


ARTICLE

# The Impact of Employer Characteristics on Sustaining Employment for Workers with Reduced Capacity: Evidence from Norwegian Register Data

Julie Ulstein 

Work Research Institute, Oslo Metropolitan University, Oslo, Norway  
Email: [Julie.Ulstein@Oslomet.no](mailto:Julie.Ulstein@Oslomet.no)

Both literature and public policy on work inclusion has shifted towards the demand-side, which recognises that employer engagement is crucial to increase labour market participation and sustained employment for vulnerable groups. Research shows, however, that the implemented demand-side policies have been less than effective. This opens a discussion about barriers to implementation in terms of relevant employer characteristics. By use of Norwegian register data, this article estimates the impact of employer size and extent of implemented disability policies on probability of sustaining employment for workers with reduced capacity, finding that employer size negatively impacts probability of sustaining employment. Extent of implemented disability policies positively impacts probability of sustaining employment, irrespective of employer size. I argue that systematically considering these characteristics can help identify how and where to improve the position of workers with reduced capacity and discuss the implications for public policy.

**Keywords:** Demand-side policy, employer characteristics, sustained employment, work capacity, work inclusion.

## Introduction

Workers with reduced capacity have lower labour market participation compared to the population average (OECD, 2010; Eurostat, 2022). This has great social and economic consequences. From a social perspective, sustained labour market participation can facilitate economic independence, improved health, and social inclusion (van der Noordt *et al.*, 2014; De Witte *et al.*, 2016). From an economic perspective, sustained labour market participation can limit social benefits expenditure while filling labour market shortages (Whitehead, 2010; Clayton *et al.*, 2012). Governments have tried to increase and sustain group level labour market participation through supply-side active labour market policies (ALMPs), which have aimed at increasing individual employability (OECD, 2010; McCollum, 2012; van der Aa and van Berkel, 2014; Ingold and Stuart, 2015; Frøyland *et al.*, 2019). This has proved insufficient to increase and sustain group level labour market participation (Eichhorst and Konle-Seidl, 2008; Kluge, 2010; Ingold and Stuart, 2015; Lahey *et al.*, 2019). As a result, public policy in European welfare states has shifted to demand-side policies (Böheim and Leoni, 2018) that aim to engage employers to include workers with reduced capacity, and people from other vulnerable groups (McCollum, 2012; van der Aa and van Berkel, 2014; Borghouts-van de Pas and Freese, 2017; Böheim and Leoni, 2018).

The implemented policies vary greatly between countries. Many have tried to directly regulate recruitment of people with disabilities through the implementation of quota, for which non-compliance is economically sanctioned (e.g. Germany, France, Austria, Belgium, Italy, Spain, and Poland) (Vornholt *et al.*, 2018). Governments in Scandinavia have tried to facilitate and

incentivise recruitment and sustained employment for people from vulnerable groups by offering wage subsidies, training programs and support at the workplace (Gustafsson *et al.*, 2013; Bredgaard and Halkjær, 2016; Castillo, 2019; Østerud, 2020; Østerud and Vedeler, 2022). Additionally, Norway has implemented a soft quota for state employers to increase the labour market participation of people from vulnerable groups (Østerud, 2020; Østerud and Vedeler, 2022). The Netherlands has combined direct regulation and incentives through requirements of job creation earmarked for people with disabilities, the implementation of quota, and by offering wage subsidies (Borghouts-van de Pas and Freese, 2017; van Berkel, 2021).

Despite a high number of implemented demand-side policies throughout Europe, the impact of the policies appears to be mixed. Studies on the effect of demand-side policies on employment opportunities for people remote from the labour market show that the policies have had low uptake with employers (Bredgaard and Halkjær, 2016; Bredgaard, 2018; Østerud, 2020; Østerud and Vedeler, 2022); found no association between implemented policies and probability of employment for people with disabilities (Reinders Folmer *et al.*, 2020); or have been challenging to implement and realise in workplaces (Castillo, 2019; van Berkel, 2021). This opens a discussion about the barriers to implementation, not only in terms of policy characteristics (Gustafsson *et al.*, 2013; Bredgaard and Halkjær, 2016; Borghouts-van de Pas and Freese, 2017; Vornholt *et al.*, 2018; Castillo, 2019; Østerud, 2020; van Berkel, 2021; Østerud and Vedeler, 2022) but in terms of characteristics of employers that are relevant for effective implementation. More knowledge is needed on how demand-side policies can be implemented effectively to allow for a more targeted focus for where and how the policy impact and position of workers with reduced capacity can be improved. This article aims to gain these insights by studying the impact of employer characteristics on sustaining employment for workers with reduced capacity. Using comprehensive Norwegian register data from 2003-2017, this study aims to answer the following research question: How does employer size and extent of implemented disability policies impact sustaining employment for workers with reduced capacity?

## Literature review

The scope of the literature on the impact of employer characteristics on sustained employment is limited. Most previous research has focused on how employer characteristics affect workers with reduced capacity in returning to work (RTW), while a few have studied how employer characteristics affect continued employment. For employer size, the evidence is inconsistent (Jansen *et al.*, 2021). Some studies found that working for a large employer is positively associated with RTW, retention, or continued employment (Hannerz *et al.*, 2012; Prang *et al.*, 2016; Schneider *et al.*, 2016; van Ooijen *et al.*, 2021); others found that working for a smaller employer is positively associated with early RTW or continued employment, or that small workplaces had lower entry into certified absence (Faucett *et al.*, 2000; Krause *et al.*, 2001; Holm *et al.*, 2007; Markussen *et al.*, 2011); or no association was found at all (Cooper *et al.*, 2013; Høgelund and Holm, 2014; Bacon and Hoque, 2022). The inconsistent evidence can probably be partially explained by different definitions of employer sizes between studies, as definitions can vary according to national standards. As a result, there is great variation in what is referred to as large and small employers.

Theoretically, large employers have resources to provide accommodations, formalised routines and practices, and often an HR-department, all of which can contribute positively to sustaining employment for workers with reduced capacity (Goss *et al.*, 2000; Borghouts-van de Pas and Freese, 2017; Beatty *et al.*, 2019; Hyggen and Vedeler, 2021; Bacon and Hoque, 2022). This is, however, the opposite of what Stone and Colella (1996) predicted in their model of factors affecting treatment of people with disabilities in workplaces. They highlight that workplaces with bureaucratic and standardised procedures can be disadvantageous for people with disabilities, because people with disabilities might not be able to comply with the set standards and rules

(Stone and Colella, 1996). Others contend that small employers provide benefits of high informality, personalised treatment, more flexibility in terms of working hours and tasks, and greater job autonomy because of few bureaucratic obstacles (Tsai *et al.*, 2007; Storey *et al.*, 2010; Harney and Alkhalaf, 2021; Bacon and Hoque, 2022). These are factors that can facilitate personalised and flexible adjustment that might be necessary for workers with reduced capacity to sustain employment. As a result, there are theoretical reasons to expect both smaller and larger employers to contribute positively to sustaining employment for workers with reduced capacity.

