



University of
Sheffield

Unpacking the Disability Employment Gap

Final Report

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Further Information:

This research has produced a number of outputs, including academic Working Papers as well as Policy Briefs; these are listed in **Appendix C**. A project website that contains all of these outputs as well as additional information is available at:

www.sheffield.ac.uk/economics/research/impact-and-knowledge-exchange/unpacking-disability-employment-gap

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Contents

Executive Summary	1
1 Introduction	9
2 Methods	12
2.1 Advisory Group.....	12
2.2 Literature Review	12
2.3 Data.....	13
2.4 Decomposition.....	15
3 Profiling the Disability Employment Gap	17
4 The role of education in the DEG.....	23
4.1 Data sample descriptives	25
4.2 Overall DEG decomposition	26
4.3 DEGs by demographic groups and health conditions	29
4.4 DEGs by labour market preferences and attachment	31
4.5 Concluding remarks	33
5 The geography of the DEG.....	34
5.1 Background and motivation	36
5.2 People effects and place effects.....	36
5.3 Explaining the place effects.....	39
5.4 Further analysis	41
5.5 Concluding remarks	42
6 Unpacking trends in the DEG.....	44
6.1 Trends in disability.....	45
6.2 Trends in employment rates	47
6.3 Unpacking the trends in the employment rates	48
6.4 Unpacking the trends in the DEG	52
6.5 Unpacking the overall employment trend	53
6.6 Conclusion	54
7 Implications for policy.....	56
8 Conclusion.....	59
References	61
Appendix A - Membership of Advisory Group	65
Appendix B – Variables and Data sources.....	66
Appendix C - List of Project Outputs (to date)	69
Appendix D - Literature search methods	70
Appendix E - Taxonomy of factors affecting the DEG	73
Appendix F – Classification of health conditions in APS	74



Executive Summary

1. *Introduction*

- The employment of disabled people in the UK is substantially lower than for non-disabled people, especially for those whose disability is primarily a mental health problem. While it is unreasonable to expect disabled people to be employed at the same rate as non-disabled people, at the same time many out-of-work disabled people say they would prefer to work. Persistent worklessness is an underlying cause of inequality and reduced opportunities, and good work can also help people flourish in a non-material sense, through improved health and wellbeing. All of this suggests that the disability employment gap (DEG) is too large.
- Reducing the DEG will require a better understanding of its underlying causes, and this is the overall aim of our work. We describe the DEG (**Chapter 3**) and produce a detailed statistical breakdown of the factors underlying it; exploring the role of education (**Chapter 4**), and investigating the factors that explain variation in the DEG across local areas (**Chapter 5**) and over time (**Chapter 6**).

2. *Methods and Data*

- We use the Annual Population Survey (APS) from 2014 to 2022; a nationally representative UK data set that contains information on health and disability, labour market status and many other socio-demographic variables. We also merge the APS with data from a number of other sources to enable us to measure factors that might affect the DEG at an area level (see **Appendix B**).
- While our data cover most of the past decade, the Covid pandemic and its aftermath (2020-2022 in our data) disrupted the labour market in a way that potentially obscures



the underlying relationships we seek to examine. Our profile of the DEG (**Chapter 3**), and analysis of the role of education (**Chapter 4**) and of local variation (**Chapter 5**) therefore use data from 2019 or earlier. Insofar as the relationships between employment and its determining factors tend to be quite stable, our results should still be valid in 2024. Our analysis of trends in the DEG (**Chapter 6**) uses the full span of data to include the impact of the pandemic on disability and employment.

- To unpack the various factors that explain the DEG we utilise statistical decomposition methods, which associate variation in employment status with the corresponding variation in other factors. These factors may be individual or household characteristics (e.g. age, education and family type) or area-level characteristics (e.g. industrial composition, healthcare provision and employer policies towards disabled people).
- We undertook extensive reviews of the academic and ‘grey literature’ to develop a typology of explanatory factors for the DEG; grouping these factors into four broad categories: supply side, demand side, policy, and other (**Appendix E**). We also worked very closely with an Advisory Group of academic experts, policy makers and disability charities (**Appendix A**).

3. Profiling the DEG

- We follow the definition of disability established in the **Equality Act (2010)**. A person is classed as disabled if they report having a health condition or illness lasting 12 months or more which reduces their ability to carry out day-to-day activities. We distinguish between less severe and more severe impairments, and between mental and physical health conditions (based on 13 reported categories).
- 81.3% of non-disabled people of working age in the UK were employed in 2019, compared to 53.1% of disabled people; giving an overall DEG of 28.2 percentage points (pp). The size of the DEG varies considerably depending on the type and severity of



disability, ranging from 9.7pp for people with a ‘less severe’ physical health condition to 61.1pp for people with a ‘more severe’ mental health condition.

- The DEG is wider for males than for females, and wider for older people compared to younger people. The DEG also varies by education, being much wider among people with lower levels of education (**Chapter 4**).
- Across the UK, Northern Ireland has the largest DEG (43.8pp) while England has the smallest (27.0pp); and there is considerable variation at a local level (**Chapter 5**).
- Over time between 2014 and 2019 disabled people saw their employment rate grow at a faster rate than that of non-disabled people, thus reducing the DEG from 31.9pp to 28.1pp. This trend of an improving DEG slowed markedly during the pandemic (**Chapter 6**).

4. The role of education

- Disabled people have lower levels of education than non-disabled people. 39% of non-disabled people are educated to degree level compared to 24% of disabled people. Disabled people are nearly three times as likely not to have any qualifications (17%, compared to 6% of non-disabled people).
- There are stark differences in employment rates for disabled and non-disabled people across education levels. There is a steep education-employment gradient (lower employment rates at lower qualification levels) for disabled people, which is not evident for non-disabled people.
- In 2019 the DEG for people aged between 25 and 64 was 33pp. Our decomposition analysis reveals that differences in educational attainment explain 12% of this gap, other observed characteristics explain 33% and the remaining 55% is attributed to structural barriers.



- Structural barriers represent a broad set of factors: for example features of the workplace/job, access to transport, lack of reasonable adjustments, discrimination and negative attitudes. There could also be lower incentives to work (because of higher transport or equipment costs, or out-of-work disability benefits) and differing preferences to work. Our work suggests that eliminating structural barriers to employment would have a much greater impact on the DEG than improving the education levels of disabled people.
- The contribution of education to the DEG is largely driven by differences in the proportions of disabled and non-disabled people who have a degree and who have no qualifications. Further, the employment returns to having a degree are larger for disabled people and the penalty of having no qualifications is also larger for them; this is evidence for the importance of structural barriers.
- However, education is still important and if disabled people could achieve qualification levels equal to those of non-disabled people, this could reduce the DEG by up to 12%, an effect that would be greater for females than males, and greater for younger people than older people. Further, achieving education parity would disproportionately help those with more severe impairments.

5. *The geography of the DEG*

- One striking feature of the DEG is the extent of variation across the country. Over the period 2014-2019, the DEG ranged from 16.9pp in Buckinghamshire to 42.5pp in North Lanarkshire. These differences reflect wider spatial inequalities; while some cities and regions are thriving economically, other areas are becoming increasingly ‘left behind’. Disabled people are particularly disadvantaged when living in a left behind area and hence have the most to gain from policies to distribute economic prosperity more evenly across the country.



- We unpack these geographic differences by splitting the country into 166 International Territorial Level 3 (ITL3) areas. We decompose the variation in the DEG into (a) that explained by differences in the characteristics of the disabled and non-disabled populations across areas - the ‘people effect’; and (b) the remaining variation not explained by demographic differences - the ‘place effect’. We further unpack the place effect by exploring the extent to which it can be explained by specific area-level characteristics that we classify as relating to labour demand, labour supply and policy.
- Our results reveal that the key drivers of spatial variation in the DEG are local population characteristics and economic structure, particularly the industry composition of the area. In contrast, spatial variation in healthcare capacity, social capital, employer policies towards disability and the stringency of statutory welfare provision do not appear to have an effect on the gap.
- Everything else being equal, areas with a high proportion of the employed population working in ‘knowledge services’ have a better place effect on average, as do areas with a high proportion of the employed population working in elementary occupations (such as cleaning, security and hospitality occupations). This implies that areas with highly developed labour markets demanding a complementary mix of skills at different levels are particularly conducive to having a low DEG.
- Our results suggest that locally adapted policies to narrow the gap may be more effective than a one-size-fits-all approach. The types of jobs available in an area, indicated by industry and occupational composition, have a disproportionate effect on the employment of disabled people.

6. Unpacking trends in the DEG

- The last decade has been characterised by worsening health of the working age population of the UK, and an increase in the prevalence of disability, which has risen



from 17.5% in 2014 to 22.7% in 2022. Against this, employment rates have continued to rise, but increasing levels of economic inactivity in the years since the pandemic are now a cause for concern.

- The increase in disability has been mainly driven by an increase in the percentage of people with a less severe impairment. Most of these changes are due to mental health disability; especially the increase in less severe impairment among younger females, which rose from 1.9% in 2014 to 5.9% in 2022. The prevalence of disability due to physical health conditions has remained largely unchanged, although it is still the case that many more people are disabled due to physical health conditions than mental health conditions. There has also been a rise in the number of disabled people reporting both physical and mental health conditions indicating that comorbidity is becoming a growing problem in the working age population.
- The employment rate of disabled people rose from 46.0% in 2014 to 55.0% in 2022 (an increase of 9.0pp). However, the suggestion that this increase is an artefact of more people identifying as disabled due to mild mental health conditions is not borne out by the data. Our analysis reveals two opposing effects: declining severity, which raises employment, and increased prevalence of mental health conditions, which lowers employment compared with physical health conditions. The two effects cancel each other out resulting in no overall health effect on the employment rate of disabled people.
- Rather than changes in health explaining the trends in disabled people's employment, our results suggest that education is a key factor behind increasing employment. Rising education levels have helped to improve the employment rates of both disabled and non-disabled people, but disabled people have benefited disproportionately. We estimate that improved education can account for 37% of the fall in the DEG (of 5.2pp).
- While changes to health have not affected the separate employment rates of disabled and non-disabled people, they have played an important role in limiting overall



employment growth in the UK, particularly since the start of the pandemic. A deterioration in health is not just a concern because it suppresses employment, but because poorer health is bad in itself.

7. *Implications for policy*

Based on our analysis, we can identify a number of priorities for policy:

- There should be long-term goal to eliminate the educational disparities between disabled and non-disabled people; this could close the DEG by 12%.
- The immediate focus should be on making sure all adults have some qualifications. The DEG is largest for people with no qualifications and eliminating this educational deficit could close the DEG by 6%.
- Structural barriers, evident via the DEGs that exist among people with the same education levels, remain a significant challenge. Policies aimed at disabled people expressing a clear preference to work or with employment experience in the last five years might offer the most immediate successes.
- On the supply side, there should be an intensified focus on addressing mental health conditions. The mental health DEG is more than a third larger than the physical health DEG, and its contribution to the overall DEG is getting bigger.
- At the local level, policies to reduce spatial inequalities are also potential tools to narrow the DEG. Attracting high value investment in the knowledge sector to left behind areas in Scotland, Wales and the north of England could help to boost the employment prospects of disabled people to a greater extent than their non-disabled counterparts.
- Policies to promote investment need to be accompanied by bespoke interventions that target the specific local barriers to disabled people's employment. Recent



proposals to empower local leaders to develop work, health and skills plans offer a way forward here.



1 Introduction

The employment rate of disabled people in the UK is substantially lower than for non-disabled people; it is even lower for those whose disability is primarily a mental health problem. It is unreasonable to expect disabled people to be employed at the same rate as non-disabled people, but many say they want to work, suggesting this gap is too large. Work is key to poverty reduction, and persistent worklessness among certain groups in society is an underlying cause of inequality and reduced opportunities. Good work can also help people flourish in a non-material sense, through improved health and wellbeing. Reducing the disability employment gap (DEG) will require better understanding of its underlying causes; our aim is to contribute to this understanding.

We use statistical decomposition methods and counterfactual analyses (alternative scenarios) to produce a detailed statistical breakdown of the factors behind the DEG. We explore the key role of education, as well as variation in the DEG across local areas and time. We consider personal characteristics like age, gender and education, and we also explore different definitions of disability and distinguish between different mental and physical health conditions, as well as severity of impairment, and different preferences for work. Our spatial analysis helps us to understand the role of demand side factors (like the type of jobs available in local economies) in a way that has largely been neglected in previous work – we refer to this as the distinction between ‘people’ and ‘place’ effects. Our analysis of trends and focus on the changing composition of disability also goes some way to dispelling the myth that the upward trend in disabled people’s employment is an artefact of more people identifying as disabled due to mild mental health conditions. Together, our different analyses help illuminate policy tools than might contribute to narrowing the DEG.



It is important to stress that the DEG also reflects deeper issues about the functioning of the economy and the complex needs of disadvantaged groups, including: equal opportunities, structural barriers to employment, workplace adjustments, access to transport, the benefit system and spatial inequalities. Disability is also not a static condition, but one that can emerge at different points in the lifecycle and can be exacerbated by adverse socioeconomic circumstances and shocks. The recent rise of inactivity among young people due to mental health problems could have adverse consequences for their future careers and lead to a widening of the DEG in the longer term.

Despite its prominence in policy discussions, the relationship between disability and work seems to have been neglected by social scientists relative to health professionals ([Jones and Wass, 2013](#)). The consequence has been an overemphasis on the ‘medical model’ of disability, stressing a lack of functionality as the reason for employment disadvantage, to the detriment of the ‘social model’ focusing on institutional and organisational barriers. In our work we follow the biopsychosocial model of disability ([Chandola and Rouxel, 2021](#); [World Health Organisation, 2001](#)), which recognises that disability is not simply a health impairment, but also a construct of how institutions affect individuals. As such, factors that may limit the employment of disabled people include ability to work, preference for work, discrimination, and failure of employers to provide reasonable work adjustments.

This report is structured as follows:

- **Chapter 2** outlines the data and methods we have used in this research. It describes our main data source (the Annual Population Survey), and the statistical decomposition techniques we have used in each substantive analysis.
- **Chapter 3** describes some basic facts about the DEG. It considers differences by age, gender, ethnicity and geography, as well as by severity of impairment and type of health condition.



- **Chapter 4** explores the role of education in explaining the DEG. It considers a counterfactual (alternative) scenario of the DEG that would prevail if education levels were equalised. It also examines the structural component of the DEG, whereby disabled people find it more difficult to gain employment even if they have the same levels of education as non-disabled people.
- **Chapter 5** considers geographical variation in the DEG. It explores why the DEG in a local area differs from the national average DEG. Variation in the local DEG is explained in terms of ‘people effects’ (due to the characteristics of the local population) and ‘place effects’ (due to area characteristics).
- **Chapter 6** consider trends in the national DEG from 2014-22. In addition to individual and household level characteristics, it also considers the changing makeup of health conditions reported by disabled (and also non-disabled) people.
- **Chapter 7** identifies a number of priorities for policy that emerge from our work.
- **Chapter 8** contains concluding remarks.



2 Methods

This is primarily a quantitative project exploiting large scale national data sets to establish statistical relationships between variables, focusing primarily on employment and disability; we describe the quantitative methods and our data in more detail below. To provide the necessary context for our work, and to understand our results and their practical significance, we also worked very closely with an Advisory Group and carried out extensive literature reviewing.

2.1 Advisory Group

While we were developing this project proposal we invited a number of stakeholders and experts from across the academic, government and third sectors to join our Advisory Group. The full membership of this group is provided in **Appendix A**. We worked closely with the Advisory Group throughout this project, from inception to the ‘end of project’ event, and beyond; we met with them regularly both face-to-face and online. They advised on our initial research questions and methods and provided written feedback on all of our outputs, including the Working Papers, targeted at the academic audience, and the Policy Briefs, written primarily to engage policy makers and other key decision makers. The group acted as a ‘reality check’ on both our results and communications and helped these to evolve throughout the project; they were also invaluable in helping us to disseminate our findings through their wider networks.

2.2 Literature Review

As a first step in our attempt to produce a detailed breakdown of the DEG into its key explanatory factors, we conducted an extensive literature review to understand the existing research and to explore the factors known to affect the employment rates of disabled people.



The main aim was to develop a typology of explanatory factors for the DEG, related to their policy context; a secondary aim was to help identify the data sources we could use to measure the range of explanatory factors in our quantitative analyses. We also classified papers we deemed to be important for the project in other ways. For example, papers that addressed disability measurement issues. We included both quantitative and qualitative evidence from all countries, as well as theoretical and methodological papers. We grouped factors into four broad categories: supply side, demand side, policy, and other.

We searched two main academic citation databases, Econlit and Scopus, and supplemented these searches with Overton, the world's largest searchable policy document and 'grey literature' database. Our final literature catalogue included 755 publications and 42 factors relevant for explaining the DEG. There are: 14 supply side factors e.g. age, education, preferences; 15 demand side factors, e.g. employer attitudes, nature of jobs available, discrimination; 6 factors related to policy, e.g. active labour market policies, national disability discrimination policy; and 7 'other' factors e.g. housing, transport accessibility. More detail on the literature review methods are given in **Appendix D** and the full classification of factors is listed in **Appendix E**. Throughout the project we have continually updated these literature searches adding new papers as they have become available.

