of disability might operate, we find a smaller but significant residual influence of disability. Therefore, wider disability-related economic and social inequalities are important mediators of, but do not entirely explain the, DVG. Nevertheless, policy aimed at reducing disability-related economic inequality is likely to narrow political inequality.

The residual unexplained DVG indicates that, despite protection under the 2010 Equality Act, disability impacts on political participation over and beyond its impact on social and economic outcomes. This is particularly true for people with severe disabilities, ADL associated with mental health and chronic disabilities, where the residual DVG is larger. The importance of mental ADL is suggestive of barriers arising from the complexity of campaign information and voting processes, rather than physical accessibility. Overall, the evidence therefore suggests the need for additional interventions designed specifically to enhance political participation among disabled people and for consideration of disability-related barriers when making electoral changes.

Importantly, we present the first evidence internationally that controlling for unobserved individual heterogeneity eliminates the relationship between disability and voter turnout. In this respect it suggests the DVG might reflect disabled people possessing fixed unobservable characteristics which lower participation rather than an influence of disability *per se*. However, that transitions in disability status, at least over the period considered here, do not form a life shock which impacts on political participation also aligns to evidence of a more pronounced DVG for chronic disabilities. While this requires further interrogation, including in other international contexts, it raises new questions as to whether and how chronic disability causally influences political participation, including whether this is different for those who are disabled at birth or in childhood relative to chronic conditions acquired subsequently in the life course.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.electstud.2023.102674.

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