At the same time, the inconsistent evidence on the effect of employer size on RTW or continued employment could be partially explained by other factors not considered in previous research. Several studies have found that extent of implemented disability policies is associated with RTW and continued employment (Williams and Westmorland, 2002; Gensby *et al.*, 2014; Jakobsen and Lillefjell, 2014; Amick *et al.*, 2017; Beatty *et al.*, 2019; van Ooijen *et al.*, 2021). Disability policies often come in terms of practices, routines, and guidelines for how to hire, retain and accommodate workers with reduced capacity (Beatty *et al.*, 2019). Employer specific policies can be formulated from official (governmental) regulations (e.g. anti-discrimination laws), or organisational goals or missions related to inclusion and treatment of workers with reduced capacity. The degree of policy driven regulation often increases with employer size (Storey *et al.*, 2010; Bacon and Hoque, 2022) to meet the demands of a more complex organisation. Following this, large employers can have a higher extent of implemented disability policies (Chan *et al.*, 2021; Bacon and Hoque, 2022). At the same time, smaller employers, though maybe lacking the same extent of implemented (disability) policies, can develop ad hoc policies and practices when the question for how to accommodate and retain workers with reduced capacity arises (Harney and Dundon, 2006; Storey *et al.*, 2010; Lindsay *et al.*, 2019). Extent of implemented disability policies could therefore partially explain the inconsistent evidence on the effect of employer size on RTW, continued employment, and sustained employment for workers with reduced capacity.

Examining how employer size and extent of implemented disability policies impacts probability of sustaining employment for workers with reduced capacity contributes to the existing literature in two ways. Firstly, it can help clarify the relationship between employer size and extent of implemented disability policies and probability of sustaining employment for workers with reduced capacity. Secondly, it can contribute to understanding under which labour market conditions workers with reduced capacity face the lowest and highest chances of sustaining employment. Identifying these conditions can help guide policymakers in which employers to target when designing and implementing demand-side policies. Demand-side policies that target employers displaying characteristics that negatively impact sustaining employment can contribute to more effectively increasing group level labour market participation and sustained employment for workers with reduced capacity.

Register data is well suited to study the impact of employer characteristics on probability of sustaining employment, as the coverage of almost two decades allows for the consideration of complete employment records with the same employer after entry to a disability benefits system. With these records I construct a proxy measure for extent of implemented disability policies. The measure assumes that employers where workers with reduced capacity have a high mean employment duration after entry to disability benefits are better at accommodating and facilitating the workers, indicating a higher extent of implemented disability policies. Additionally, I consider how industry, sector, and workforce composition in terms of gender, age, mean wage, and education within employers impact the probability of sustaining employment for workers with reduced capacity.

### The Norwegian case

Norwegian demand-side policy differs from the direct regulation of central-European policy. In 2001, Norway implemented the Inclusive Work Life agreement that sought to reduce sick leave

absence and improve work retention for people with ill health, disabilities, or reduced work capacity (Mandal and Ose, 2015; Hyggen and Vedeler, 2021). The agreement was voluntary until 2019, after which participation in the agreement became mandatory for both public and private employers. In 2017, government launched a new policy agenda, the 'Joint Inclusion Effort' (Inkluderingsdugnaden), that introduced a soft quota for state employers, requiring 5 per cent of all new recruitments to be made from vulnerable groups (Østerud, 2020; Østerud and Vedeler, 2022). Non-compliance is, however, not sanctioned, and no regulations were imposed on private employers. Additionally, Norwegian government has offered extensive support to employers to increase inclusion and retention for workers with reduced capacity (Aakvik and Dahl, 2006; Clayton *et al.*, 2012).

Despite Norway's extensive policy interventions, a disability employment gap of 34.5 per cent remains, which is 12 percentage points higher than the EU average (Eurostat, 2022). In a study on employer participation in ALMPs, Hyggen and Vedeler (2021) found no association between employers participating in the Inclusive Work Life agreement and probability to hire young people remote from the labour market. In studies on the uptake of the 'Joint Inclusion Effort' with state employers, Østerud (2020) found that only 3.1 per cent fulfil the employment quota. Østerud and Vedeler (2022) found that state employers remain passive in hiring, despite having positive attitudes towards the soft quota. As the implemented policies have been less than effective, more knowledge is needed on what impact employer characteristics have on sustaining employment for workers with reduced capacity.

## Methods

### Data

I used Norwegian population register data from 2003-2017 obtained from Statistics Norway. Norwegian register data is generally considered to be of high quality. An evaluation of employment register data at the micro level shows that the registers systematically overestimate employment rates, but that the agreement between survey data and register data on employment rates is high (Villund, 2010). The dataset used for analysis was compiled from multiple registers from Statistics Norway, on linked employer-employee (LEE) records, disability benefit records, demographic records, and educational records.

### Sample

The sample of workers with reduced capacity consists of workers that enter disability benefits at different timepoints. The sample was identified by extracting the first record of entry to a disability benefits system between 2003 and 2017. Entry records to disability benefits were extracted from four different disability benefit registers, consisting of medical rehabilitation benefits, temporary disability benefits, work assessment allowance (AAP, replacing the two former benefits as of 2010) and disability pensions. The three first benefits are temporary disability benefits systems. For eligibility, work capacity must be reduced by at least 50 per cent due to injury or ill health. For work-related injury, reduced work capacity of 30 per cent is sufficient. Additionally, work capacity of AAP recipients must be improvable, either through treatment, accommodated work, or through counselling from Norwegian Labour and Welfare administration (NAV). Disability pensions are permanent benefits for individuals with permanently reduced work capacity. The inclusion criterion for the analysis was that the individuals with reduced work capacity had a job at the time of entry to disability benefits. Individuals that had no residual work capacity and under eighteen years of age were excluded. This led to a sample of 46 306 observations (single episode data), that were followed for the duration of the employment record after entry to disability benefits. The sample consisted of two groups of workers with reduced capacity: one group entered directly

to a disability benefits system ( $n=6690$ ), while the other group had been on sick leave before entry ( $n=34896$ ). The sick leave registers did not contain data for 2017, for which group membership is undetermined ( $n=4720$ ). For a linear probability model (LPM) that predicts group membership, see supplementary material [S1](#).

### **Dependent variable**

The dependent variable, employment ending, is binary and defined as whether employment ends in the observed month after entry to disability benefits (1) or not (0). Observations for which employment does not end in the entirety of the observation period are right-censored. A long employment period after entry to disability benefits indicates sustained employment.