2.3 Data

Our main data source for this project is the Annual Population Survey (APS), a large-scale, nationally representative survey of UK residents ([Office for National Statistics, 2023](#)). It is derived from the Labour Force Survey (LFS) but includes extra respondents, specifically to provide better local area estimates. The LFS is the key source of labour market information for the Office for National Statistics (ONS), and is used by the Department for Work and Pensions (DWP) to monitor the DEG. We accessed a secure version of the APS through the UK Data Service Secure Lab.



Our work uses APS data from 2014 to 2022, and while this covers most of the past decade, the Covid pandemic and its aftermath (2020-2022) disrupted the labour market in a way that potentially obscures the underlying relationships we seek to examine (in addition, data quality declined from the start of the pandemic, as explained in Chapter 6). Our profile of the DEG (**Chapter 3**), and analysis of the role of education (**Chapter 4**) and of local variation (**Chapter 5**) therefore use data from 2019 or earlier. Sensitivity checks suggest that the relationships between employment and its determining factors tend to be quite stable over time, so we are confident that our results are still valid in 2024. Our analysis of trends in the DEG (**Chapter 6**) uses the full span of data to include the impact of the pandemic on disability and employment (with the above caveat about data quality).

From 2014 onwards, the APS contains information on the individual's disability status, following the definition established in the [Equality Act \(2010\)](#). A person is classed as disabled if they report having a health condition or illness lasting 12 months or more which reduces their ability to carry out day-to-day activities. According to this definition, approximately one in five people of working age are disabled. We also subdivide the disabled population into those with a less severe impairment (whose ability to carry out day-to-day activities is affected 'a little') and those with a more severe impairment (whose ability to carry out day-to-day activities is affected 'a lot'). By observing the specific health conditions reported by a disabled person, we can identify whether that person has a mental health condition, a physical health condition or, in many cases, both. The process for classifying people according to reported health conditions is explained in **Appendix F**.

Our analysis in Chapter 5 involves matching several other data sources with the APS. We divide Great Britain into 166 International Territorial Level 3 (ITL3) areas and derive profiles for each of these areas based on a range of indicators. The sources for these area-level data are listed in **Appendix B**, alongside detailed information about how both the individual-level and area-level variables used in our analyses are defined.



2.4 Decomposition

In order to unpack the various factors that explain the DEG and compare their relative importance, our research applies and adapts established statistical decomposition methods (Fortin et al., 2011; Little, 2009). In this section we summarise the principles behind the analysis of each chapter; full technical details are given in the papers cited below. The methods use statistical regression techniques to associate the variation in people’s employment status with the corresponding variation in other factors that we measure in the data. These may be individual or household characteristics (such as age, education and family type) or area-level characteristics (such as industrial composition, healthcare provision and employer based policies towards disabled people). Using regressions, the influence of a given factor can be quantified and isolated from other factors. We can then disentangle the DEG into those components explained by each factor and a remaining component that is unexplained by any of the factors we measure. Using the explained factors, we can construct ‘counterfactual scenarios’ to establish what would happen (or would have happened) if some of the factors had been different.

The decompositions are adapted to the specific issues investigated in each chapter. In **Chapter 4**, we focus on how much of the DEG can be explained by differences in the education of disabled and non-disabled people (Bryan et al., 2023). We construct a counterfactual scenario of the DEG that would prevail if education levels were equalised, whilst keep other characteristics the same. We also examine the unexplained component of the DEG, which we call the structural component. This refers to the structural barriers whereby disabled people find it more difficult to gain and retain employment even if they have the same levels of skill and employability (that is the same measured characteristics) as non-disabled people. They can include features of the workplace or job, access to transport, but also discrimination and negative attitudes. Structural barriers may also include incentives and preferences to work.



While we cannot generally unpack the structural barriers (because we do not measure them), we can investigate how they vary across different levels of education.

In **Chapter 5**, we adapt standard decomposition methods to explain why the DEG in a local area differs from the national average DEG ([Bryan et al., 2024](#)). This involves making a distinction between the individual- and household-level characteristics that affect the employment of each person (similar to the analysis in Chapter 4), and the area-level characteristics that affect the general level of employment in the area. The local DEG will be determined by the average characteristics of disabled and non-disabled people in an area, the characteristics of that area, and differences between disabled and non-disabled people in the impact of the characteristics. Taking all these factors into account, we explain the variation of local DEG in terms of people effects (due to the characteristics of the local population) and place effects (due to area characteristics). Among the place effects, we also make a distinction between demand factors (such as the types of available jobs), supply factors (such as health care provision) and policy factors (such as benefit policy or employer policies towards disabled people). The place effects also include an unexplained component, corresponding to unmeasured local factors contributing to employment rates and hence the DEG.

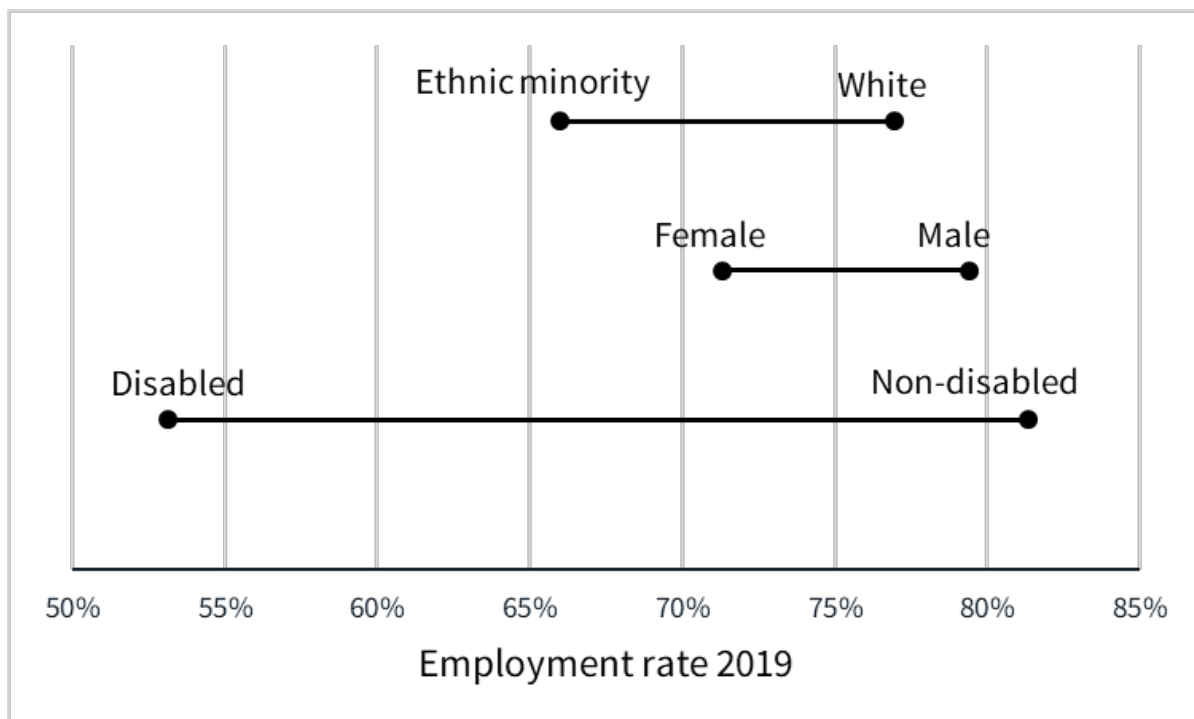
The focus in **Chapter 6** moves to consider trends in the national DEG from 2014-22 ([Bryan et al., forthcoming](#)). In addition to the individual- and household-level characteristics included above, we also account for the changing makeup of health conditions reported by disabled (and also non-disabled) people. We begin by estimating the effects of these characteristics on the employment of disabled and non-disabled people in each year. We then use the resulting estimates to project the counterfactual trends in employment (and therefore the DEG) that would have occurred if characteristics (or subgroups of characteristics) had not changed from their 2014 levels. By comparing the counterfactual with the actual trends, we evaluate the contribution of different characteristics to the actual trends.



3 Profiling the Disability Employment Gap

Over four fifths (81.3%) of non-disabled people of working age were employed in 2019. This compares to just over half (53.1%) of disabled people. Thus, the overall DEG in the UK that year was 28.2 pp. As shown in [Figure 3.1](#), the DEG is much wider than equivalent employment gaps relating to other protected characteristics, namely the ethnicity employment gap and the gender employment gap.

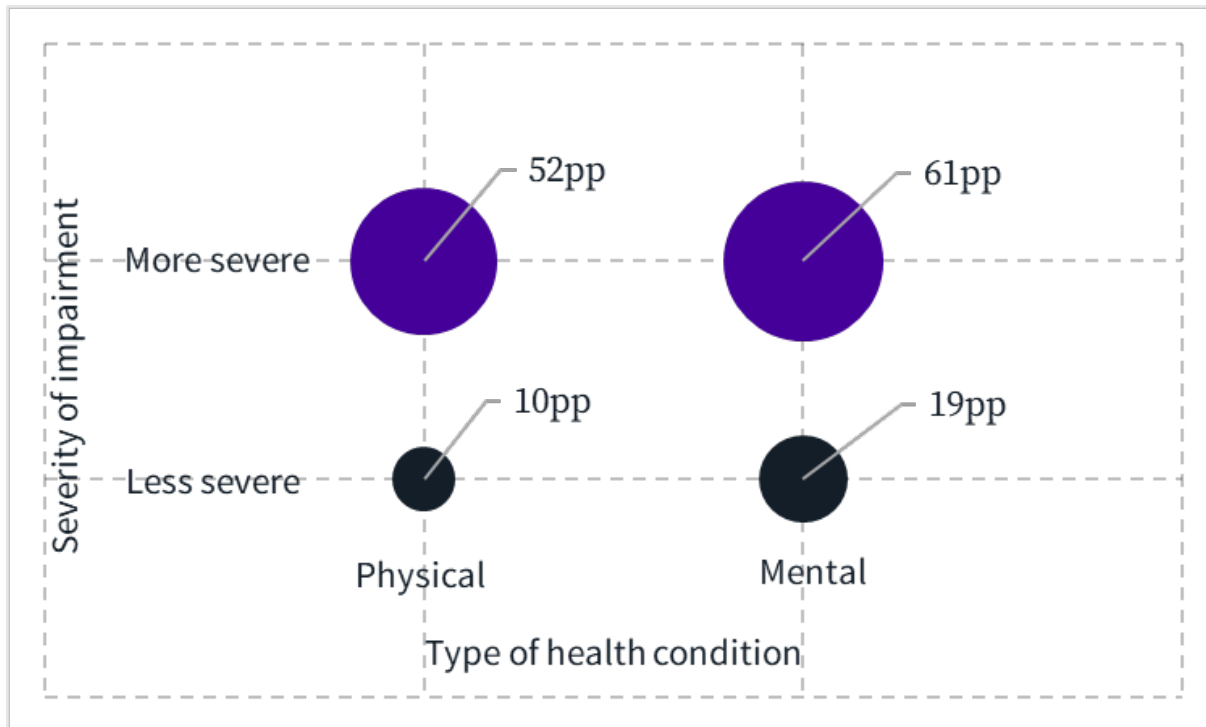
Figure 3.1 - DEG and other employment gaps



The size of the DEG varies considerably depending on the type and severity of disability, ranging from 9.7pp for disabled people with a physical health condition and a less severe impairment to 61.1pp for disabled people with mental health condition and a more severe impairment. See [Figure 3.2](#).



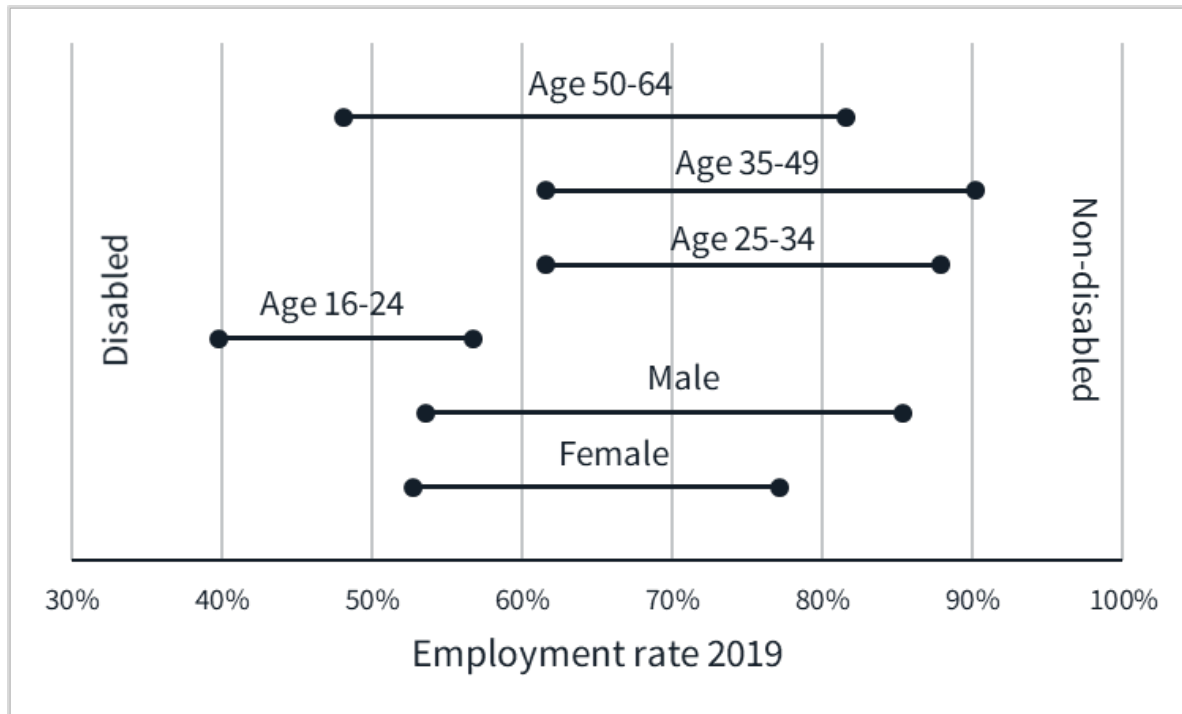
Figure 3.2 - DEG by severity of impairment and type of health condition, 2019



There is also a lot of variation in the DEG by age and sex. As shown in [Figure 3.3](#), the DEG is wider for males (32.8pp) than for females (25.3pp). This is due to the non-disabled males having much higher employment rates than non-disabled females, while the employment rates for disabled males and females are broadly similar. The DEG is also wider for older people (33.3pp for the 50-64 age group compared to 17.0pp for the 16-24 age group).



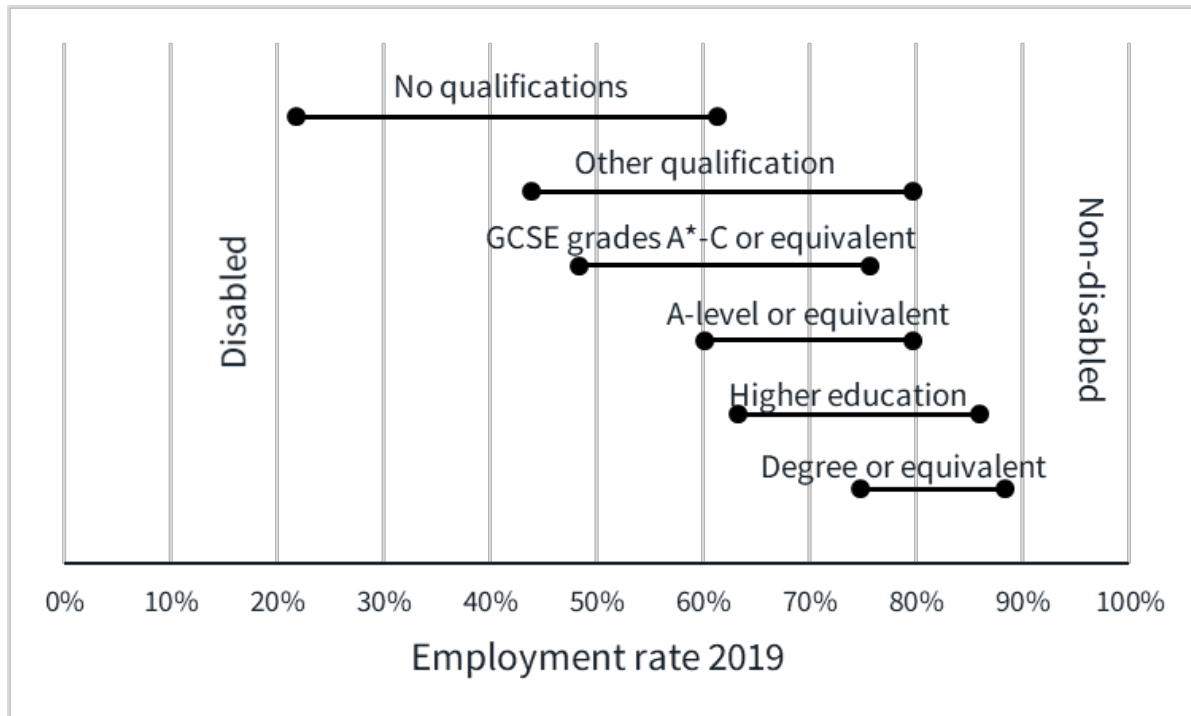
Figure 3.3 - DEG by age and sex



The DEG is much wider among people with lower levels of education, ranging from 39.6pp for those with no qualifications to just 13.6pp for those with a degree level qualification (see [Figure 3.4](#)). In **Chapter 4**, we assess the extent to which improving the educational outcomes of disabled people would help to reduce the overall DEG.



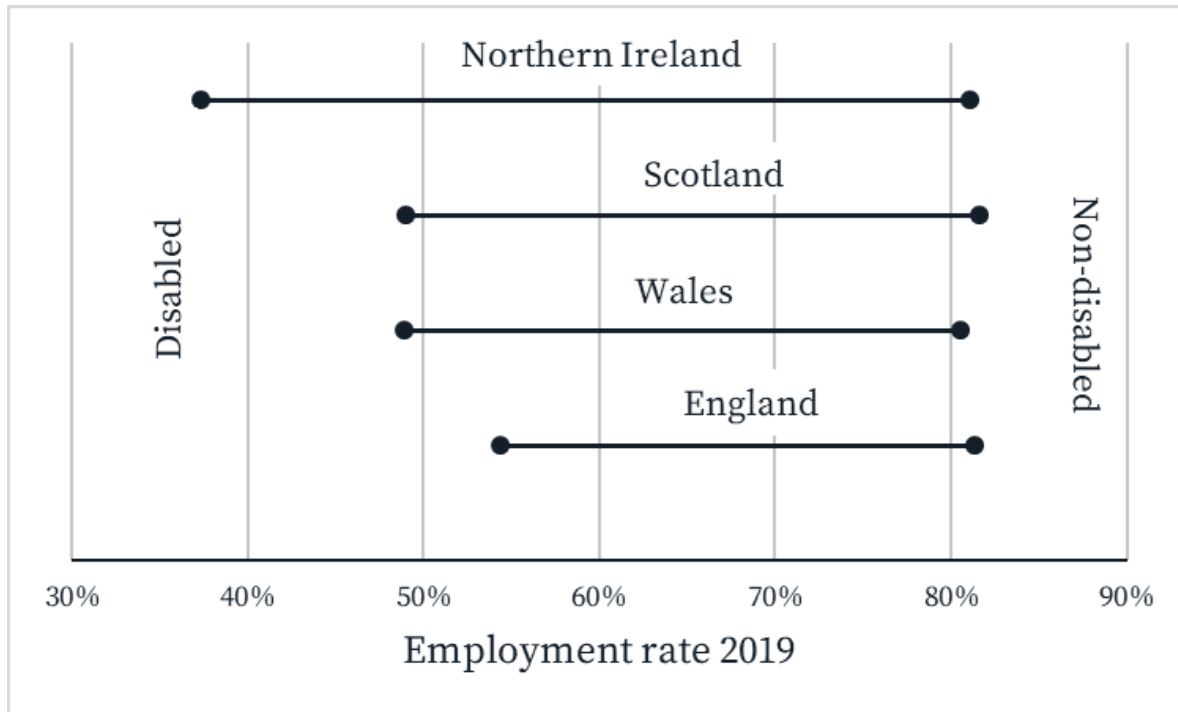
Figure 3.4 - DEG by highest qualification



There is substantial variation in the DEG across the UK. [Figure 3.5](#) shows that, among the four countries of the UK, Northern Ireland has the largest DEG (43.8pp) while England has the smallest DEG (27.0pp). In **Chapter 5**, we explore variation in the DEG at a more local level and consider the factors that may be affecting these spatial inequalities.



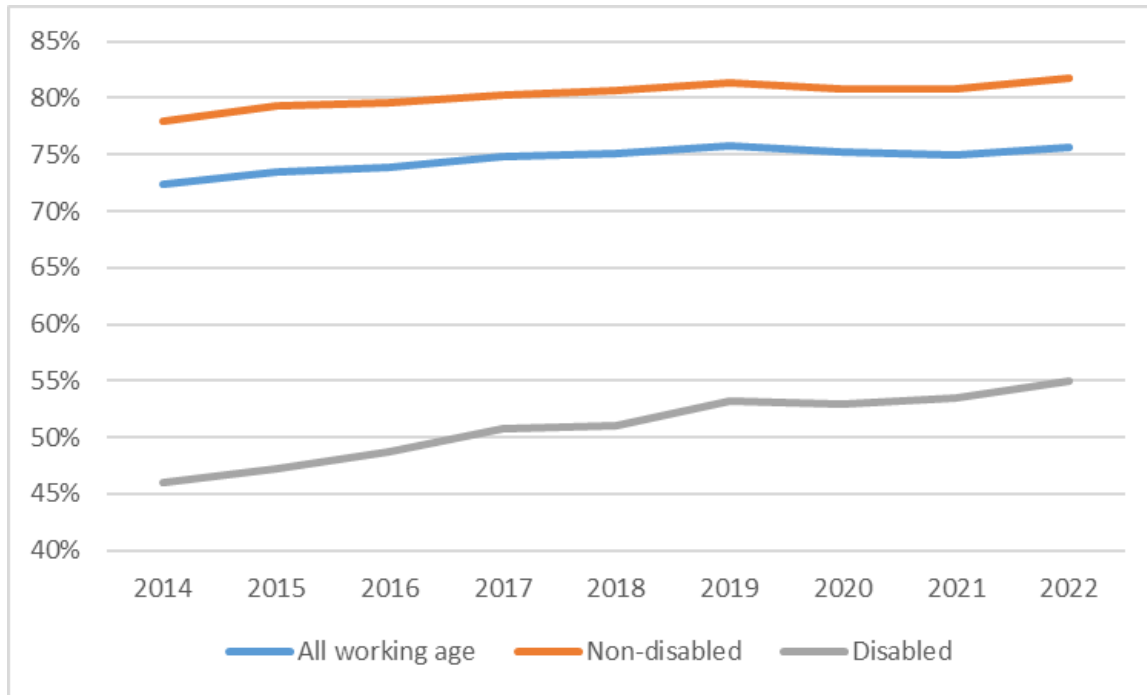
Figure 3.5 - DEG by country



As shown in [Figure 3.6](#), the employment rate in the UK has been growing steadily, from 72.3% in 2014 to 75.7% in 2019 albeit plateauing somewhat since then. The employment rate of disabled people is much lower than the employment rate of non-disabled people (with the difference equal to the DEG). However, between 2014 and 2019 disabled people saw their employment rate grow at a faster rate than that of non-disabled people, thus reducing the DEG over time from 31.9pp in 2014 to 28.1pp in 2019. This trend of an improving DEG slowed markedly during the pandemic, but reduced to 26.7pp by 2022. We unpack these trends over time further in [Chapter 6](#).



Figure 3.6 - Employment rates by disability





4 The role of education in the DEG

We explore the extent to which differences in education explain the DEG. We break down how much of the DEG in 2019 is due to education, how much is due to other observed characteristics, and how much is due to factors that limit the employment of disabled people; we term this latter component “structural barriers” (see **Chapter 2.4**).¹

Disabled people have lower levels of education, on average, than non-disabled people. In our sample, nearly two-fifths (39%) of non-disabled people are educated to degree level or higher compared to less than a quarter (24%) of disabled people; and disabled people are nearly three times as likely not to have any qualifications (17%, compared to 6% of non-disabled people).

There are also stark differences in employment rates of disabled and non-disabled people across education levels (**Figure 4.1**). In particular, there is a steep education-employment gradient for disabled people, which is not evident for non-disabled people. This means that the DEG is much smaller at higher qualification levels, ranging from 16pp among those educated to degree level to 48pp among those with no qualifications.

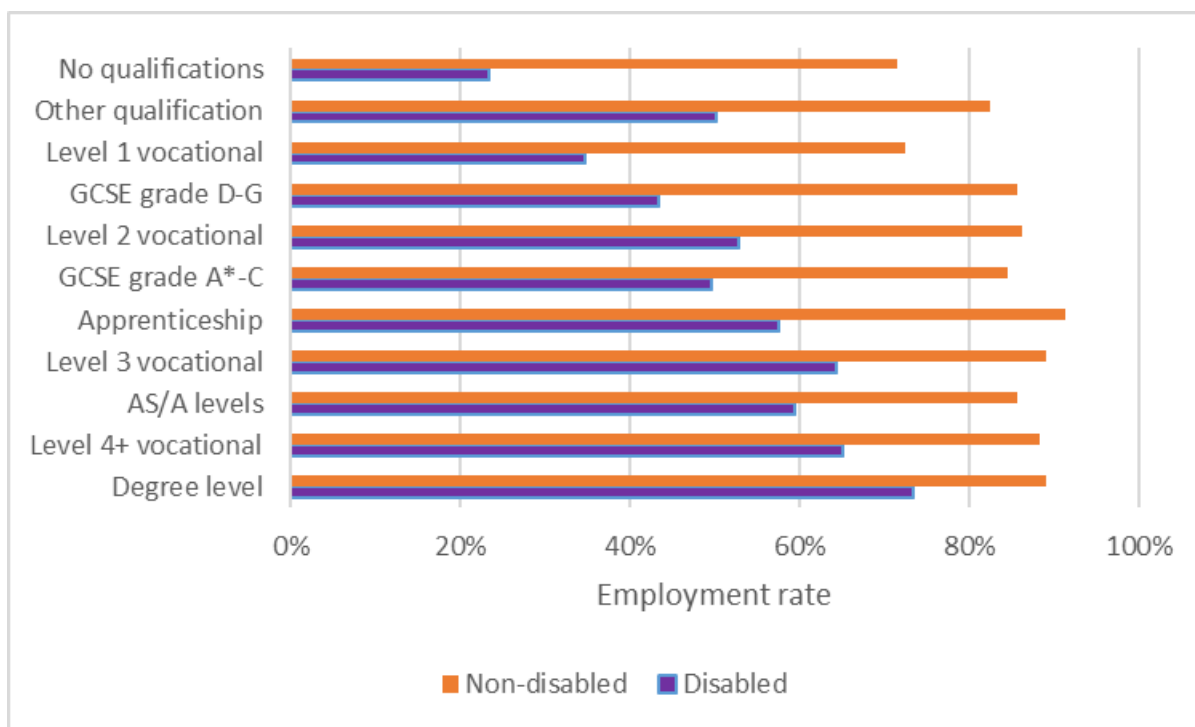
Education is a key differentiating factor for both the prevalence of disability and for the employment of disabled people (**Banks et al., 2023**). Disability in childhood or adolescence may give rise to significant barriers to educational attainment (Athanasou et al., 2019; Mann and Honeycutt, 2014), and low education can also lead to disability later in life (Latham, 2012). Nonetheless, education has been neglected in most of the existing literature on disability and employment. Most empirical studies that consider disability wage gaps or employment gaps include educational attainment simply as a control variable (see for example **Baldwin and Johnson, 2000; Berthoud, 2008; Jones and McVicar, 2020**); education is rarely the focus of study.

¹ As explained in Chapter 2.3, we used data from 2019 to avoid the impact of Covid, in addition to data quality issues. However, we have repeated the analysis for every year 2014-2021 and obtain similar results

Our analysis focuses on two main research questions:

1. If the educational divide were to be eliminated entirely, without changing anything else, by how much would the DEG be reduced?
2. How do the remaining structural gaps in employment vary across different qualification levels?

Figure 4.1 - Employment rates of disabled and non-disabled people by highest qualification, 2019



We also explore how the role of education differs across various demographic groups (by sex, age, type of health condition, and severity of impairment) and types of individuals based on preferences for paid work and relative attachment to the labour market. The latter two characteristics are particularly salient taking together recent efforts to get more disabled



people into employment² and the need to recognise that employment is not appropriate for all disabled people.

4.1 Data sample descriptives

Our data consists of 30,007 disabled people and 104,096 non-disabled people from the 2019 APS, aged between the ages of 25 and 64. **Table 4.1** shows summary statistics for key variables. Notably, the most common qualification level for both disabled and non-disabled people is degree (or higher degree), although as mentioned above, the proportion with a degree is significantly greater for non-disabled people (38.8% compared to 23.7% for disabled people). Moreover, non-disabled people are much less likely to have no qualifications than disabled people (6.3% compared to 16.6%).

Table 4.1 - Summary statistics for variables used in analysis of education and employment

	Non-disabled people	Disabled people (%)
Employed	86	53
Degree level	38.8	23.7
Level 4+ vocational	7.8	7.4
AS/A levels	7.2	6.1
Level 3 vocational	9.6	9.9
Apprenticeship	3.3	3.6
GCSEs grade A*-C	14.2	16.0
Level 2 vocational	4.8	6.9
GCSEs grade D-G	2.2	3.1
Level 1 vocational	0.4	0.8
Other	5.5	5.9
No qualifications	6.3	16.6

² A government target to get one million more disabled people into work by 2027 ([Department for Work and Pensions & Department of Health, 2017](#)) was achieved early. However, an earlier commitment to halve the DEG ([Department for Work and Pensions & Department of Health, 2016](#)) still remains a long way from being met.



Female	51.5	59.0
Age 25-34	23.2	15.6
Age 35-49	38.9	31.6
Age 50-64	38.0	52.8
White	88.0	90.5
Mixed / multiple ethnicity	0.9	0.9
Indian	2.7	1.6
Pakistani	1.8	1.9
Black	2.7	2.0
Other ethnicity	3.9	3.2
Married	75.4	58.7
N	104,096	30,007

There are also some demographic differences between disabled and non-disabled individuals. Disabled people are older on average than non-disabled people, they are disproportionately female, and they are less likely to be married. We take account of these individual characteristics in our analysis, as well as other measures that are pertinent for explaining the DEG, such as whether there are any dependent children in the household, partner's employment status (if applicable), housing tenure, and Local Authority effects. For a full description of all variables used in the analysis please refer to [Bryan et al. \(2023\)](#).

4.2 Overall DEG decomposition

The DEG in 2019 for people aged between 25 and 64 was 33 pp. As shown in [Figure 4.2](#), differences in educational attainment explain 12% (4.1pp) of this DEG. Other observed characteristics explain 33% (10.7pp). The remaining 55% of the DEG is attributed to structural barriers. In other words, the part of the DEG that remains after taking into account differences in educational attainment and other characteristics. This means that if the educational divide



between disabled and non-disabled people were to be eliminated³, the DEG would be reduced by 12% (holding all else constant).

We can further break down the education component to see how much of the DEG is explained by each of the education levels we consider (**Figure 4.2**). Out of the eleven education levels shown in **Figure 4.1**, two stand out as the main drivers, namely having a degree and having no qualifications.⁴ Together they account for a difference in employment rates of 3.9pp.

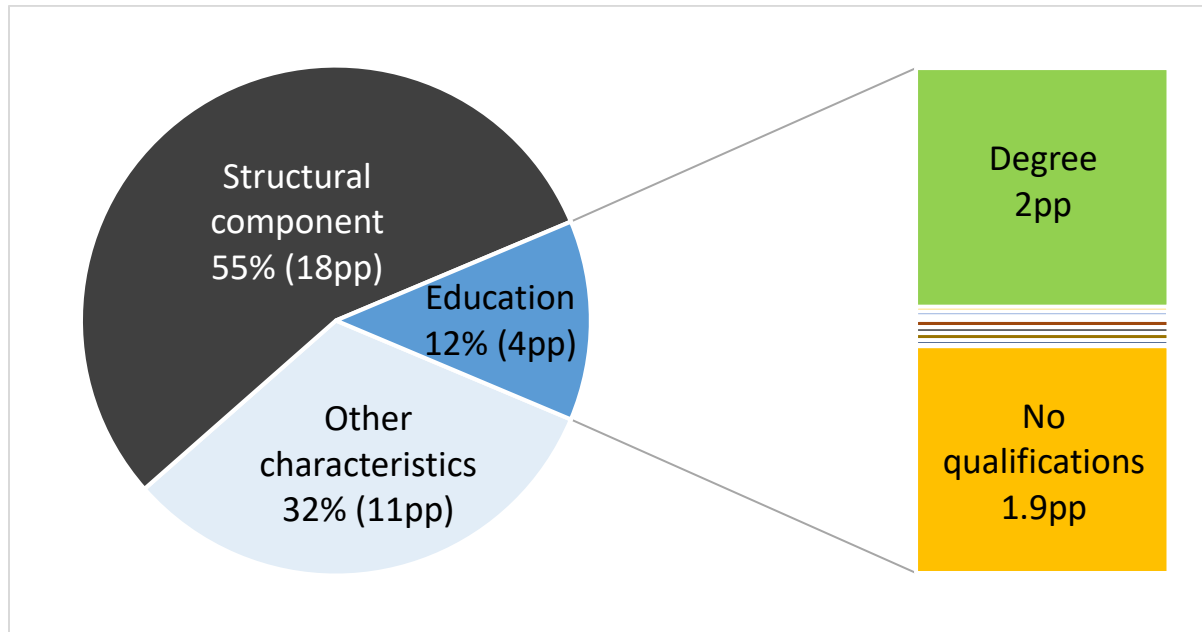
The size of the structural component suggests that eliminating structural barriers to employment would have a much greater impact on the DEG than improving the education levels of disabled people. The factors that make up this structural component are complex and include anything that causes disabled people to behave or be treated differently in the labour market, such that their chances of employment are reduced despite having the requisite education and skills; this might include (but is not limited to), features of the workplace or job, access to transport, and discrimination. It is beyond the scope of this project to identify the specific structural barriers affecting disabled people. However, our decomposition analysis can be used to ascertain how much of the DEG could be reduced if structural barriers were removed for each qualification level.