### **Independent variables**

#### *Employer characteristics*

I used the LEE-records to construct aggregated employer characteristics from individual-level variables, which are time invariant within employers, within years. For employer size, three categories were distinguished following the EU definition: small, medium, and large employers (see table 1) (EU Commission, 2003). Micro ( $<10$  employees) and small ( $>9$  and  $<50$  employees) employers were combined into one category due to a small sample of micro employers ( $n=1558$ ). The proxy measure for extent of implemented disability policies was inspired by the proxy measure used by van Ooijen *et al.* (2021). I defined the proxy measure as the mean employment duration in months of co-workers with reduced capacity after entry to disability benefits within the same employer, in the same year (mean= $25.88$ , SD= $28.02$ ). Mean employment duration after entry to disability benefits can indicate the degree to which employers are able to accommodate and retain workers with reduced capacity. This is likely reflected in implemented disability policies and practices within employers. The measure therefore assumes that employers with a high mean employment duration for co-workers with reduced capacity have a higher extent of implemented disability policies. The measure is restricted to co-workers to avoid individual employment duration becoming predictive of individual sustained employment. As a result, only employers with at least two workers with reduced capacity are included in the sample. The measure was divided into quartiles. The first quartile ranges from one to six months, the second quartile from six to eighteen months, the third quartile from eighteen to thirty-four months, and the highest quartile from thirty-four to 180 months. Age composition was defined as the fraction of workers over forty-five years of age. Gender composition was defined as the fraction of female employees. Education composition was defined as the fraction of workers with higher education (short university degree or long university degree). Wage composition was defined as the mean wage of all employees, within employers. The composition variables were split into quartiles. Observations with missing information on the aggregated measures were excluded within employers. Industry and sector were retrieved from employment registers. Industry was based on SN2002, which distinguishes eighteen categories for industry. Categories were combined to reduce model complexity, resulting in seven industry categories (see table 1). Sector distinguished between public (0) and private (1) employers. Observations on industry and sector with missing information were excluded.

#### *Individual characteristics*

Individual characteristics were included to control for the impact of individual characteristics on sustaining employment for workers with reduced capacity. Sex (binary), age (continuous), education (binary, 0 = no university degree, 1 = short or long university degree), marital status (binary), wage (quartiles), and time on disability benefits (continuous) were included in the analysis. All variables were defined in terms of the value of the observation at the time of entry to

**Table 1** Summary statistics

| Employer characteristics                 | % N   | Event | Individual characteristics      | %N    | Event   |
|--|-------|-------|---------------------------------|-------|---------|
| Sector                                   |       |       | Sex                             |       |         |
| Public                                   | 48.98 | 53.96 | Male                            | 32.85 | 56.27   |
| Private                                  | 51.02 | 57.14 | Female                          | 67.15 | 55.24   |
| Industry                                 |       |       | Wage (quartile)                 |       |         |
| Agriculture, fishing, forestry           | 3.34  | 39.16 | Lowest                          | 25.00 | 69.02   |
| Manufacturing, electricity, water        | 14.20 | 58.25 | Second                          | 25.00 | 64.41   |
| Construction                             | 4.07  | 59.50 | Third                           | 25.00 | 54.34   |
| Wholesale, retail, financial services    | 15.13 | 60.96 | Highest                         | 25.00 | 34.55   |
| Hospitality, logistic, communication     |       |       | Education                       |       |         |
| Public administration, education, health | 20.08 | 51.15 | No university degree            | 72.92 | 57.93   |
| Household activities and other services  | 36.69 | 55.58 | Long or short university degree | 27.08 | 49.25   |
| Employer size                            |       |       | Marital status                  |       |         |
| Small <50                                | 27.56 | 56.24 | Unmarried                       | 60.66 | 57.93   |
| Medium <250                              | 39.40 | 56.82 | Married                         | 39.34 | 49.25   |
| Large >250                               | 33.04 | 53.55 |                                 |       |         |
| Gender composition (quartile)            |       |       | Continuous variables            |       | Mean SD |
| Lowest                                   | 25.01 | 56.76 | Mean employment duration        | 25.88 | 28.02   |
| Second                                   | 24.99 | 55.24 | Age                             | 40.05 | 9.23    |
| Third                                    | 25.01 | 55.33 | Time on benefits                | 20.83 | 20.40   |
| Highest                                  | 24.99 | 55.00 |                                 |       |         |
| Age composition (quartile)               |       |       |                                 |       |         |
| Lowest                                   | 25.23 | 84.05 |                                 |       |         |
| Second                                   | 24.87 | 68.56 |                                 |       |         |
| Third                                    | 24.90 | 45.39 |                                 |       |         |
| Highest                                  | 25.00 | 24.09 |                                 |       |         |
| Wage composition (quartile)              |       |       |                                 |       |         |
| Lowest                                   | 25.00 | 76.66 |                                 |       |         |
| Second                                   | 25.00 | 61.16 |                                 |       |         |
| Third                                    | 25.00 | 52.09 |                                 |       |         |
| Highest                                  | 25.00 | 32.40 |                                 |       |         |
| Education composition (quartile)         |       |       |                                 |       |         |
| Lowest                                   | 25.07 | 65.66 |                                 |       |         |
| Second                                   | 24.93 | 58.24 |                                 |       |         |
| Third                                    | 25.03 | 49.46 |                                 |       |         |
| Highest                                  | 24.97 | 48.94 |                                 |       |         |

*(Continued)*

Table 1 (Continued)

| Employer characteristics | % N    | Event  | Individual characteristics | %N     | Event  |
|--------------------------|--------|--------|----------------------------|--------|--------|
| Policy proxy (quartile)  |        |        |                            |        |        |
| Lowest                   | 25.07  | 65.14  |                            |        |        |
| Second                   | 25.45  | 54.12  |                            |        |        |
| Third                    | 25.26  | 38.27  |                            |        |        |
| Highest                  | 24.22  | 55.58  |                            |        |        |
| Observations             | 46 306 | 25 737 |                            | 46 306 | 25 737 |

Event = Percentage of sample that experienced (1) employment ending.

disability benefits. Observations with missing information on individual characteristics were excluded.

### Analytical strategy

To evaluate how employer characteristics affect sustaining employment for workers with reduced capacity, data was analysed using parametric proportional hazard (PH) models with gamma distributed shared frailty at the employer level (Gutierrez, 2002). Shared frailty models are models in which frailties (latent multiplicative effects on the hazard function) are shared among groups of individuals (Gutierrez, 2002). In the case of this study, frailty is shared among workers with reduced capacity within the same employer. The models therefore allow for estimating the risk of employment ending while accounting for intragroup correlation. Prior to model estimation, univariate analysis of all variables was conducted. For p-values lower than 0.25, variables were included. Categorical variables were evaluated in terms of log-rank tests and proportionality of Kaplan Meier curves. The proportionality assumption held visually, and all tests of equality between categories were significant. For continuous variables (age and time on disability benefits), p-values were obtained through proportional cox models. All variables had p-values below the 0.25 threshold. Parametric distribution was chosen based on model comparison of AIC and BIC statistics and Csnell pseudoresiduals (Blossfeld *et al.*, 2019: 226). The Lognormal distribution barely outperformed the Gompertz distribution in AIC and BIC statistics. The Gompertz distribution performed best through visual inspection of Csnell pseudoresiduals. Based on this, the Gompertz distribution was selected for analysis. For details on selection of parametric distribution, see supplementary material S2.

After selecting parametric distribution, backwards selection was performed to identify variables that did not contribute to the model. The individual characteristics immigration status and socio-demographic background, defined as highest parental education, were excluded. After identifying the final model for analysis, two main models were estimated: one model with employer size, and one with employer size and extent of implemented disability policies. Additionally, a model with an interaction between employer size and extent of implemented disability policies was estimated. The model was estimated as a robustness test to investigate whether the impact of extent of implemented disability policies on probability of sustaining employment varies with employer size. A limitation of using parametric hazard models with shared frailty is that with passing time the effect of the frailty on the population hazard increases while the effect of the covariates decreases (Gutierrez, 2002). With time, therefore, the effect of the covariates (e.g. employer size) becomes less of a factor and shared frailty within employers becomes more of a factor in determining the risk of employment ending (Gutierrez, 2002). Each parametric shared frailty model is therefore complemented with a proportional cox model to capture duration effects of employment without shared frailty.

## Results

Table 1 presents descriptive statistics for the sample of workers with reduced capacity. 55.6 per cent ( $n=25\ 737$ ) of workers with reduced capacity experience employment ending in the observation period. The average employer is in the private sector, in the household activities and other services industry, and is of medium size. For workforce composition in terms of gender, age, mean wage, and education, the percentage of workers experiencing employment ending (1) decreases from the lowest to the highest quartiles. The average worker with reduced capacity is female, forty years of age (SD 9.23), unmarried, has no university degree, and has a mean of twenty-one months on disability benefits (SD 20.40).

Table 2 presents the results of the estimated parametric Gompertz models with gamma distributed shared frailty at the employer level. For employee characteristics and year effects, see supplementary material S3. In Model 1a, the results show that workers with reduced capacity face the lowest risk of employment ending while working for small employers. Working for a medium or large employer significantly increases risk of employment ending, compared to small employers. Risk of employment ending increases with 12 and 21 per cent, respectively. In model 2a, similar effects are found for employer size. For extent of implemented disability policies, working for an employer with extent of implemented disability policies in the second, third, or highest quartile significantly reduces risk of employment ending, compared to the first quartile. Risk of employment ending is reduced with 8, 16, and 23.6 per cent, respectively. The interaction between employer size and extent of implemented disability policies yielded no significant results, which means that the impact of extent of implemented disability policies on risk of employment ending does not vary by employer size. See supplementary material S4 for the results of the interaction.

For the proportional cox models (model 1b and 2b), similar results are found. In model 1b, working for a medium or large employer increases risk of employment ending relative to small employers. The model predicts a slightly lower hazard rate for large employers, compared to the parametric specification. For model 2b, the proportional cox model again predicts slightly lower hazard rates for employer size compared to the parametric specification. For extent of implemented disability policies, the predicted risks are in the same direction as for the parametric specification. The predicted reductions in risk differ slightly between models. The proportional cox model predicts a lower reduction in risk for the second quartile, and higher reductions in risk for the third and highest quartile, compared to the parametric specification.

Figure 1 to 3 presents the predicted population survival functions for workers with reduced capacity by employer size for quartiles of extent of implemented disability policies, with all other predictors held at their mean. The figures present survival functions that are unconditional on the frailty. The survival functions decrease with time, which means that the probability of sustaining employment decreases with time. The survival functions do not reach zero at the end of analysis time ( $t=180$ ), which means the predicted probability for survival is fairly high. The survival functions decrease steeply at the beginning of analysis time, after which the decrease levels out around analysis time equal to 100. This means that the probability of sustaining employment with time decreases at a lower rate. For all employer sizes, extent of implemented disability policies in the lowest quartile predicts the lowest probability of sustaining employment, while extent of implemented disability policies in the highest quartile predicts the highest probability of sustaining employment. Similar to the estimation results in table 2, working for small employers (figure 1) predicts the highest probabilities of sustaining employment, while working for large employers (figure 3) predicts the lowest probability of sustaining employment, for all quartiles of extent of implemented disability policies. The difference in predicted probability of sustaining employment between each quartile of extent of implemented disability policies is lowest for medium employers (figure 2), with about 2 percentage points between each quartile. The difference in



Table 2 Estimation results

|  | M1a     |      | M1b     |      | M2a     |      | M2b     |      |
|--|---------|------|---------|------|---------|------|---------|------|
|  | Hr      | se   | Hr      | se   | Hr      | se   | Hr      | se   |
| Employer size, ref = small                     |         |      |         |      |         |      |         |      |
| Medium   | 1.12*** | .022 | 1.12*** | .018 | 1.12*** | .021 | 1.11*** | .018 |
| Large  | 1.21*** | .035 | 1.17*** | .023 | 1.23*** | .031 | 1.20*** | .024 |
| Sector, ref = public                           |         |      |         |      |         |      |         |      |
| Private  | .790*** | .020 | .869*** | .016 | .817*** | .019 | .872*** | .016 |
| Industry, ref = Agriculture, fishing, forestry |         |      |         |      |         |      |         |      |
| Manufacturing, electricity, mining, water      | 1.01    | .067 | 1.04    | .048 | 1.02    | .060 | 1.02    | .047 |
| Construction                                   | 1.11    | .082 | 1.14**  | .060 | 1.09    | .072 | 1.09    | .058 |
| Wholesale, retail, financial, real estate      | 1.16*   | .076 | 1.25*** | .056 | 1.16**  | .068 | 1.19*** | .054 |
| Hospitality, logistics, communication          | .995    | .072 | 1.03    | .054 | .995    | .064 | 1.01    | .053 |
| Public administration, education, health care  | 1.10    | .075 | 1.16**  | .054 | 1.09    | .066 | 1.10*   | .051 |
| Household activities & other services          | 1.09    | .077 | 1.19*** | .057 | 1.10    | .068 | 1.14**  | .055 |
| Gender composition, ref = lowest               |         |      |         |      |         |      |         |      |
| Second   | .933*   | .027 | .934**  | .020 | .940*   | .025 | .949*   | .020 |
| Third  | .939    | .033 | .999    | .027 | .962    | .031 | 1.00    | .027 |
| Highest  | .963    | .038 | 1.01    | .031 | .984    | .035 | 1.01    | .031 |
| Age composition, ref = lowest                  |         |      |         |      |         |      |         |      |
| Second   | .933**  | .021 | .938**  | .019 | .943**  | .020 | .954*   | .019 |
| Third  | .930*   | .027 | .924**  | .023 | .943*   | .026 | .946*   | .024 |
| Highest  | .885*** | .031 | .886*** | .027 | .899**  | .030 | .912**  | .027 |
| Mean wage composition, ref = lowest            |         |      |         |      |         |      |         |      |
| Second   | .976    | .022 | .988    | .019 | .991    | .021 | 1.00    | .019 |
| Third  | 1.03    | .030 | 1.03    | .025 | 1.04    | .029 | 1.05*   | .026 |
| Highest  | 1.04    | .041 | 1.05    | .033 | 1.07    | .039 | 1.08**  | .034 |
| Education composition, ref = lowest            |         |      |         |      |         |      |         |      |
| Second   | .957    | .022 | .955*   | .017 | .957*   | .020 | .957*   | .017 |
| Third  | .913**  | .026 | .891*** | .020 | .915*** | .024 | .907*** | .020 |
| Highest  | .770*** | .029 | .777*** | .023 | .787*** | .027 | .815*** | .024 |
| Policy proxy, ref = lowest                     |         |      |         |      |         |      |         |      |
| Second   |         |      |         |      | .920*** | .017 | .924*** | .016 |
| Third  |         |      |         |      | .841*** | .019 | .823*** | .016 |
| Highest  |         |      |         |      | .764*** | .017 | .692*** | .012 |
| Constant                                       | .311*** | .024 | -       | -    | .315*** | .022 | -       | -    |
| Employer shared frailty                        | .150*** | .010 |         |      | .070*** | .008 |         |      |
| N  | 46306   |      | 46306   |      | 46306   |      | 46306   |      |