³ In a hypothetical world following the policy of raising the average education levels of disabled people to be the same as those of non-disabled people, almost two-fifths (39%) of disabled people would have a degree and only 6% would have no-qualifications.

⁴ For a full breakdown of the education component see Table A6 in **Bryan et al. (2023)**.



Figure 4.2 - Breakdown of the overall DEG



We find that wider structural gaps exist for people with lower levels of educational attainment, ranging from 12.3pp for people with degrees to 32.2pp for people with no qualifications. This means that higher education mitigates some of the barriers to employment that disabled people face. It also suggests that eliminating structural barriers for a disabled person with no qualifications would have a much larger impact on the DEG than eliminating structural barriers for a disabled person with a degree. However, looking at the sample as a whole, the greatest impact on reducing the DEG would be achieved by focusing on eliminating barriers for disabled people with a degree because of the sheer number of disabled people with a degree relative to those with other qualifications (see [Table 4.1](#)). More specifically, the structural gap among people with a degree accounts for over a quarter of the overall structural gap of 18.4pp. A further 19% of the structural gap is attributable to those with GCSEs grade A*-C as their highest qualification and 11% is attributable to those with no qualifications.

Taken together, if the proportion of disabled people with a degree in 2019 was equal to that of non-disabled people, and if (hypothetically speaking) structural barriers could be entirely



eliminated for these individuals, then the DEG would have been 6.8pp smaller. Alternatively, if the proportion of disabled people with no qualifications matched that of non-disabled people, and structural barriers were entirely eliminated for this group, then the DEG would have been 3.9pp lower.

Another way to think about the structural component of the DEG is to look at the association between education and the probability of being employed. We find that:

- For non-disabled people, holding a degree increases the probability of employment by only 3.5pp relative to the average return across all qualification levels. There is very little difference between holding a degree and having a high-level vocational qualification or apprenticeship.
- Among disabled people, holding a degree increases the probability of employment by 13.3pp and this is markedly higher than having a good vocational qualification.
- Disabled people suffer a larger employment penalty from having lower qualification levels. Having no qualifications is associated with an 18.5pp lower employment rate for disabled people but only 8.4pp for non-disabled people.

These differences in the return to education (or penalty for having no qualifications) represent barriers to employment captured by the structural component of the DEG.

4.3 DEGs by demographic groups and health conditions

Acknowledging that there is not simply one relevant DEG, we now explore decompositions of other DEGs defined by different individual characteristics and health conditions (**Figure 4.3**).

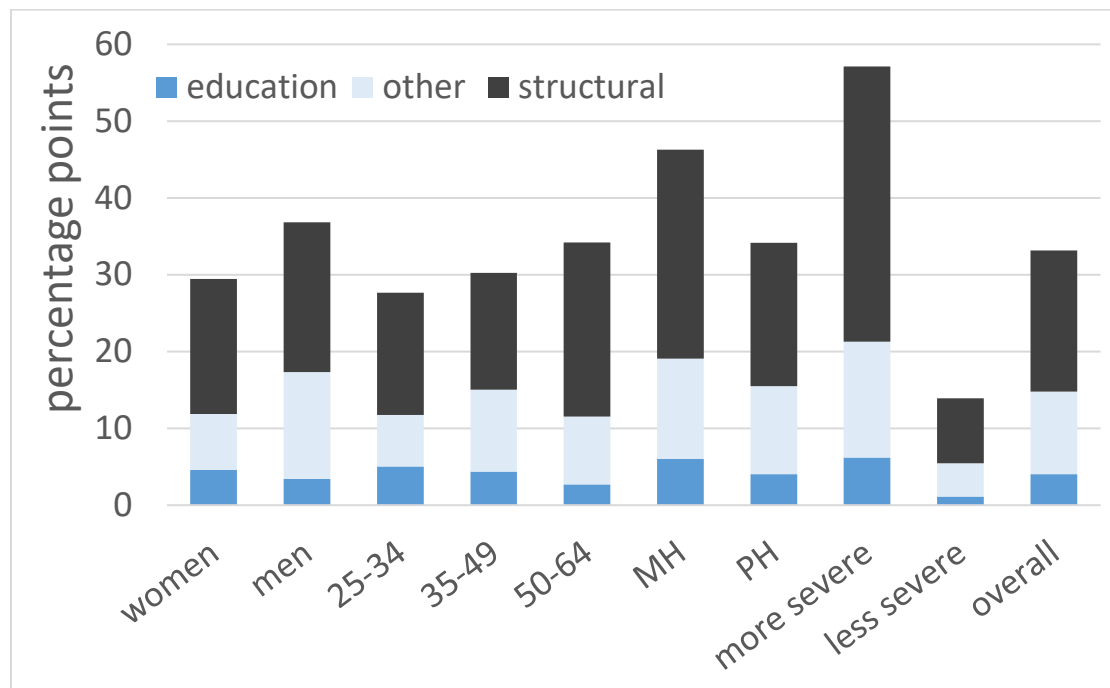
Overall the gap is wider for males (36.8pp) than females (29.4pp). This is due to non-disabled males having a much higher employment rate than non-disabled females, while the employment rate of disabled males is more similar to that of disabled females. Achieving



educational parity would have a greater effect on the female DEG (16%) than the male DEG (9%). For both sexes, reducing the number of disabled people with no qualifications and increasing the number of disabled people with degrees would have the most impact.

People over the age of 50 are much less likely than younger people to have a degree. They are also slightly more likely to have no qualifications. It is therefore not surprising that the DEG is larger for older people, rising from 27.7pp among 25-34 year olds to 34.2pp among 50-64 year olds. However, we find that education explains more of the DEG for younger people. Achieving parity of education would reduce the DEG by 5.1pp (18%) for 25-34 year olds. In contrast, the effect is just 2.7pp (8%) for 50-64 year olds. For the youngest age group, achieving parity in the proportion of people with a degree would have the most effect (3.1pp) but the effect would be negligible (0.8pp) for the oldest age group. The extent to which reducing the number of disabled people with no qualifications would affect the DEG is similar for all three age groups.

Figure 4.3 - DEGs by demographic groups and health conditions





We now turn to the separate DEGs for people with mental and physical health conditions respectively (remembering that some disabled people are in both groups) and people with ‘more severe’ and ‘less severe’ impairments. As shown in [Figure 4.3](#), the mental health (MH) DEG (46.3pp) is higher than that for physical health (PH) (34.2pp). Educational inequalities account for a similar proportion of the mental health and physical health DEGs (13% and 12% respectively), suggesting that education is equally important for people with mental health and physical health conditions.

As one would expect, disabled people with a more severe impairment have much lower employment rates than disabled people with a less severe impairment. Hence there is a big difference in the DEGs (57.1pp compared to 13.9pp). Achieving education parity would disproportionately help those with more severe impairments, reducing the more severe DEG by 6.2pp and the less severe DEG by 1.1pp. In both cases, most of this reduction would be achieved by decreasing the number of disabled people with no qualifications and increasing the number of disabled people with degrees.

4.4 DEGs by labour market preferences and attachment

Individual preferences potentially have an important role to play in the DEG, and this is a factor that is rarely, if ever, explored in the existing empirical literature. Work may not be appropriate for everyone, particularly disabled people with more severe impairments. Therefore, even in an ideal world we would expect a DEG to exist. We take account of this by defining a ‘preference-based’ DEG, where people expressing a preference not to work are removed from the analysis. Excluding such people should be done with caution as stating a preference not to work does not necessarily indicate that a person is not able to work or would not benefit from being in employment. Indeed, many such people could be experiencing ‘hidden unemployment’ as identified by [Beatty et al. \(2022\)](#). Also we must acknowledge that ‘preferences’ can be constrained by the existing labour market context, and that some disabled people may have been discouraged from work by their previous labour market experiences.

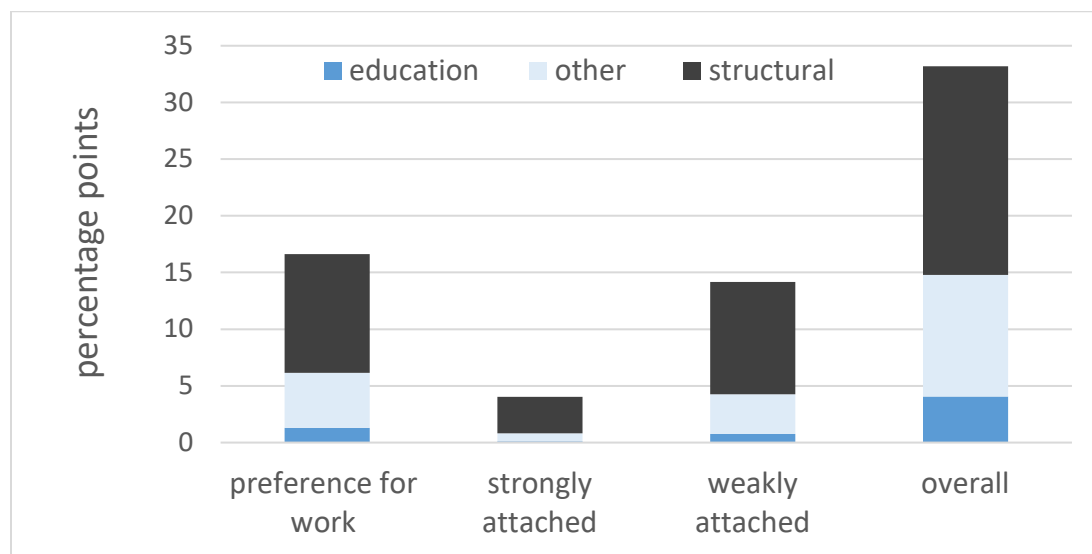


Nevertheless, although the preference-based DEG is smaller than the overall DEG, a gap still exists (16.6pp), demonstrating that, even among those who state that they want to work, disabled people are still significantly less likely to be employed.

An alternative way to differentiate people who are close to the labour market from those who are more detached is to observe how long ago they last worked. If we remove everyone who left their last job more than 12 months ago (or have never worked), the DEG falls to 4.0pp. If we remove everyone who left their last job more than five years ago (or have never worked), the DEG is 14.2pp. We define these DEGs as the ‘strongly attached’ and ‘weakly attached’ DEGs respectively. These results are particularly informative for a policy that seeks only to improve the employment prospects of disabled people who are close to the labour market.

Figure 4.4 shows that investing in education is predicted to have a relatively small effect on the preference-based DEG (1.3pp or 8%). Again, most of this investment should be focused on improving the education of disabled people with no qualifications and helping more disabled people gain degree level qualifications. Investing in education would have an even smaller effect on the ‘strongly attached’ DEG (0.1pp or 3%) and the ‘weakly attached’ DEG (0.8pp or 5%), although other characteristics do explain a larger share of the gap.

Figure 4.4 - DEGs by labour market preferences and attachment





4.5 Concluding remarks

Our results suggest that a significant proportion of the DEG can be explained by inequalities in educational attainment between disabled and non-disabled people. If disabled people could achieve the same qualification levels as non-disabled people, this could reduce the DEG by up to 12%; an effect that would be greater for females than males, and greater for younger people than older people.

However, there is also a large unexplained component, with our analysis revealing that the employment penalty for having no qualifications is much higher for disabled people and we suggest several possible reasons for this. First, as disabled people tend to face more barriers in education, those who do attain a good education may have other qualities leading them to be particularly employable, such as motivation and resilience or strong support from family and social networks. Second, higher qualifications allow people to access jobs which are more disability friendly and have fewer barriers. Good qualifications also make it easier for people to change jobs and hours of work without having to leave employment altogether. Third, due to the existence of statistical discrimination, many disabled people may feel they need to gain qualifications in order to counter discrimination. Faced with imperfect information about the qualities of job applicants, employers may interpret the presence of a disability as a signal of lower productivity. Disabled people can offset this discrimination by using formal qualifications to signal their productivity.

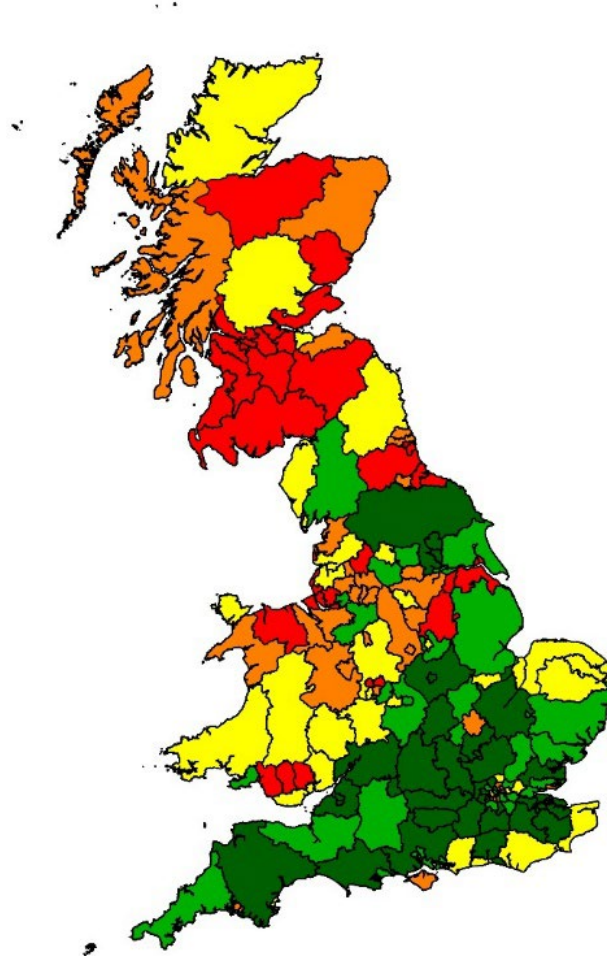


5 The geography of the DEG

An important feature of the DEG is that there is substantial variation across the country. Over the period 2014-2019, the DEG was 31.5pp in Great Britain as a whole but ranged from 16.9pp in Buckinghamshire to 42.5pp in North Lanarkshire. The map in [Figure 5.1](#) illustrates this geographic variation; areas that have a higher than average DEG (red on the map), are concentrated in Scotland, Wales and the north of England while areas that have a lower than average DEG (green on the map), are concentrated in the south of England.



Figure 5.1 - DEG quintiles by International Territorial Level 3 (ITL3) area⁵



Using novel decomposition techniques, we find that the key drivers of this spatial variation are local population characteristics and economic structure, particularly the industry composition of the area. In contrast, spatial variation in healthcare capacity, social capital, employer policies towards disability and the stringency of statutory welfare provision do not appear to have an effect on the gap. Our results suggest that locally adapted policies to narrow the gap may be more effective than a one-size-fits-all approach.

⁵ Red areas are in the highest quintile (largest / most positive DEG differences) and green areas are in the lowest quintile (smallest / most negative DEG differences).



5.1 Background and motivation

These geographic differences in the DEG reflect wider spatial inequalities across Great Britain. As set out in the previous Government's *Levelling Up* White Paper (HM Government, 2022), the UK is one of the most spatially unequal countries in the developed world. While some cities and regions are thriving economically, other areas are becoming increasingly 'left behind'.

A strong case can be made to suggest that disabled people are particularly disadvantaged when living in a left behind area and hence have the most to gain from policies to distribute economic prosperity more evenly across the country. When jobs are scarce, disabled people can find themselves at the back of the 'job queue' (Beatty et al., 2000), being among the first to be made redundant and the last to be recruited. Moreover, disabled people may have less incentive to participate in the labour market in areas with low wages. This is because disabled people may have higher 'reservation wages'⁶ than non-disabled people due to facing higher costs of working (e.g. additional travel or equipment costs) and being entitled to out-of-work disability benefits.

5.2 People effects and place effects

To unpack this geographic variation in the DEG, our approach is to separate out the part of the DEG variation that can be explained by differences in the characteristics of the disabled and non-disabled populations across areas. We call this the 'people effect'. Any remaining variation not explained by demographic differences is called the 'place effect'. We unpack the place effect further by exploring the extent to which this can be explained by specific area-level characteristics.

⁶ The 'reservation wage' is the lowest wage rate at which a worker would be willing to accept a particular job.



Pooling together APS data from 2014 to 2019, we calculate the difference between the DEG in each of the 166 International Territorial Level 3 (ITL3) areas in Great Britain⁷ and the national DEG. Using data on other individual-level characteristics (for example highest qualification levels, see **Chapter 4**), we identify a people effect for each area. This is defined as the part of the DEG difference that can be attributed to differences in the characteristics of the population living in the area. We then have a remaining part that we identify as the place effect. For each area:

$$DEG \text{ difference} = \text{People effect} + \text{Place effect}$$

The place effect can be interpreted as the DEG difference that would remain if an area had exactly the same population characteristics on average as Great Britain as a whole. These place effects are mapped in **Figure 5.2**. The yellow areas have place effects close to zero, due to most of their DEG difference being explained by people effects alone. The red areas have positive place effects such that their DEG would be higher than the national average if population differences were eliminated. Similarly, the green areas have negative place effects, indicating that they would have a lower DEG than nationally if population differences were eliminated. The overall pattern is similar to the distribution of actual DEGs (**Figure 5.1**) but there are also some clear differences. For example, some rural areas of northern Scotland and mid-Wales move into a higher quintile (i.e. become ‘more red’) once population characteristics are taken into account while several areas in London (less easy to see on the map) move into a lower quintile (i.e. become ‘more green’).