Hr = hazard rates. Se = standard errors. \*p = .05, \*\*p = .01, \*\*\*p = .001.  
 Model 1a & 2a = parametric Gompertz models with employer shared frailty.  
 Model 1b & 2b = proportional cox models.

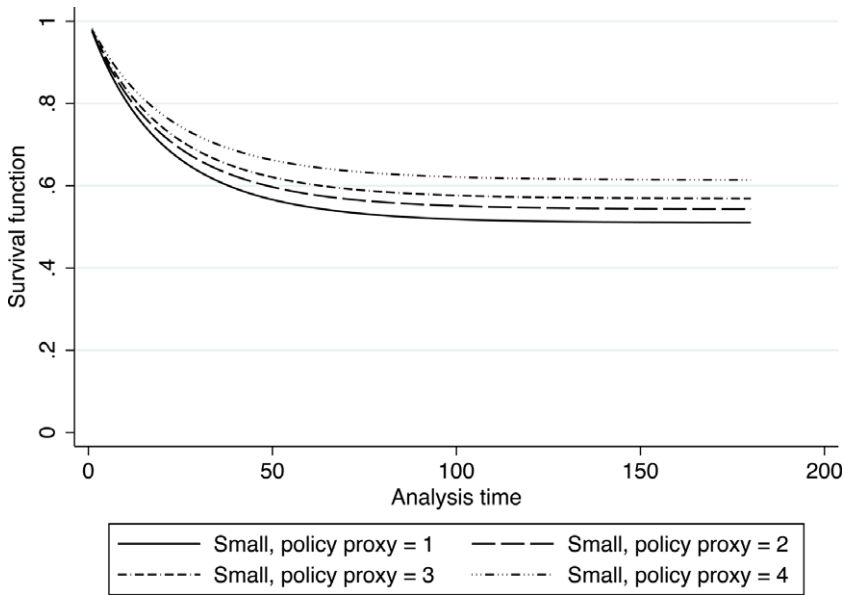


Figure 1. Predicted population survival functions for small employers, for quartiles of extent of implemented disability policies.

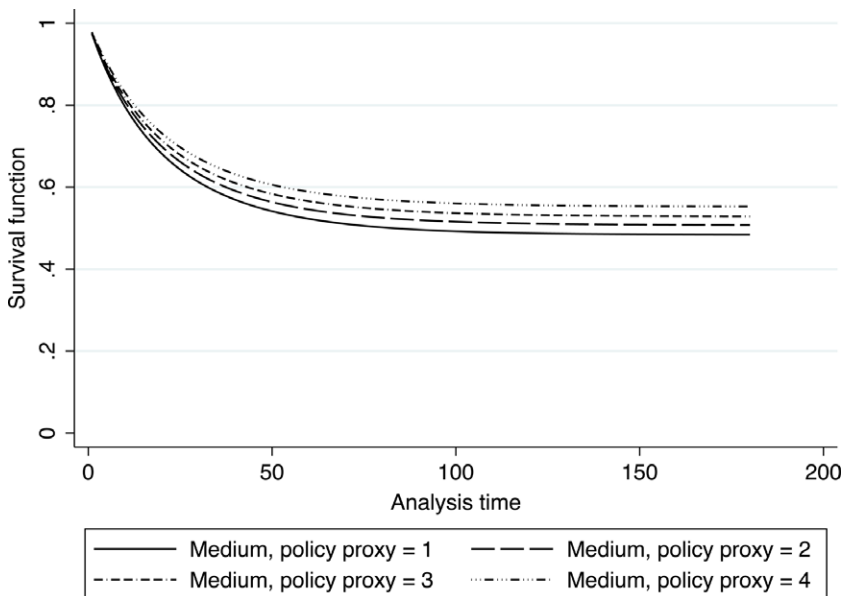


Figure 2. Predicted population survival functions for medium employers, for quartiles of extent of implemented disability policies.

predicted probability of sustaining employment between extent of implemented disability policies in the highest and lowest quartile at the end of analysis time is 11 percentage points for small and large employers, and 8 percentage points for medium employers.

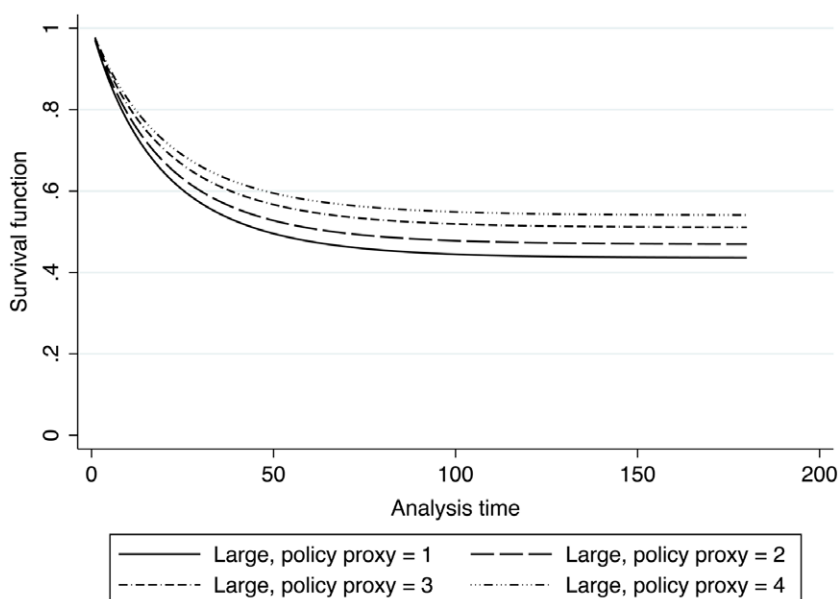


Figure 3. Predicted population survival functions for large employers, for quartiles of extent of implemented disability policies.

## Discussion

This article has investigated how employer size and extent of implemented disability policies impact the probability of sustaining employment for workers with reduced capacity. The results show that working for medium or large employers negatively impacts the probability of sustaining employment for workers with reduced capacity, relative to small employers. The negative impact on probability of sustaining employment gradually increases with employer size. This finding is inconsistent with some previous research, as several studies have found positive associations between large employers and RTW or continued employment (Hannerz *et al.*, 2012; Prang *et al.*, 2016; Schneider *et al.*, 2016; van Ooijen *et al.*, 2021). Based on the results, small employers with low standardisation, few bureaucratic obstacles, and greater opportunity for personalised treatment provide the best conditions for sustaining employment for workers with reduced capacity. This is supported theoretically (Stone and Colella, 1996; Krause *et al.*, 2001; Holm *et al.*, 2007; Tsai *et al.*, 2007; Storey *et al.*, 2010; Harney and Alkhalaf, 2021; Bacon and Hoque, 2022) and empirically in a few studies on early RTW, continued employment, and entry to certified absence (Faucett *et al.*, 2000; Krause *et al.*, 2001; Holm *et al.*, 2007; Markussen *et al.*, 2011). Extent of implemented disability policies could not partially explain this effect. This raises the question of whether formal organisation, practices, and resources are key determinants of effectiveness in sustaining workers with reduced capacity, as has classically been argued (Goss *et al.*, 2000; Borghouts-van de Pas and Freese, 2017; Beatty *et al.*, 2019; Bacon and Hoque, 2022). At the same time, Jansen *et al.* (2021) found that the evidence on the association between employer size and RTW or continued employment is inconsistent. Following this, more research is required to determine the impact of employer size on the probability of sustaining employment for workers with reduced capacity, and whether other factors not considered in previous research can partially explain the inconsistent evidence.

In line with previous research (Williams and Westmorland, 2002; Gensby *et al.*, 2014; Jakobsen and Lillefjell, 2014; Amick *et al.*, 2017; Beatty *et al.*, 2019; van Ooijen *et al.*, 2021), I find that a

higher extent of implemented disability policies positively impacts the probability of sustaining employment for workers with reduced capacity. The positive impact on probability of sustaining employment gradually increases with each quartile of extent of implemented disability policies. Additionally, the interaction between employer size and extent of implemented disability policies yielded no significant results, which means that a higher extent of implemented disability policies contributes positively to probability of sustaining employment for workers with reduced capacity, irrespective of employer size. At the same time, the proxy measure for extent of implemented disability policies yields no information on what types of policies have been implemented by employers. In a systematic review on employer provided disability management programs, Gensby *et al.* (2014) found that it was not possible to determine which programs or program components drove the effectiveness of the implemented policies, and that in-house disability management programs might differ between employers based on size. This opens a discussion on whether types of implemented policies and practices differ according to employer size, how they differ, and whether the policies vary in effectiveness. To further develop the measure of extent of implemented disability policies, more knowledge is needed to determine the impact of specific disability policies and practices on sustaining employment for workers with reduced capacity, and whether the policies differ in implementation and effectiveness according to employer size.

For the other employer characteristics estimated, impact of workforce composition in terms of workers over forty-five years of age, balanced gender composition, and high proportion of employees with higher education positively impacts probability of sustaining employment for workers with reduced capacity. This is in line with previous research (Markussen *et al.*, 2011; van Ooijen *et al.*, 2021). The results indicate that employers that have a diverse workforce in terms of gender, age, and high proportion of employees with higher education provide better conditions for sustaining employment for workers with reduced capacity, likely because the employers have experience in sustaining various groups of workers. Working for private sector employers positively impacts the probability of sustaining employment for workers with reduced capacity, relative to public employers. This means that public employers have worse conditions for sustaining workers with reduced capacity compared to their private counterparts. As Østerud (2020) found, state employers were only passively participating in the Joint Inclusion Effort, for which the employers were facing contradicting demands from the soft quota on the one hand, and productivity demands and cost reductions on the other. Such high demands on efficiency in specialised organisations can give public employers little leeway to integrate workers with reduced capacity. This is problematic, as public employers should be at the forefront in sustaining workers with reduced capacity as organisational representatives of the government that designs and implements both supply- and demand-side policies.

The results indicate three main lines of inquiry for future research. Firstly, more knowledge is needed to determine the impact of employer size in sustaining workers with reduced capacity. If future research finds that small employers provide the best conditions for sustaining employment for workers with reduced capacity, studying how these characteristics can be adapted and transferred to larger employers can help increase group level labour market participation and sustained employment. Otherwise, more research is needed to identify factors that can explain the inconsistent evidence of employer size on RTW, continued employment, and sustained employment.

Second, to further investigate the effect of extent of implemented disability policies on probability for sustaining employment, future research should aim to develop a measure linked to implemented policies and practices. This could increase validity of the measure while allowing for a more fine-grained distinction between employers based on hiring behaviour, and what types of policies have been implemented. Previous research has developed typologies that differentiate between engaged and non-engaged employers based on participation in and attitudes toward ALMPs (Bredgaard, 2018) and hiring behaviour (Hemphill and Kulik, 2016). The typologies are useful for mapping non-engaged employers that can be converted to engaged employers (e.g. non-hirers and light hirers; passive employers and dismissive employers) (Hemphill and

Kulik, 2016; Bredgaard, 2018), as these are employers in which the position of workers with reduced capacity can be improved. Designing a typology that takes extent of implemented disability policies into account could help identifying which non-engaged employers have policies and practices that are conducive to inclusion and sustained employment for workers with reduced capacity, which could provide a basis for which employers to target with demand-side policies. Additionally, a measure linked to implemented disability policies and practices would contribute to the knowledge of which policies and practices positively impact sustaining employment for workers with reduced capacity, and whether the policies and their effectiveness differ between employer sizes. Such a measure also minimises individual selection effects, which the proxy measure in this study cannot control for: workers with reduced capacity might be more likely to stay with the current employer if reduced work capacity limits other employment options, which could partly explain long employment duration after entry to disability benefits.

Lastly, there is inconsistent evidence for the association between sector and sustaining employment (Jansen *et al.*, 2021) for workers with reduced capacity. Future research should strive to clarify how public and private employers impact probability of sustaining employment with respect to employer size, focusing on similarities and differences in demands on productivity, cost efficiency, and recruitment and retention procedures. Only by equal efforts of both public and private organisations can higher labour market participation and sustained employment for workers with reduced capacity be achieved.

This study has focused on single episode data and the duration of single employment records. As such, sustaining employment in this study is only related to probability of sustaining employment with the same employer after entry to disability benefits. To better understand how employers contribute to sustaining employment for workers with reduced capacity, future research could define sustaining employment as sustaining labour market participation and consider multiple (un)employment records over time. This approach could contribute to better understanding individual employability and how employers contribute to it, while accounting for more complete labour market trajectories. This approach opens for differentiating between workers whose employment records end because they have found new jobs with different employers and workers that become unemployed, which the current study does not. The data in this study does not contain health or diagnostic information, only degree of reduced capacity for records from disability pensions. As such, I cannot control for degree of reduced capacity. It is unlikely, however, that an individual with no residual work capacity has been included in the analysis, as the sample consists of employed individuals only. Additionally, I control for time on disability benefits, which can capture some of the variation in degree of reduced capacity: the more severe condition, health, or injury, the longer the period on disability benefits.