⁷ ITL3 areas are administrative areas formerly known as NUTS3 areas. Each ITL3 area is equivalent to either a single local authority or, in some cases, a group of two or more local authorities. This aggregation of smaller local authorities into larger ITL3 areas was necessary to ensure sufficient sample size in each area. Due to small sample sizes, Orkney and Shetland are excluded. We also exclude Northern Ireland due to inconsistencies with the rest of the UK in some other data sources used in our analysis.



Figure 5.2 - Place effect quintiles by ITL3 area⁸

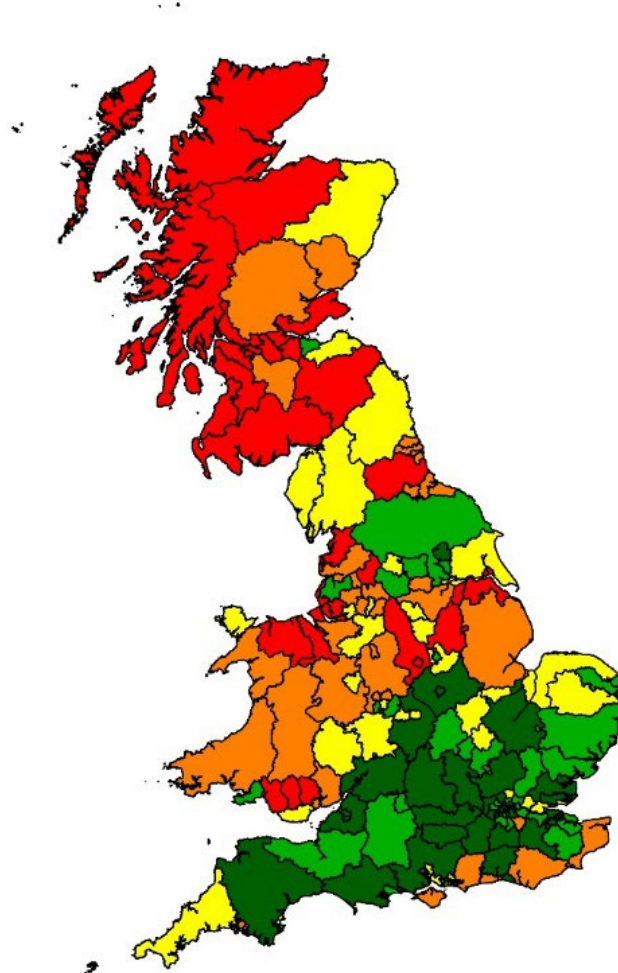
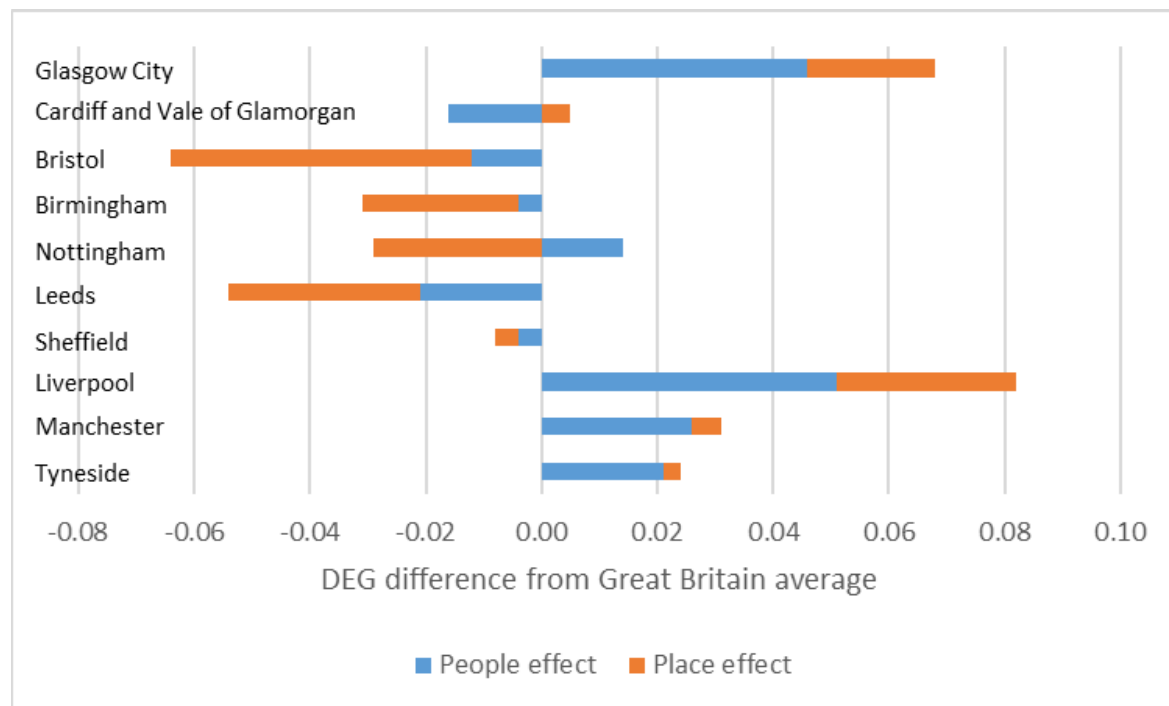


Figure 5.3 shows the people and place effects for the ten ‘core cities’ in Great Britain. Cities such as Glasgow and Liverpool have a DEG above the national average that is explained by both people effects and place effects. In contrast, Bristol and Leeds have a lower than average DEG, which is also explained by both people and place effects. In Cardiff, however, the people and place effects are working in opposite directions. The city has a lower than average DEG because of its population characteristics but they are partly offset by unfavourable place effects.

⁸ Red areas are in the highest quintile (most positive place effects) and green areas are in the lowest quintile (most negative place effects).

Meanwhile, Nottingham would have an above average DEG based on its population but actually has a below average DEG due to strongly favourable place effects.

Figure 5.3 - Breakdown of the DEG in core cities



5.3 Explaining the place effects

The next step in the analysis is to use area-level data to explain the place effects (orange components in [Figure 5.3](#)). To do this, we identify factors found in the literature to affect the employment prospects of disabled people and combine data from a wide range of sources to measure these factors at ITL3 level. These factors can be categorised as relating to labour demand, labour supply and policy. The factors we include are:⁹

⁹ See **Appendix B** for data sources and variable specifications



Demand

- Unemployment rate
- Gross Value Added (GVA) per hour worked
- Share of employment by industry
- Share of employment by occupation
- Homeworking index
- Flexible working index
- Autonomy at work index

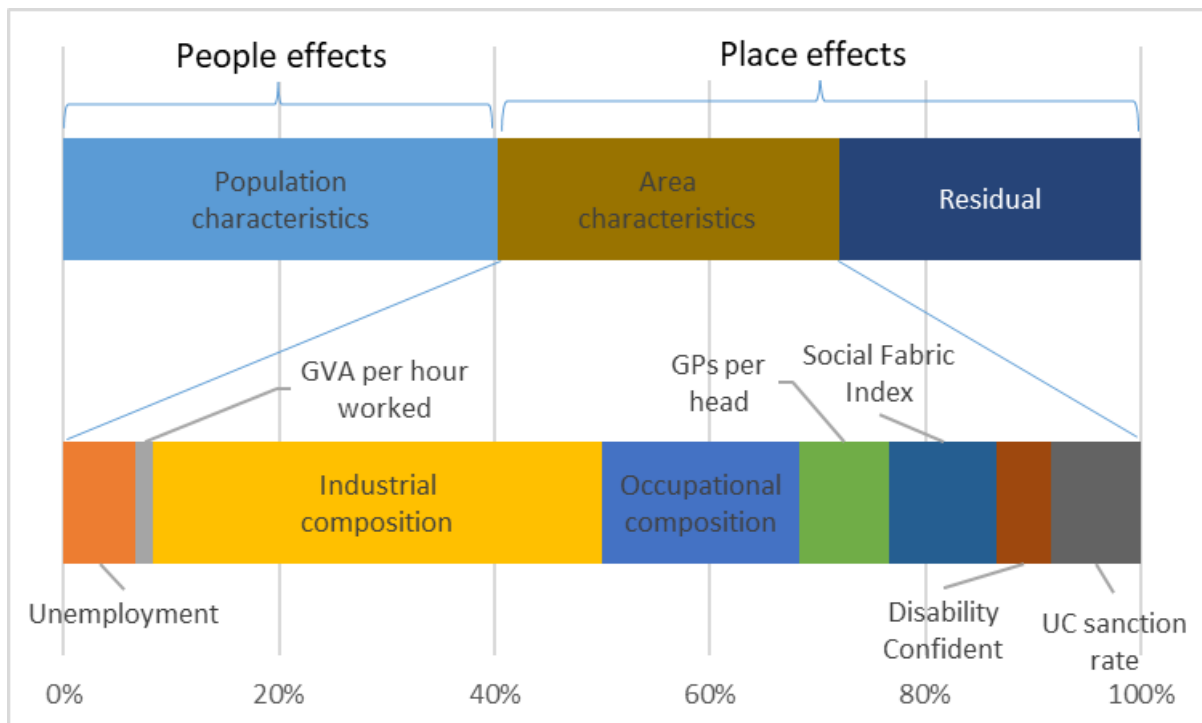
Supply

- General Practitioners (GPs) per thousand population
- Social Fabric Index
- Journey times by public transport

Policy

- Disability Confident employers per thousand businesses
- Universal Credit sanction rates

Figure 5.4 - Overall decomposition of the DEG difference





The results for Great Britain as whole are summarised in [Figure 5.4](#). We find that people effects explain about 40% of the spatial variation in the DEG and the remaining 60% is attributed to place effects. More than half of these place effects can be explained by the area-level characteristics included in the model. The lower bar in [Figure 5.4](#) shows a detailed breakdown of the area characteristics component. It is clear that this is dominated by factors relating to labour demand, particularly industrial and occupational composition.

We find that, everything else being equal, areas with a high proportion of the employed population working in ‘knowledge services’ (information and communication; financial and insurance activities; professional, scientific and technical activities; and education) have a lower place effect on average, as do areas with a high proportion of the employed population working in elementary occupations (such as cleaning, security and hospitality occupations). This implies that areas with highly developed labour markets demanding a complementary mix of skills at different levels are particularly conducive to having a low DEG. Having a low unemployment rate is also associated with a lower place effect but, as shown in [Figure 5.4](#), factors relating to supply and policy have a much smaller contribution. It is also important to note that almost half of the place effects cannot be explained by observed area-level characteristics. This is shown by the residual component in [Figure 5.4](#).

5.4 Further analysis

In supplementary analysis, we replace the industry and occupation composition measures with bespoke indices measuring the extent to which the jobs available in an area are suitable for homeworking, offer flexible working and allow people to work with autonomy. While a greater scope for homeworking is associated with a lower place effect, paradoxically the reverse is true for areas with potential greater work flexibility (although this is much less



important in explaining the place effects than homeworking). A further supplementary analysis for England only including journey times by public transport as an additional area-level characteristic finds that transport explains very little of the place effect in most areas.

Full results for all our analyses are available in our working paper ([Bryan et al., 2024](#)).

5.5 Concluding remarks

In summary, we find that geographic variation in the DEG across Great Britain is not explained fully by people effects. These remaining place effects, however, are not random but to some extent can be explained by variation in area level characteristics, particularly the nature of labour demand. It is clear that differences in underlying labour market conditions are not only driving overall employment rates but also the extent to which disabled people are accessing employment relative to their non-disabled counterparts. The types of jobs available in an area, indicated by industry and occupational composition, have a disproportionate effect on the employment of disabled people.

Given the importance of local factors, our results suggest that a one-size-fits-all approach to narrowing the DEG (for example by promoting skills) is at most a partial solution and may be less effective than locally adapted policies. Indeed the dual government priorities of reducing spatial inequalities in the UK and narrowing the DEG may be highly symbiotic. Attracting high value private sector investment to left behind areas in Scotland, Wales and the north of England could help to boost the employment prospects of disabled people to a greater extent than their non-disabled counterparts, even if this employment is not concentrated in the most high-skilled occupations. This may have a greater impact than more direct interventions such as investment in healthcare, public transport or community resources or an emphasis on policies towards the employment of disabled people. However, in many areas substantial residuals remain that cannot be explained by individual or area-level characteristics, indicating



that spatial variation in the DEG would continue to exist even if all inequalities in economic outcomes were removed. This indicates that there is scope for bespoke regional interventions to address specific barriers to disabled people's labour market participation at a local level.



6 Unpacking trends in the DEG

The last decade has seen some dramatic changes in the working age population of the UK. Worsening health and an increase in the prevalence of disability have put pressure on the UK workforce. Despite this, employment rates have continued to rise (as seen in **Chapter 3**), and yet increasing levels of economic inactivity in the years since the pandemic are now a cause for concern.

Against this background, we unpack the trends in disability and employment since 2014. We initially look at the employment rates of disabled and non-disabled people separately, before bringing them together to explore trends in the DEG, and then finally consider the overall employment rate. We particularly examine the changing composition of disability, and notably the shift towards less severe mental health conditions. It is known that disability increased the most among employed people ([McCurdy, 2022](#)) and there have been suggestions that greater reporting of less severe health issues inflates the measured employment rate of disabled people ([Wass and Jones, 2020](#)). To investigate this possibility, we use the information in the APS on 13 separate health conditions and their severity to project what would have happened had the composition of health conditions not changed. We also assess the contribution of other factors by including a set of socio-demographic characteristics (notably education as in **Chapter 4**) known to affect employment.

While our analysis covers the full period 2014-2022, we should acknowledge concerns about the quality of the LFS data (on employment) since the start of the pandemic (2020-22 in our data). The issues relate to declining response rates (39% in 2019, falling to only 17% in 2024), with steeper falls among some demographic groups, and uncertainties in the population data used for weighting (Corlett and Slaughter, 2024). While the ONS is working on improvements,

at this point we can simply note these caveats and advise the data for 2020-22 to be viewed in the context of the longer term trends.

6.1 Trends in disability

As shown in **Figure 6.1**, the prevalence of disability has increased steadily over the past decade, from 17.5% of the working age population in 2014 to 22.7% in 2022. This was mainly driven by a 3.2pp increase in the percentage of people with a less severe impairment, but the prevalence of more severe impairment also increased over this period, by 2.0pp.