Norway has implemented demand-side policies focused on increasing labour market participation for workers with reduced capacity (and other vulnerable groups) (Aakvik and Dahl, 2006; Clayton *et al.*, 2012; Mandal and Ose, 2015; Østerud, 2020; Hyggen and Vedeler, 2021; Østerud and Vedeler, 2022). Despite this, labour market participation for this group remains lower compared to the population average (Eurostat, 2022). As the results show, sustaining employment is impacted by and varies with employer characteristics in terms of size and extent of implemented disability policies. This study suggests that policymakers in Norway should consider both employer size and extent of implemented disability policies when designing new policies. This consideration could help policymakers to better target employers that have low levels of implemented disability policies, where intervention would be most impactful. Such an approach could be extended to other countries that implement demand-side policies and face similar challenges to sustain workers with labour restrictions.

**Supplementary material.** To view supplementary material for this article, please visit <https://doi.org/10.1017/S1474746423000027>.

**Financial support.** This research was financed by the Norwegian Research Council, grant number 301045.

## References

- Aakvik, A. and Dahl, S. Å. (2006) 'Transitions to employment from labour market enterprises in Norway', *International Journal of Social Welfare*, 15, 2, 121–30.
- Amick, B. C., Lee, H., Hogg-Johnson, S., Katz, J. N., Brouwer, S., Franche, R. L. and Bültmann, U. (2017) 'How do organizational policies and practices affect return to work and work role functioning following a musculoskeletal injury?', *Journal of Occupational Rehabilitation*, 26, 3, 393–404.
- Bacon, N. and Hoque, K. (2022) 'The treatment of disabled individuals in small, medium-sized, and large firms', *Human Resource Management*, 61, 2, 137–56.
- Beatty, J. E., Baldridge, D. C., Boehm, S. A., Kulkarni, M. and Colella, A. J. (2019) 'On the treatment of persons with disabilities in organizations: a review and research agenda', *Human Resource Management*, 58, 2, 119–37.
- Blossfeld, H.-P., Rohwer, G. and Schneider, T. (2019) 'Methods to check parametric assumptions', in H.-P. Blossfeld, G. Rohwer and T. Schneider (eds.), *Event History Analysis With Stata*, 2<sup>nd</sup> edn, New York: Routledge, 226–30.
- Böheim, R. and Leoni, T. (2018) 'Sickness and disability policies: reform paths in OECD countries between 1990 and 2014', *International Journal of Social Welfare*, 27, 2, 168–85.
- Borghouts-van de Pas, I. and Freese, C. (2017) 'Inclusive HRM and employment security for disabled people: an interdisciplinary approach', *E-Journal of International and Comparative Labour Studies*, 6, 1, 1–25.
- Bredgaard, T. (2018) 'Employers and active labour market policies: typologies and evidence', *Social Policy and Society*, 17, 3, 365–77.
- Bredgaard, T. and Halkjær, J. L. (2016) 'Employers and the implementation of active labor market policies', *Nordic Journal of Working Life Studies*, 6, 1, 47–59.
- Castillo, D. (2019) 'Employer-oriented labour market policies in Sweden: creating jobs and the division of labour in the public sector', *International Social Security Review*, 72, 2, 75–95.
- Chan, F., Tansey, T. N., Iwanaga, K., Bezyak, J., Wehman, P., Phillips, B. N., Strauser, D. R. and Anderson, C. (2021) 'Company characteristics, disability inclusion practices, and employment of people with disabilities in the post COVID-19 job economy: a cross sectional survey study', *Journal of Occupational Rehabilitation*, 31, 3, 463–73.
- Clayton, S., Barr, B., Nylen, L., Burström, B., Thielen, K., Diderichsen, F., Dahl, E. and Whitehead, M. (2012) 'Effectiveness of return-to-work interventions for disabled people: a systematic review of government initiatives focused on changing the behaviour of employers', *The European Journal of Public Health*, 22, 3, 434–9.
- Cooper, A. F., Hankins, M., Rixon, L., Eaton, E. and Grunfeld, E. A. (2013) 'Distinct work-related, clinical and psychological factors predict return to work following treatment in four different cancer types', *Psycho-Oncology*, 22, 3, 659–67.
- De Witte, H., Pienaar, J. and De Cuyper, N. (2016) 'Review of 30 years of longitudinal studies on the association between job insecurity and health and well-being: is there causal evidence?', *Australian Psychologist*, 51, 1, 18–31.
- Eichhorst, W. and Konle-Seidl, R. (2008) 'Contingent convergence: a comparative analysis of activation policies', *IZA Discussion Paper No. 3905*, DOI: doi.org/10.2139/ssrn.1318864.
- EU Commission (2003) 'Recommendation 2003/361/EC', *Official Journal of the European Union L*, 124.
- Eurostat (2022) 'Disability employment gap by level of activity limitation and sex', [https://ec.europa.eu/eurostat/databrowser/view/HLTH\\_DLM200/default/table?lang=en&category=hlth.hlth\\_dsb.hlth\\_dsb\\_lm.hlth\\_dsb\\_lm\\_](https://ec.europa.eu/eurostat/databrowser/view/HLTH_DLM200/default/table?lang=en&category=hlth.hlth_dsb.hlth_dsb_lm.hlth_dsb_lm_) [accessed 21.03.2022].
- Faucett, J., Blanc, P. D. and Yelin, E. (2000) 'The impact of carpal tunnel syndrome on work status: implications of job characteristics for staying on the job', *Journal of Occupational Rehabilitation*, 51, 1, 55–69.
- Froyland, K., Andreassen, T. A. and Innvær, S. (2019) 'Contrasting supply-side, demand-side and combined approaches to labour market integration', *Journal of Social Policy*, 48, 2, 311–28.
- Gensby, U., Labriola, M., Irvin, E., Amick, B. C. and Lund, T. (2014) 'A classification of components of workplace disability management programs: results from a systematic review', *Journal of Occupational Rehabilitation*, 24, 2, 220–41.
- Goss, D., Goss, F. and Adam-Smith, D. (2000) 'Disability and employment: a comparative critique of UK legislation', *International Journal of Human Resource Management*, 11, 4, 807–21.
- Gustafsson, J., Peralta, J. P. and Danermark, B. (2013) 'The employer's perspective on supported employment for people with disabilities: successful approaches of supported employment organizations', *Journal of Vocational Rehabilitation*, 38, 2, 99–111.
- Gutierrez, R. G. (2002) 'Parametric frailty and shared frailty survival models', *The Stata Journal*, 3, 1, 22–44.
- Hannerz, H., Ferm, L., Poulsen, O. M., Pedersen, B. H. and Andersen, L. L. (2012) 'Enterprise size and return to work after stroke', *Journal of Occupational Rehabilitation*, 22, 4, 456–61.
- Harney, B. and Alkhalaf, H. (2021) 'A quarter-century review of HRM in small and medium-sized enterprises: capturing what we know, exploring where we need to go', *Human Resource Management*, 60, 1, 5–29.
- Harney, B. and Dundon, T. (2006) 'Capturing complexity: developing an integrated approach to analysing HRM in SMEs', *Human Resource Management Journal*, 60, 1, 48–73.
- Hemphill, E. and Kulik, C. T. (2016) 'Which employers offer hope for mainstream job opportunities for disabled people?', *Social Policy and Society*, 15, 4, 537–54.

- Høgelund, J. and Holm, A. (2014) 'Worker adaptation and workplace accommodations after the onset of an illness', *IZA Journal of Labor Policy*, 3, 1, 1–18.
- Holm, A., Benn, N. V. and Høgelund, J. (2007) *Employers' Importance for the Return to Work of Sick-Listed Workers*, Socialforskningsinstituttet, working paper.
- Hyggen, C. and Vedeler, J. S. (2021) 'Employer engagement and active labour market policies. Evidence from a Norwegian multi-method study', *Social Policy and Society*, 20, 4, 548–60.
- Ingold, J. and Stuart, M. (2015) 'The demand-side of active labour market policies: a regional study of employer engagement in the Work Programme', *Journal of Social Policy*, 44, 3, 443–62.
- Jakobsen, K. and Lillefjell, M. (2014) 'Factors promoting a successful return to work: from an employer and employee perspective', *Scandinavian Journal of Occupational Therapy*, 21, 1, 48–57.
- Jansen, J., van Ooijen, R., Koning, P., Boot, C. and Brouwer, S. (2021) 'The role of the employer in supporting work participation of workers with disabilities: a systematic literature review using an interdisciplinary approach', *Journal of Occupational Rehabilitation*, 31, 4, 916–49.
- Kluve, J. (2010) 'The effectiveness of European active labor market programs', *Labour Economics*, 17, 6, 904–18.
- Krause, N., Dasinger, L. K., Deegan, L. J., Rudolph, L. and Brand, R. J. (2001) 'Psychosocial job factors and return-to-work after compensated low back injury: a disability phase-specific analysis', *American Journal of Industrial Medicine*, 40, 4, 374–92.
- Lahey, P. M., Kirsch, B., MacDermid, J., Tompa, E. and Gewurtz, R. E. (2019) 'Active labour market policies for people with disabilities in receipt of public income benefits: a scoping review', *Work*, 64, 2, 229–47.
- Lindsay, S., Cagliostro, E., Leck, J., Shen, W. and Stinson, J. (2019) 'Employers' perspectives of including young people with disabilities in the workforce, disability disclosure and providing accommodations', *Journal of Vocational Rehabilitation*, 50, 2, 141–56.
- Mandal, R. and Ose, S. O. (2015) 'Social responsibility at company level and inclusion of disabled persons: the case of Norway', *Scandinavian Journal of Disability Research*, 17, 2, 167–87.
- Markussen, S., Røed, K., Røgeberg, O. J. and Gaure, S. (2011) 'The anatomy of absenteeism', *Journal of Health Economics*, 30, 2, 277–92.
- McCullum, D. (2012) 'The sustainable employment policy agenda: what role for employers?', *Local Economy*, 27, 5–6, 529–40.
- Organisation for Economic Co-operation and Development (OECD) (2010) *Sickness, Disability and Work: Breaking the Barriers: A Synthesis of Findings Across OECD Countries*, Paris: OECD Publishing.
- Østerud, K. L. (2020) 'Leading the way? State employers' engagement with a disability employment policy', *Nordic Journal of Working Life Studies*, 11, 1, 3–21.
- Østerud, K. L. and Vedeler, J. S. (2022) 'Disability and regulatory approaches to employer engagement: cross-national challenges in bridging the gap between motivation and hiring practice', *Social Policy and Society*, DOI: doi.org/10.1017/S1474746422000021.
- Prang, K.-H., Bohensky, M., Smith, P. and Collie, A. (2016) 'Return to work outcomes for workers with mental health conditions: a retrospective cohort study', *Injury*, 47, 1, 257–65.
- Reinders Folmer, C. P., Mascini, P. and Van der Veen, R. J. (2020) 'Evaluating social investment in disability policy: impact of measures for activation, support, and facilitation on employment of disabled persons in 22 European countries', *Social Policy and Administration*, 54, 5, 792–812.
- Schneider, U., Linder, R. and Verheyen, F. (2016) 'Long-term sick leave and the impact of a graded return-to-work program: evidence from Germany', *The European Journal of Health Economics*, 17, 5, 629–43.
- Stone, D. L. and Colella, A. (1996) 'A model of factors affecting the treatment of disabled individuals in organizations', *Academy of Management Review*, 21, 2, 352–401.
- Storey, D. J., Saridakis, G., Sen-Gupta, S., Edwards, P. K. and Blackburn, R. A. (2010) 'Linking HR formality with employee job quality: the role of firm and workplace size', *Human Resource Management*, 49, 2, 305–29.
- Tsai, C.-J., Sengupta, S. and Edwards, P. (2007) 'When and why is small beautiful? The experience of work in the small firm', *Human Relations*, 60, 12, 1779–807.
- van Berkel, R. (2021) 'Employer engagement in promoting the labour-market participation of jobseekers with disabilities. An employer perspective', *Social Policy and Society*, 20, 4, 533–47.
- van der Aa, P. and van Berkel, R. (2014) 'Innovating job activation by involving employers', *International Social Security Review*, 67, 2, 11–27.
- van der Noordt, M., Ijzelenberg, H., Droomers, M. and Proper, K. I. (2014) 'Health effects of employment: a systematic review of prospective studies', *Occupational and Environmental Medicine*, 71, 10, 730–6.
- van Ooijen, R., Koning, P. W., Boot, C. R. and Brouwer, S. (2021) 'The contribution of employer characteristics to continued employment of employees with residual work capacity: evidence from register data in The Netherlands', *Scandinavian Journal of Work, Environment and Health*, 47, 6, 435–45.
- Villund, O. (2010) *Evaluating Employment Classification*, Oslo: Statistics Norway.

- Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Van Ruitenbeek, G., Uitdewilligen, S. and Corbière, M.** (2018) 'Disability and employment—overview and highlights', *European Journal of Work and Organizational Psychology*, **27**, 1, 40–55.
- Whitehead, M.** (2010) 'Disability and employment: lessons from natural policy experiments', *European Journal of Public Health*, **20**, 4, 371–3.
- Williams, R. M. and Westmorland, M.** (2002) 'Perspectives on workplace disability management: a review of the literature', *Work*, **19**, 1, 87–93.

---

**Cite this article:** Ulstein J. The Impact of Employer Characteristics on Sustaining Employment for Workers with Reduced Capacity: Evidence from Norwegian Register Data. *Social Policy and Society*. <https://doi.org/10.1017/S1474746423000027>