Figure 6.1 - Disability prevalence by severity of impairment (percentage of working age population)

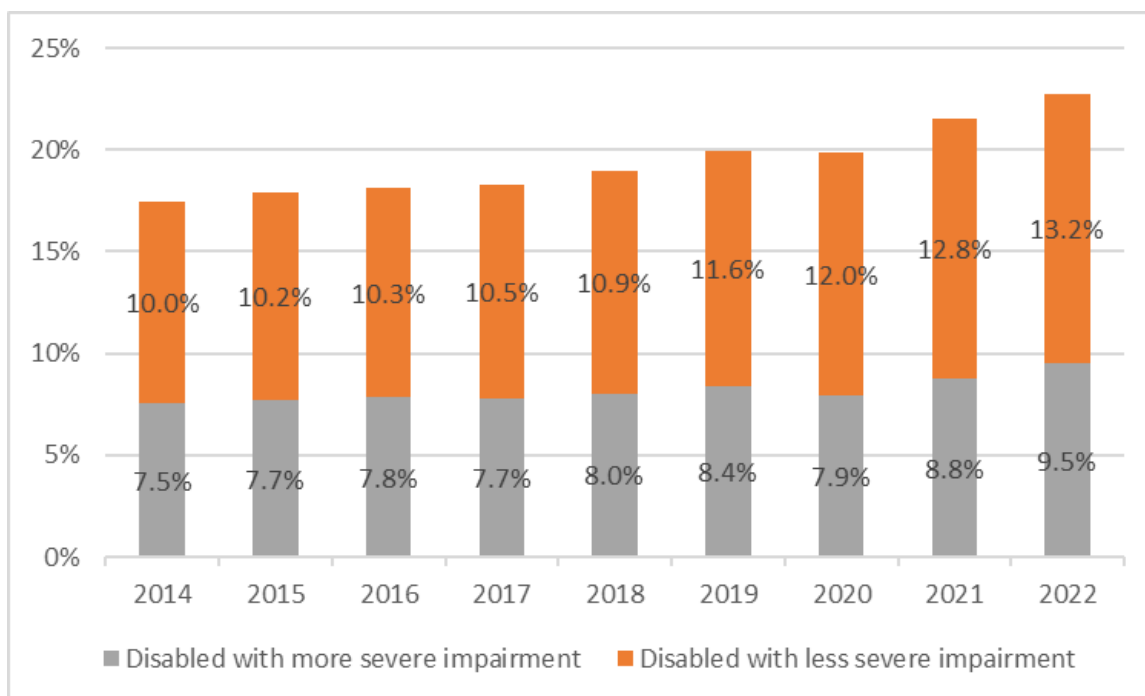
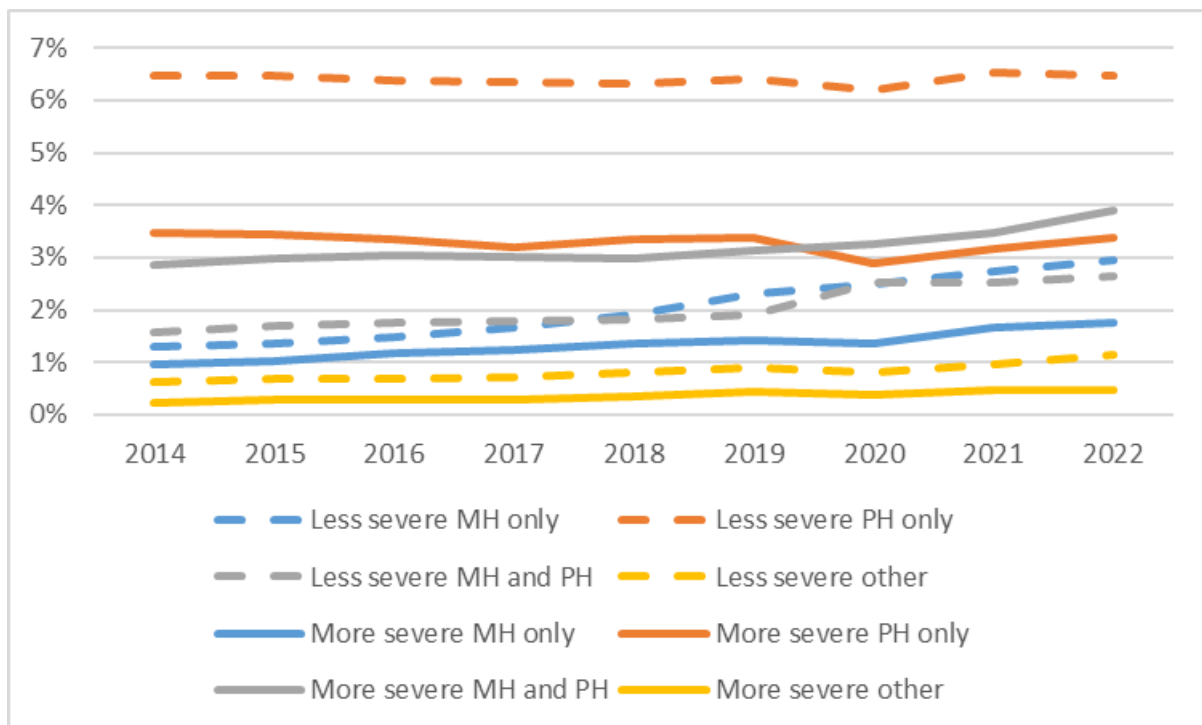


Figure 6.2 shows the health conditions and severity of impairment underlying these trends (as defined in **Appendix F**, we group the disabilities into mental, physical and other health conditions). There has been a particular increase in the number of working age people reporting a disabling mental health condition. The percentage of people with a less severe



impairment involving a mental health condition only has more than doubled in the last ten years from 1.3% in 2014 to 3.0% in 2022. There has also been a substantial increase in the prevalence of more severe impairment due to mental health conditions only, from 1.0% to 1.8%. By contrast, the prevalence of disability due to physical health conditions has remained largely unchanged, although it is still the case that many more people are disabled due to physical health conditions than mental health conditions. However, the last decade has seen a rise in the number of disabled people reporting both physical and mental health conditions indicating that comorbidity is becoming a growing problem in the working age population.

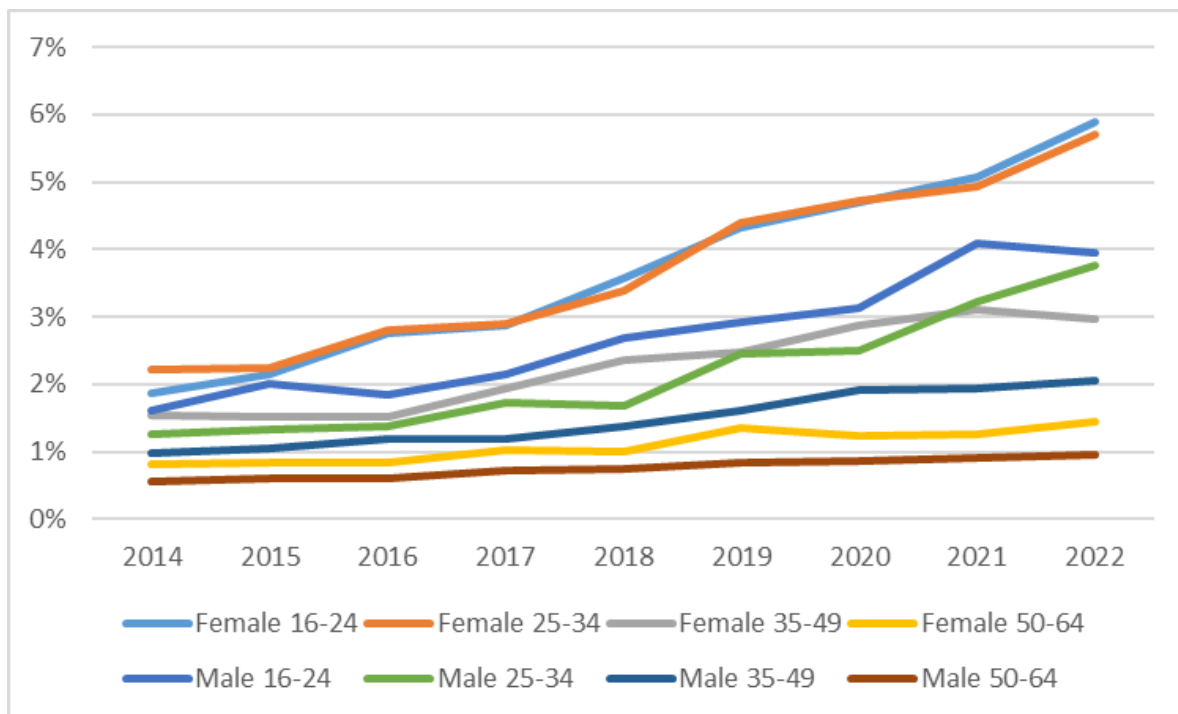
Figure 6.2 - Disability prevalence by severity of impairment and health condition (percentage of working age population)



Disability prevalence varies by age and sex: not surprisingly, older people are more likely to be disabled than younger people, but also females are more likely to be disabled than males. Moreover, these gaps have changed over time and [Figure 6.3](#) shows the most striking aspect of these changes, among people with a less severe impairment and a mental health condition only. Younger people (particularly females) are most likely to be in this category and have

experienced the most growth in prevalence. The number of females aged 16-24 with a less severe mental health disability has tripled over the last decade from 1.9% in 2014 to 5.9% in 2022, with a very similar increase among females aged 25-34. Their male counterparts, by contrast, experienced a smaller rise, from about 1.6% to 3.9%.

Figure 6.3 - Prevalence of less severe mental health disability by age and sex



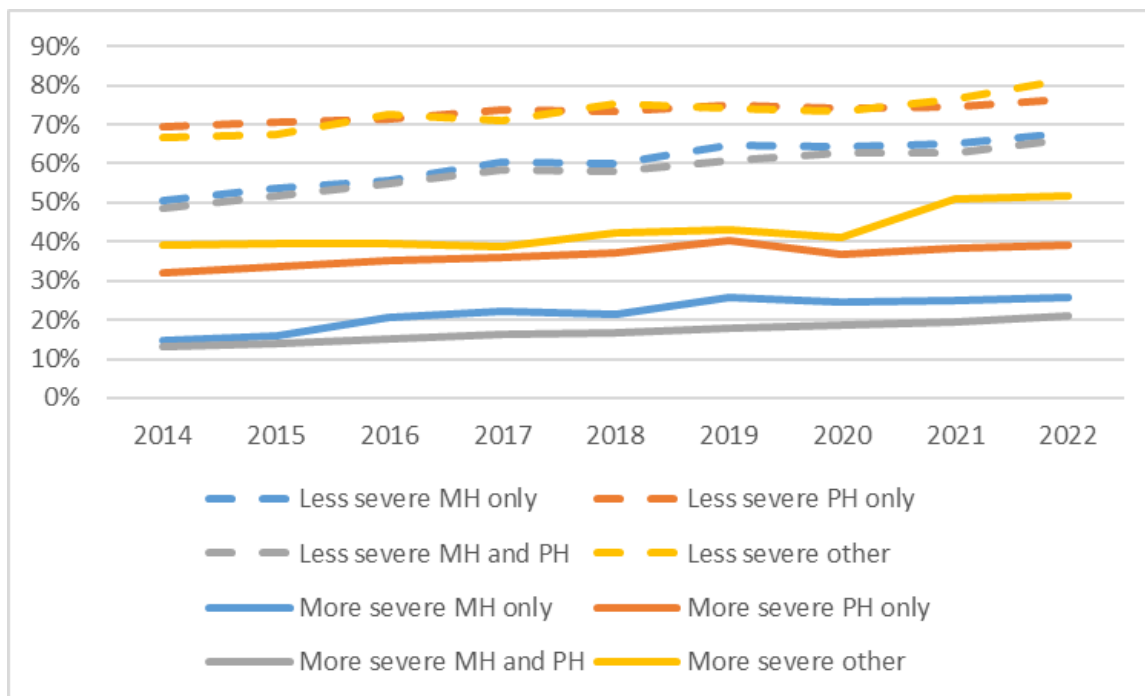
6.2 Trends in employment rates

Mirroring the overall rising trend in the employment of disabled people seen in **Chapter 3**, **Figure 6.4** shows that employment has also been increasing for all groups within the disabled population. However, those with a mental health condition have experienced the greatest increase in employment. For example, employment rose from 50.6% in 2014 to 67.8% in 2022 for those with a less severe mental health condition only. Despite this increase, the employment rates for mental health conditions remain well below those for physical health



conditions (at the same severity). For people with both types of condition, the limiting factor is mental health. Thus the employment rate for those with both a mental and physical health condition (less severe) is similar to the rate for those with a less severe mental health condition only (48.6% in 2014 rising to 66.3% in 2022). As we will see below, the lower employment rates for mental health (combined with higher employment rates for less severe conditions) can help disentangle the effects of the changing composition of disability on the overall employment rate.

Figure 6.4 - Employment rates by severity of impairment and health condition



6.3 Unpacking the trends in the employment rates

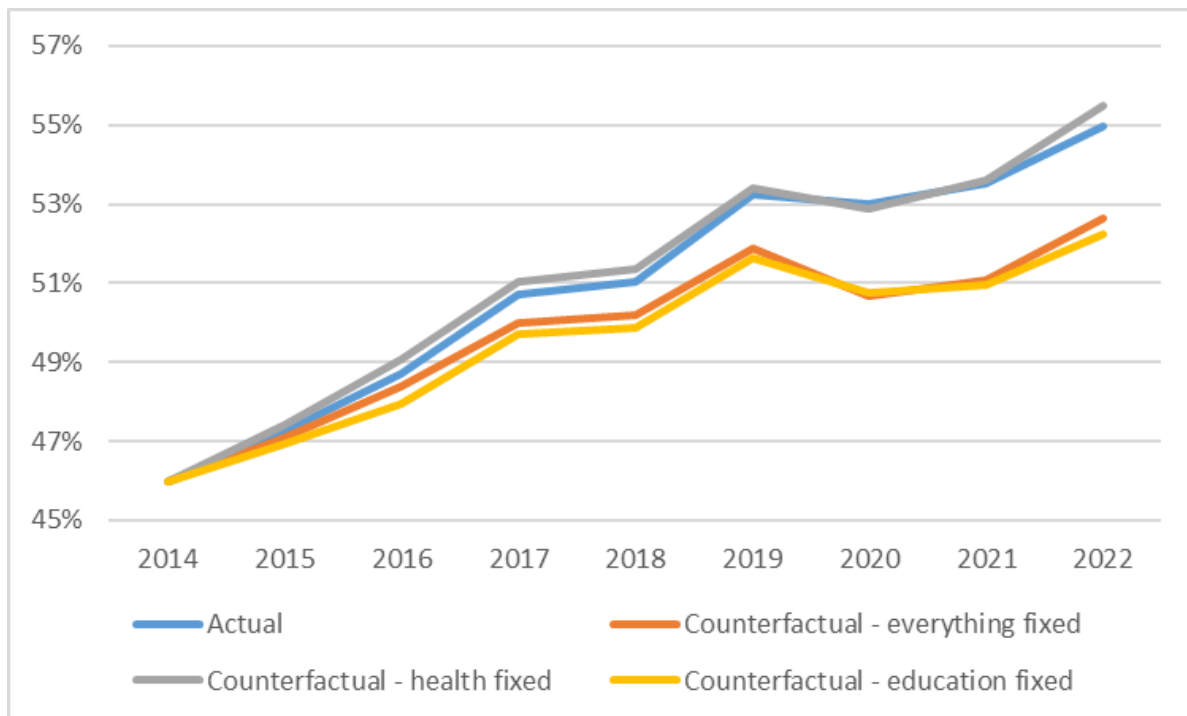
Using a set of regression models that explain employment based on health conditions and severity, and a set of other key sociodemographic characteristics, we now unpack the employment trends further. This involves making projections (called counterfactual scenarios)



about what the employment rates would be if different groups of characteristics were held fixed at their 2014 levels. By changing the characteristics, and comparing the counterfactual results with the actual employment trends, we can assess the importance of different characteristics in explaining the trends.

We start by looking at the actual employment rate of disabled people, shown in blue in **Figure 6.5**. It has been steadily rising over the last decade from 46.0% in 2014 to 55.0% in 2022 (an increase of 9.0pp). However, the figure shows that the increasing employment rate cannot be attributed to changes in the health profile of the disabled population (for example between more severe and less severe impairments and between physical health and mental health conditions). As illustrated by the grey line, if health had not changed, our model predicts that the employment of disabled people would have grown at about the same rate.

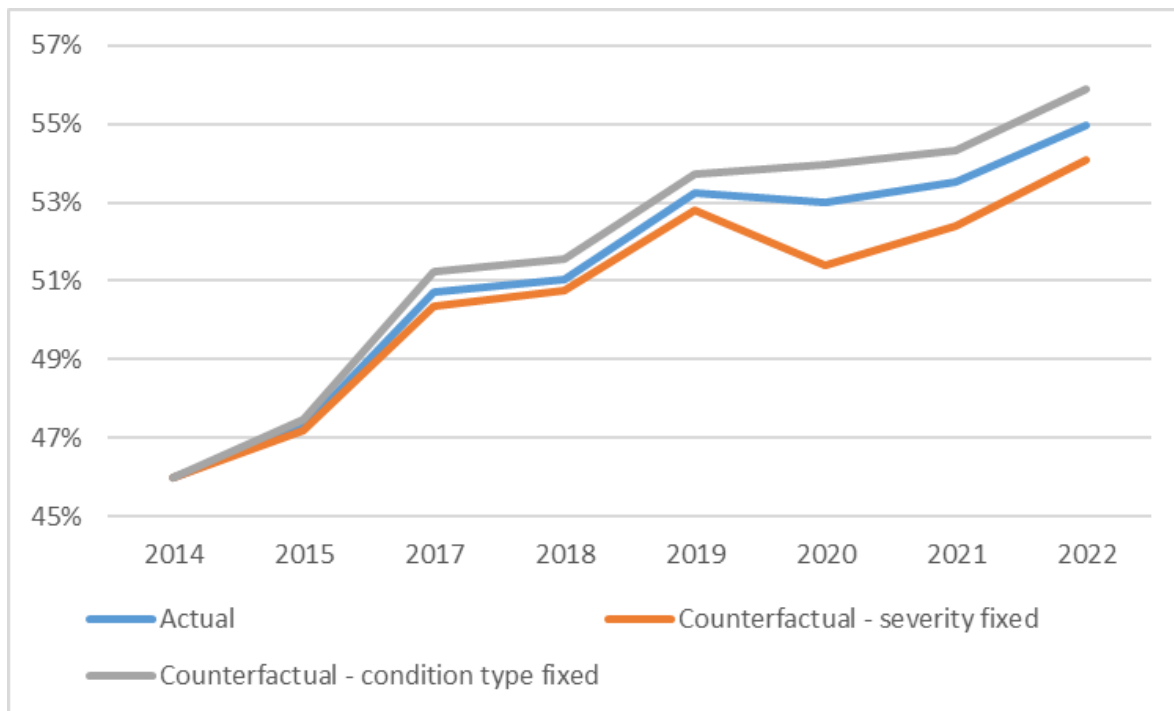
Figure 6.5 - Employment rate of disabled people: Counterfactual trends





The negligible contribution of health to the increasing employment of disabled people may appear puzzling given the increasing prevalence of less severe mental health disability noted above. However, we can decompose the health effects further. The orange line in **Figure 6.6** shows that the employment rate of disabled people would have been 0.9pp lower in 2022 had the proportion of disabled people with more severe impairments remained unchanged at 2014 levels instead of falling (while allowing the distribution of health conditions between physical and mental health to change in line with actual proportions). However, if the distribution of health conditions was held at 2014 levels but severity was allowed to fall as it did, this would have resulted in the employment rate of disabled people increasing by a further 0.9pp (the grey line). There are thus two opposing effects: declining severity, which raises employment, and increased prevalence of mental health conditions, which lowers employment compared with physical health conditions. The two effects cancel each other out resulting in no overall health effect on the employment rate of disabled people.

Figure 6.6 - Employment rate of disabled people: Breakdown of the health effect





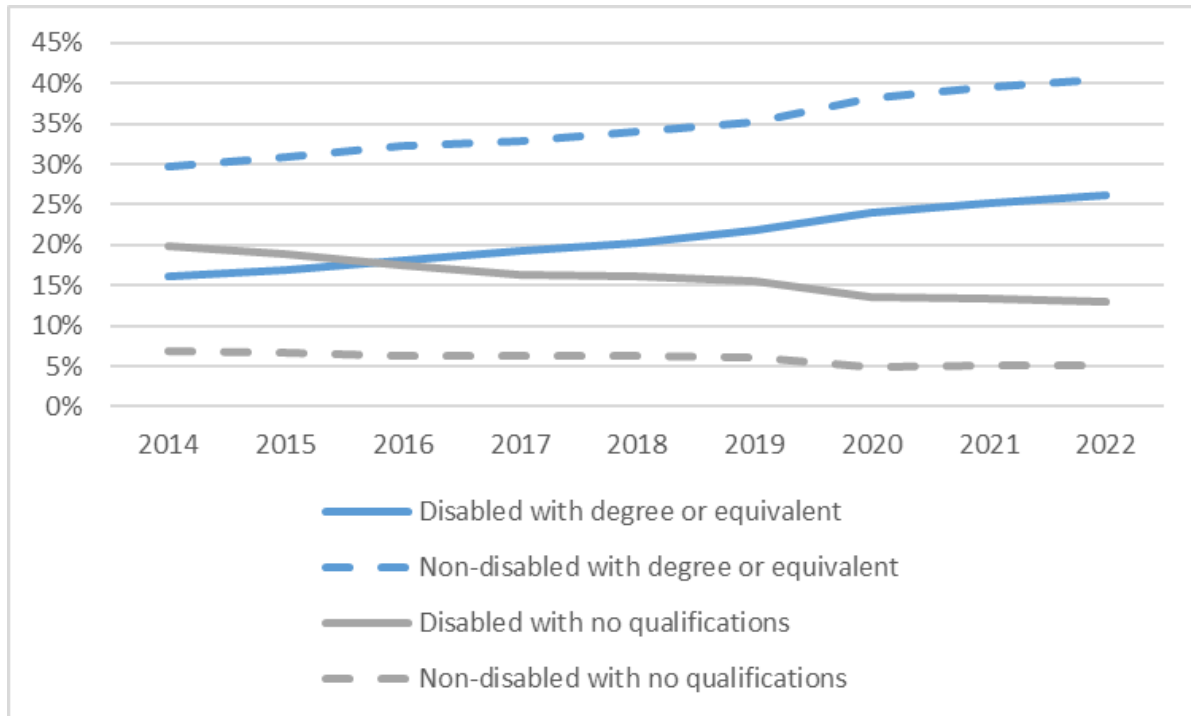
If overall changes in health cannot explain disabled people's employment, what can? Returning to **Figure 6.5**, we see that changes in education explain much of this growth. If average education levels of disabled people remained at 2014 levels, the employment rate would only have reached 52.2% in 2022 (the yellow line) compared with its actual level of 55.0% (the blue line). In other words, about 2.8pp of the 9.0pp growth in the employment rate of disabled people between 2014 and 2022 can be attributed to education. The rest is not explained by changes in any other of the characteristics of the disabled population (the orange line, which almost coincides with the yellow one).

Before moving to assess the overall effect on the DEG, we must also consider the effects of health, education and other characteristics on the employment rate of non-disabled people. A similar exercise to above shows that again changes in health have had limited effect. In this case, however, this is due to the vast majority of non-disabled people being classified as having no health problems in each year. In the counterfactual where education is fixed at 2014 levels, the employment rate of non-disabled people would have been 0.9pp lower in 2022, only a third of the difference observed for disabled people.

To help understand the contribution of education to employment rates, **Figure 6.7** illustrates how the working age population in the UK has become more educated as younger cohorts leave full time education with higher qualifications on average than their older counterparts. Both disabled and non-disabled people are more likely to have a degree in 2022 than in 2014 (the gap very slightly increased from 13.8pp to 14.5pp). Most strikingly, the percentage of disabled people with no educational qualifications plummeted from 19.9% to 13.1% (while only falling from 6.8% to 5.2% for non-disabled people). As we showed in **Chapter 4**, the different proportions of people with degrees and no qualifications are key factors in explaining the DEG.



Figure 6.7 - Education levels by disability (percentage of working age population)

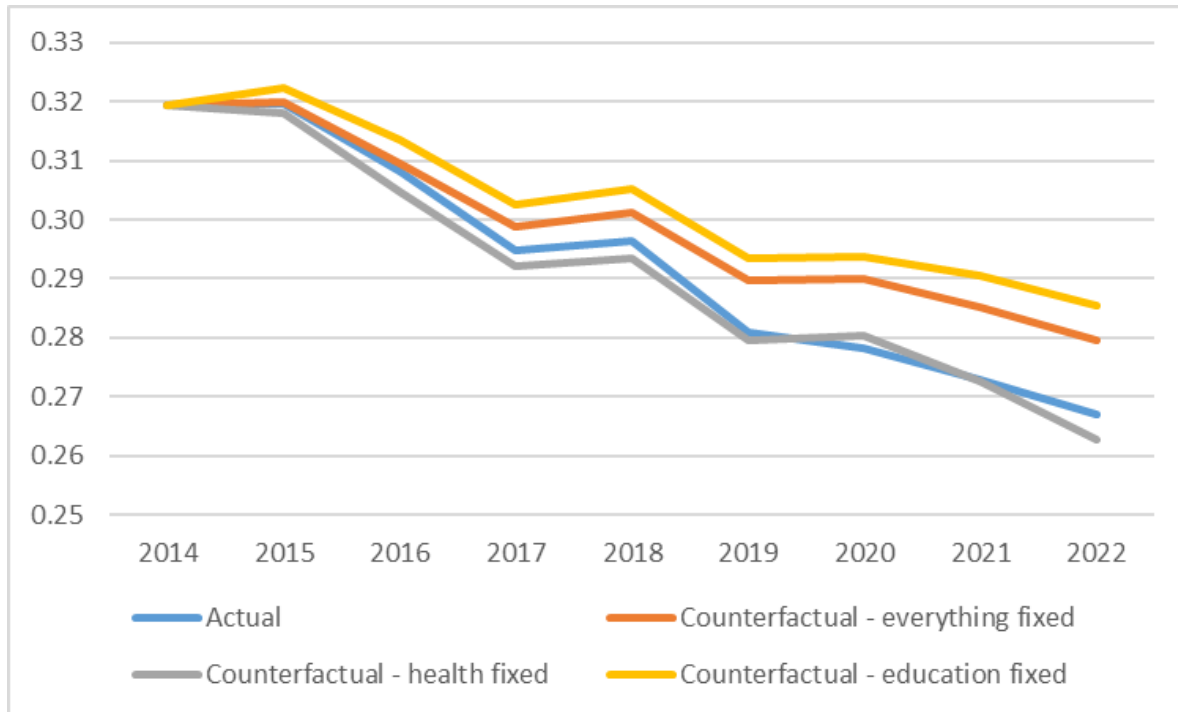


6.4 Unpacking the trends in the DEG

By putting all these counterfactuals together, we can estimate what the DEG would have looked like under different scenarios. **Figure 6.8** confirms that while rising education levels have helped to improve the employment rates of both disabled and non-disabled people, disabled people have benefited disproportionately. The DEG would have been 1.9pp higher had the education levels of both disabled and non-disabled people remained fixed at 2014 levels, implying that improved education can account for 37% of the fall in the DEG (of 5.2pp). However, the effects of keeping health fixed are negligible.



Figure 6.8 - DEG: Counterfactual trends

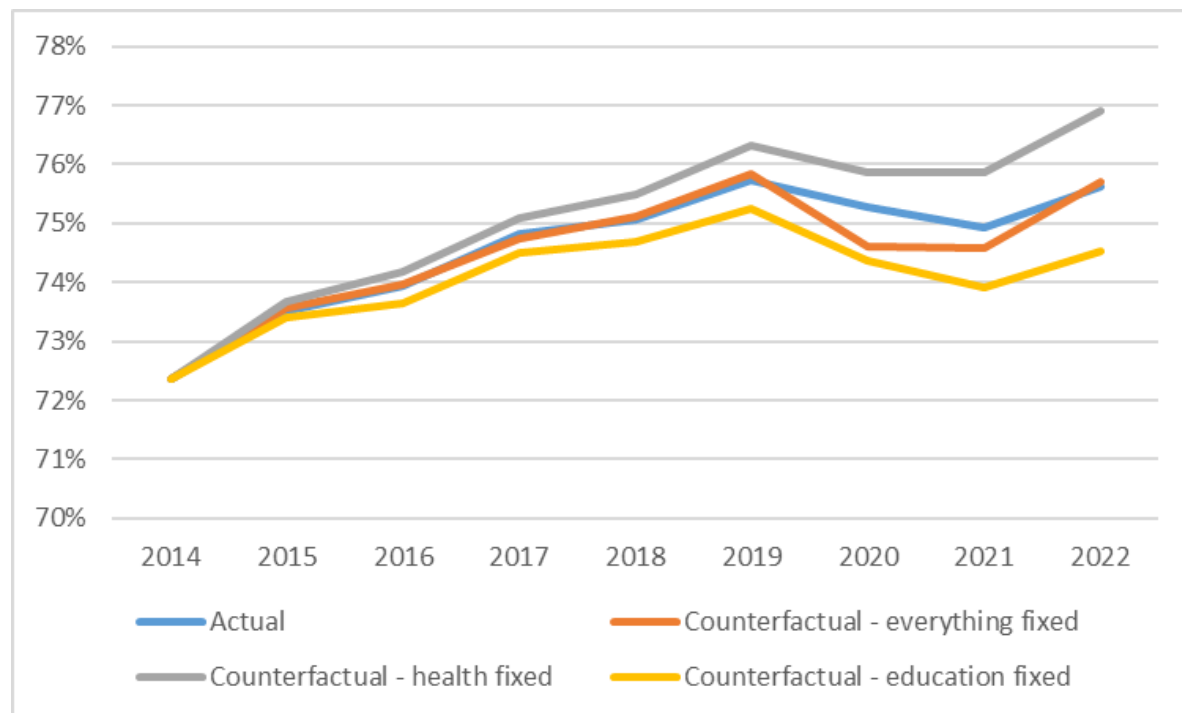


6.5 Unpacking the overall employment trend

We have seen that the employment rates of both disabled and non-disabled people have increased over the last decade while the DEG continues to fall due to disabled people having higher employment growth. These trends have contributed to a rising employment rate among the working age population as a whole. However, the DEG remains very wide because disabled people still have much lower rates of employment than non-disabled people. This persistent gap implies that any increase in the prevalence of disability – as we have seen since 2014 – will put downward pressure on the employment rate, partly offsetting the above positive trends. The grey line in **Figure 6.9** shows that if the prevalence of disability had remained constant at 2014 levels, the employment rate would have risen to 76.9% in 2022, 1.3pp higher than its actual level in that year (the blue line). This difference is similar in magnitude to how much

lower the employment rate would have been had there been no improvement in education levels (the yellow line).

Figure 6.9 - Overall employment rate: Counterfactual trends



6.6 Conclusion

The trends in disability and employment seen over the last decade may at first sight seem difficult to reconcile. There has been a sharp rise in disability prevalence but this has paradoxically been accompanied by increased employment, among both disabled and non-disabled people, together with a shrinkage of the DEG. The suggestion that the upward trend in disabled people’s employment is an artefact of more people identifying as disabled due to mild mental health conditions is not borne out by the data. While more disabled people are now reporting a less severe impairment (leading to higher employment), they are also more likely to report mental rather than physical health conditions (leading to lower employment).



Overall therefore, changing health has not affected the employment of disabled people (or, less surprisingly, non-disabled people). As a result, the narrowing in the DEG cannot be attributed to the changing health composition of the population. Instead, education emerges as the key factor behind rising employment, especially of disabled people, and a fall in the DEG.

But while changes to health have not affected the separate employment rates of disabled and non-disabled people, they have played an important role in limiting overall employment growth in the UK, particularly since the start of the pandemic. Without the deterioration in population health, we estimate that the employment rate in 2022 would have been 1.3pp higher than pre-pandemic, instead of remaining roughly the same. Without the expansion of education, the 2022 employment rate would have fallen back to 2017 levels.



7 Implications for policy

Despite some reduction in the DEG over the past decade, it remains stubbornly high overall and is higher still in some ‘left behind’ local areas. While our analysis has not evaluated specific policies, we can identify the following priorities for policy and relate them to specific proposals from recent policy research (notably McCurdy and Murphy, 2024; and Phillips, 2024):

1. There should be long-term goal to eliminate the educational disparities between disabled and non-disabled people. Our estimates suggest this could close the DEG by 12%. It appears that improved education is already helping to close the DEG, explaining a third of the reduction since 2014 but there is much more to be done

2. The immediate focus should be on making sure all adults have some qualifications. The DEG is largest for people with no qualifications; eliminating this educational deficit could close the DEG by 6%. Since 2015, all young people in England must continue to participate in education until age 18. While this does not guarantee that everybody leaves full time education with a qualification, over time it should reduce the number of working age adults in this position and limit the intersectional disadvantage of being disabled and having no qualifications. However, significant extra support will almost certainly be needed given the very low pass rates among students retaking their failed English and maths GCSEs (McCurdy and Murphy, 2024). Further targeted investment will also be required to enable disabled people to attain higher level qualifications at the same rate as non-disabled people. Initiatives such as the Lifetime Skills Guarantee (offering funded Level 3 qualifications) can help but it is not sufficient simply to expand the supply of education and training to create opportunities for disabled people to study; many disabled students at the margins will need additional support to achieve these qualifications, relative to the support required by existing student caseloads.



For young people up to age 25, the support offered by local authorities through Education, Health and Care Plans could be strengthened.

3. Structural barriers, evident via the DEGs that exist among people with the same education levels, remain a significant challenge. As we have outlined, there are a number of reasons for these structural barriers, which call for specific policies to address discrimination and other demand-side factors. Given the evidence that some existing policies have not been effective new policies will need to be supported by further research; see for example the results from the evaluation of the Health-led Employment Trial ([Department for Work and Pensions, 2022](#)).¹⁰ [Hoque et al. \(2024\)](#) concluded that the Disability Confident employer accreditation scheme was ineffective, and there is a strong case for reform through increasing expectations and obligations on employers (Phillips, 2024). In contrast, the Access to Work scheme (providing grant for aids and equipment) is well regarded but is plagued by long delays (Phillips, 2024). Furthermore, within employers, there is a need for higher levels of disability awareness, both to tackle negative perceptions at the hiring stage, and to facilitate reasonable adjustments on the job. For disabled people not in employment, an area of low hanging fruit could be policies aimed at those expressing clear a preference to work or with employment experience in the last five years. Among these groups there is still a DEG of 14-17pp that is dominated by structural barriers. Successful policies here could hold lessons for the DEG more generally.

4. On the supply side, there should be an intensified focus on addressing mental health conditions. The mental health DEG is more than a third larger than the physical health DEG, and its contribution to the overall DEG is getting bigger. The relentless increase in mental

¹⁰ The Health-led Employment Trial was an RCT of Individualised Placement Support carried out in two areas. While in the West Midlands Combined Authority there was a significant positive effect on employment rates, there was no effect in the Sheffield City Region, and when all the data was pooled, there was no evidence of a significant effect.



health disability is preventing overall employment from exceeding its pre-pandemic levels. Tackling emerging mental health problems among young people is key, for example by addressing the under-provision of Mental Health Support Teams in FE colleges (McCurdy and Murphy, 2024).

5. At the local level, policies to reduce spatial inequalities are also potential tools to narrow the DEG. Attracting high value investment in the knowledge sector (IT, finance, professional services and education) to left behind areas in Scotland, Wales and the north of England could help to boost the employment prospects of disabled people to a greater extent than their non-disabled counterparts, even if this employment is not concentrated in the most high-skilled occupations.

6. Policies to promote investment need to be accompanied by bespoke interventions that target the specific local barriers to disabled people’s employment. Recent proposals to empower local leaders to develop work, health and skills plans offer a way forward here, although there are already some existing examples, such as Working Well in Manchester, Working Win in South Yorkshire and Thrive into Work in the West Midlands (Phillips, 2024).¹¹ As part of the 2024 Budget, the government announced the Connect to Work supported employment programme for disabled people, which local authorities will be able to tailor to local needs.¹²

¹¹ See the UK government’s announcement at: www.gov.uk/government/news/kendall-launches-blueprint-for-fundamental-reform-to-change-the-dwp-from-a-department-of-welfare-to-a-department-for-work

¹² See <https://www.gov.uk/government/publications/autumn-budget-2024/autumn-budget-2024-html>



8 Conclusion

There is long standing interest in the UK in improving the employment opportunities of disabled people. In 2017, the previous UK government set a target to get one million more disabled people into work by 2027 (**Department for Work and Pensions & Department of Health, 2017**). The fact this target was achieved in 2022 might be taken as evidence of rapid progress.¹³ However, a target defined in terms of absolute numbers will also be sensitive to the state of the economy, size of the workforce and the prevalence of disability (**Jones and Wass, 2020**). It is clear that all of these factors have helped boost the number of employed disabled people since 2017: employment for all workers, not just disabled people, has increased, the workforce has expanded, and disability has risen across the board, but especially among employed people. It is not therefore surprising that the number of employed disabled people appears to be at record levels.¹⁴

A more demanding target uses a relative measure, comparing disabled and non-disabled people, and is expressed in terms of employment *rates* not absolute *levels*. This measure is the DEG, which has been the focus of this report. Indeed a previous government commitment in 2016 was to halve the DEG (**Department for Work and Pensions & Department of Health, 2016**). However, as shown in **Chapter 6**, while the employment rate of disabled people has grown faster than non-disabled people, and hence the DEG has shrunk, the reduction was from 30.8pp in 2016 to 26.7pp in 2022, a reduction of just 4.1pp or 13% – a long way from the 50% target. It is unclear why the original commitment was dropped, or whether a 50% reduction was the right target (discussion of the ‘optimal’ DEG is beyond the scope of this report). What

¹³ www.gov.uk/government/news/government-hits-goal-to-see-a-million-more-disabled-people-in-work

¹⁴ Source: ONS, Table A08, Equality Act definition of disability. In April-June 2024, there were 5.4m employed disabled people of working age in GB, compared with 4.1m in April-June 2020 and 3.0m in April-June 2014. Caution is needed due to a discontinuity in the data from July-September 2022, but this appears much smaller than the strong upward trends observed on either side.
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/labourmarketstatusofdisabledpeoplea08>.



is clear is that it remains an ambitious goal. We have suggested that achieving parity of education between disabled and non-disabled people could close the gap by a similar amount to the fall since 2016 (amounting to a hypothetical 25% reduction from 2016). But further significant reductions will require addressing the structural inequalities that prevail in the labour market.

As well as the national DEG, we have identified large geographic differences, with the biggest gaps to be found in areas already left behind in other ways. Our results suggest that reducing the DEG should be part of a policy response that goes beyond measures specifically targeted towards disabled people. Policies to boost local investment in the knowledge sector, for example, could do just as much to improve the employment prospects of disabled people. Local areas with high DEGs due to place effects could be the priorities for action.

While there has been limited progress in reducing the DEG, it should be noted that the overall employment rate in the UK is historically high (partly due to an improvement in education levels as we have shown). However, it has plateaued and may have fallen slightly since the pandemic, with a corresponding rise in economic inactivity ([OBR, 2023](#)). The rise in economic inactivity due to long-term sickness (of 444,000 by 2023; [OBR, 2023](#)) has generated much debate and analysis, although some of the gross increase includes people who were previously inactive for other reasons ([Cribb, 2023](#)). Nonetheless, the net increase in inactivity for all reasons is still 350,000, corresponding to an increase in the inactivity rate of 0.5pp ([OBR, 2023](#)).

While not the whole story, an increase in the prevalence of disability among the working age population is contributing to these trends. The recent growth in the incidence of disabling mental health conditions among younger adults presents a particular concern, highlighting the ongoing need for targeted support to improve the mental health of working age people, whether in work or not. This will not only benefit the health of the nation for its own sake but could also deliver significant economic returns through enabling more people to access sustainable employment



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Appendix A - Membership of Advisory Group

Stephen Aldridge	Ministry of Housing, Communities & Local Government
Christina Beatty	Sheffield Hallam University
Mark Burley	Department for Work and Pensions
Catherine Dennison	Nuffield Foundation
Mark Gabbay	University of Liverpool
Melanie Jones	Cardiff University
Kathryn Littlewood	Disability Sheffield
James Manning	Department for Work and Pensions
Craig Moss	Scope
Tom Pollard	New Economics Foundation
Nigel Rice	University of York
Leticia Veruete-McKay	Scope



Appendix B – Variables and Data sources

Variable	Source	Description
<u>Individual characteristics</u>		
Sex	Annual Population Survey (APS)	Dummy variable: Female = 1.
Age group	APS	Four dummy variables: Age 16-24; 25-34; 35-49; 50-64.
Marital status	APS	Dummy variable: Married = 1 if married, cohabiting or in a civil partnership.
Children	APS	Four dummy variables: Any dependent children aged under 2; 2-4; 5-9; or 10-15.
Sex and family interactions	APS	Five dummy variables: Female interacted with married; children aged under 2, 2-4, 5-9 and 10-15.
Ethnicity	APS	Six dummy variables: White; Mixed/multiple ethnic groups; Indian; Pakistani; Black/African/Caribbean/Black British; Other.
Education	APS	Eleven dummy variables denoting highest qualification attained: Degree; Level 4+ vocational; AS/A levels; Level 3 vocational; Apprenticeship; GCSEs grade A*-C; Level 2 vocational; GCSEs grade D-G; Level 1 vocational; Other; No qualifications.
Employment status of partner	APS Household dataset (Office for National Statistics, 2021a)	Two dummy variables: Whether partner is unemployed; Whether partner is economically inactive. Non-married people are coded 0 on both of these variables.
Housing tenure	APS	Five dummy variables: Owned outright; being bought with mortgage or loan; part rent, part mortgage; rented; rent free.
Urban	APS	Dummy variable denoting whether the person lives in an urban area, derived from residency details.
<u>Area characteristics</u>		
Unemployment rate	NOMIS (Office for National Statistics, 2022a)	Average unemployment rate for people aged 16-64 over the six calendar years 2014 to 2019.
Gross Value Added (GVA) per hour worked	ONS Subregional Productivity release (Office for National Statistics, 2021b)	Nominal (smoothed) GVA per hour worked in pounds: average of the six years 2014 to 2019.
Share of employment by sector	2011 Census sourced from NOMIS (Office for National Statistics, 2011)	Proportion of the employed population working in Manufacturing (industry section C); Other production (A, B, D, E and F); Knowledge services (J, K, M and P); and Other services (G, H, I, L, N, O, Q, R, S and T). These groupings follow Department for Business, Innovation and Skills (2012) .
Share of employment by occupation	2011 Census sourced from NOMIS (Office for National Statistics, 2011)	Proportion of the employed population working in Level 4 occupations (SOC codes starting in 11 and 2); Level 3 occupations (starting in 12, 3 and 5); Level 2 occupations



Homeworking index	2011 Census sourced from NOMIS (Office for National Statistics, 2011) combined with ONS data on ‘ability to homework’ ¹⁶	(starting in 4, 6, 7 and 8); and Level 1 occupations (starting in 9) respectively. This classification is provided by the ONS. ¹⁵ Each four digit SOC code has an ‘ability to homework’ index where higher scores denote the occupation as being less suitable for homeworking. This information was used to calculate a weighted average homeworking score for each ITL3 area based on the concentration of occupations in that area.
Flexibility index	2011 Census sourced from NOMIS (Office for National Statistics, 2011) combined with UKHLS (University of Essex, 2021)	For each employed individual in Wave 10 of Understanding Society: The UK Household Longitudinal Study (UKHLS), we count how many flexible working arrangements are available to them (max 10) and also observe the industry section and occupation in which they work. This information was used to calculate a weighted average flexibility score for each ITL3 area based on the concentration of industry and occupation combinations in that area.
Autonomy index	2011 Census sourced from NOMIS (Office for National Statistics, 2011) combined with UKHLS (University of Essex, 2021)	For each employed individual in Wave 10 of UKHLS, we count how many areas of work in which they have at least some autonomy (max 5) and also observe the industry section and occupation in which they work. This information was used to calculate a weighted average autonomy score for each ITL3 area based on the concentration of industry and occupation combinations in that area.
GPs per 1,000 population	England: NHS Digital (2021) ; Wales: StatsWales (2020) ; Scotland: Public Health Scotland (2021) . All combined with population estimates from Office for National Statistics (2022b)	Average number of GPs in post between 2015 and 2018 per 1000 population. Note that some ITL3 areas in England and Wales have identical scores on this measure due to Clinical Commissioning Groups and Health Boards (the available spatial units for GP headcount data in England and Wales respectively) spanning more than one area.
Social Fabric Index	Onward (Tanner et al., 2020)	Index composed by Onward from a multitude of indicators across the four themes of economic value, relationships, positive norms and physical infrastructure.
Public transport	Department for Transport (2021) Journey Time Statistics (England only)	Average of the ratio of journey time by public transport and walking by the journey time by car to the nearest employment centre with more than 5,000 jobs available. ¹⁷

¹⁵

www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassification/soc/soc2020/soc2020volume1structureanddescriptionofunitgroups (Table 1) [Accessed 4 Dec 2023]

¹⁶

www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/whichjobsobscanbedoneathome/2020-07-21 [Accessed 8 December 2023]

¹⁷ Three other public transport indicators were also generated: Average journey time by public transport and walking to nearest employment centre with (i) at least 5,000 jobs (ii) between 500 and 4,999 jobs (iii) between 500 and 4,999 jobs.



Disability Confident employers per 1,000 businesses	List of Disability Confident employers (Department for Work and Pensions, 2018) combined with UK Business Counts (Office for National Statistics, 2021c)	Number of employers that have progressed to the second (Employer) and third (Leader) levels of the Disability Confident scheme as a proportion of all businesses in the area.
Universal Credit sanctions rate	Department for Work and Pensions Stat-Xplore resource ¹⁸	Number of sanctions applied as proportion of total caseload of Universal Credit claimants between April 2019 and March 2020.

¹⁸ www.stat-xplore.dwp.gov.uk



Appendix C - List of Project Outputs (to date)

All outputs are available from the project website:

www.sheffield.ac.uk/economics/research/impact-and-knowledge-exchange/unpacking-disability-employment-gap

Working Papers

- Bryan M, Bryce A, Roberts J, Sechel C (2024) *The geography of the disability employment gap: exploring spatial variation in the relative employment rates of disabled people*. Sheffield Economics Research Paper Series No. 2024002.
- Bryan M, Bryce A, Roberts J, Sechel C (2024) *The role of education in the disability employment gap: exploring spatial variation in the relative employment rates of disabled people*. Sheffield Economics Research Paper Series No. 2023010.

Policy Briefs

- Policy Brief (May 2023) *The role of education in the disability employment gap*.
- Policy Brief (June 2024) *The geography of the disability employment gap*.

Other Outputs

- End of Project Event (June 2024): Unpacking the Disability Employment Gap, Nuffield Foundation London. (Slide-pack and video recording available).
- Infographic: *Unpacking the disability employment gap*.
- Visual Summary: *The disability employment gap: Evidence from the UK*.
- Written evidence to the *Work and Pensions Committee Inquiry on the disability employment gap*, December 2020.
- Written evidence to the Senedd Cymru (Welsh Parliament) *Equality and Social Justice Committee inquiry into the disability employment and payment gap*, August 2024.
- Oral evidence given to an evidence session of the Senedd Cymru (Welsh Parliament) *Equality and Social Justice Committee inquiry into the disability employment and payment gap*, September 2024.



Appendix D - Literature search methods

As a first step in our attempt to produce a detailed breakdown of the DEG into its key explanatory factors, we conducted an extensive literature review to understand the existing research and to explore the factors known to affect the employment rates of disabled people. The main aim was to develop a typology of explanatory factors for the DEG, related to their policy context; a secondary aim was to help identify the data sources we could use to measure the range of explanatory factors in our quantitative analyses.

We searched two main citation databases, Econlit and Scopus. Econlit is a leading database for academic literature in economics and related studies published by the American Economic Association.¹⁹ Scopus is a much broader database published by Elsevier that covers literature from life sciences, social sciences, physical sciences and health sciences.²⁰ We supplemented these searches with a search of the ‘grey literature’ using the Overton, the world’s largest searchable policy document and ‘grey literature’ database.²¹

We searched the Econlit database on 1st October 2021 for papers with the term “disab” in the abstract along with at least one of the following labour market related terms: “employment”, “work”, “labor”, “labour”, “job”, “occupation”. We did not restrict the time horizon but we excluded non-English language citations. This produced a total of 1650 hits, the earliest publication being from 1986; the latest available publication date at the time of the search was 23rd September 2021. We selected the relevant publications from the 1650 search results firstly by reviewing titles and abstracts divided equally among the team. We broadly selected all papers that we deemed to be related to disability and employment, distinguishing between those that we thought were directly relevant to the research question and those that we considered peripheral. A second team member checked the initial selection. As a team we then classified the selected papers. The focus was mainly on identifying factors that could affect the

¹⁹ www.aeaweb.org/econlit/

²⁰ www.scopus.com/home.uri

²¹ www.overton.io/



disability employment gap in the UK, but we also classified papers we deemed to be important for the project in other ways. For example, papers that addressed disability measurement issues. We included both quantitative and qualitative evidence from all countries, as well as theoretical and methodological papers. We grouped factors into four broad categories: supply side, demand side, policy, and other.

After classifying the literature from Econlit, we carried out a similar search of the Scopus database. Each team member was responsible for selecting and classifying a share of the search results based on titles and abstracts. The starting point was the Econlit classification but we added categories to the list of factors as needed, given the broader range of literature in Scopus.

Finally, as a team, we combined the Econlit and Scopus literature and refined the classification. Our final literature catalogue included 755 publications and 42 factors relevant for explaining the DEG. There are: 14 supply side factors e.g. age, education, preferences; 15 demand side factors, e.g. employer attitudes, nature of jobs available, discrimination; 6 factors related to policy, e.g. active labour market policies, national disability discrimination policy; and 7 ‘other’ factors e.g. housing, transport accessibility). The full classification of factors is listed in **Appendix E**. Throughout the project we have continually updated these literature searches adding new papers as they have become available.

Our search of the Overton database was limited to UK sources as of 13 June 2022. We ran a search for the term “disability employment gap”, including publications, working papers, and blog posts²², which returned 621 results ranging between 2006 to 2022 from 55 different sources²³. The majority came from: UK Parliament Select Committee Publications, GOV.UK publications, The Scottish Government, and UK Parliament Research Briefings. The rest of the results included publications from research institutes (such as the Institute for Employment

²² We excluded transcripts and clinical guidance from our search as these types of sources included documents that were largely irrelevant for our analysis.

²³ We also ran a further search with the same parameters but using the term “disability employment” instead, which returned 1,372 results from 73 sources.



Studies), think tanks (e.g. the Resolution Foundation and Demos), and local government (e.g. Greater Manchester Combined Authority).



Appendix E - Taxonomy of factors affecting the DEG

The following typology of factors was derived from the literature review described in Appendix D.

SUPPLY

Age
 Gender/sex
 Ethnicity
 Household composition/effects
 Education
 Experience/skills/training
 Health/health shocks
 Income/wealth/socio-economic status
 Childhood experiences/family background
 Preferences
 Availability of healthcare
 Family support/social networks
 Heterogeneity of disability
 Occupation type

POLICY

Employer subsidies/incentives
 Disability insurance/benefits
 Strictness of screening (in the benefits system)
 National disability discrimination policy
 Employment quotas
 Active labour market policies

DEMAND

Job accommodations
 Collective bargaining/trade unions
 Public/private sector
 Industrial sector
 Nature of jobs available
 Part time work/shift work
 Discrimination
 Employer size
 Employer/coworker attitudes
 Home working
 Self-employment
 Temporary/gig work
 Labour market tightness
 Labour market structure
 Work demands

OTHER

Macroeconomic conditions
 Transport/commuting
 Housing
 Spatial effects
 Theory of disability
 Inclusive workplace cultures
 Digital connectivity



Appendix F – Classification of health conditions in APS

Description of condition	Mental or physical? (see Munford et al. 2016)
Problems or disabilities (including arthritis or rheumatism) connected with arms or hands	Physical
Problems or disabilities (including arthritis or rheumatism) connected with legs or feet	Physical
Problems or disabilities (including arthritis or rheumatism) connected with back or neck	Physical
Difficulty in seeing (while wearing spectacles and contact lenses)	Physical
Difficulty in hearing	Physical
A speech impediment	Physical
Severe disfigurement, skin conditions, allergies	Physical
Chest or breathing problems, asthma, bronchitis	Physical
Heart, blood pressure or blood circulation problems	Physical
Stomach, liver kidney or digestive problems	Physical
Diabetes	Physical
Depression, bad nerves or anxiety	Mental
Epilepsy	Physical
Severe or specific learning difficulties (mental handicap)	Mental
Mental illness, or suffer from phobia, panics or other nervous	Mental
Progressive illness not included elsewhere (e.g. cancer, multiple sclerosis, symptomatic HIV, Parkinson's disease, muscular	Physical
Other health problems or disabilities	Other