

# Disability pay gaps in Northern Ireland: summary research results

Date: 22 February 2024

The full research report is published on the [NISRA website](#)<sup>1</sup>.

Pay gaps, differences in average pay between different groups of people, are a topic of considerable policy and media interest in Northern Ireland and elsewhere. Section 75 (S75) of the Northern Ireland Act<sup>2</sup> is underpinned by the promotion of equality and good relations. Apart from gender pay gaps there is little evidence on the extent of pay levels and pay disparities for other S75 characteristics such as disability. This research study used a novel themed dataset, the 2011 Earnings and Employees Study (EES)<sup>3</sup> to examine pay levels for disabled and non-disabled employees in Northern Ireland.

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## What we did

The study avails of high-quality earnings data from the 2011 Annual Survey of Hours and Earnings<sup>4</sup> enriched with data on personal characteristics from the 2011 Census<sup>5</sup>. The overarching goal of the research is to generate novel information to assist our understanding of disability pay gaps in Northern Ireland.

For disabled and non-disabled employees, the key aims of our research are to:

1. compare job-related and personal characteristics;
2. quantify disability pay levels and associated disability pay gaps for job-related and personal characteristics; and
3. use statistical modelling to identify key factors associated with (i) disability pay levels and the (ii) disability pay gap.

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## What we found

1. Differences in certain characteristics were observed between disabled and non-disabled employees. In comparison to non-disabled employees, a greater share of disabled employees (aged 17 years and above):
  - Were aged 55 years and over (27.1% self-reported as disabled versus 12.7% with no disability);
  - Worked part-time (35.1% versus 29.6%);
  - Had no child dependants (69.4% versus 52.4%);
  - Provided unpaid care (22.1% versus 14.7%); and
  - Had self-reported, fair, bad or very bad health (59.8% versus 5.3%).

Over a third of non-disabled employees (37.7%) had a degree-level qualification compared to a quarter (25.1%) of disabled employees.

2. The median disability pay gap for employees aged 17 years and above was 12.1% in 2011. That is, disabled employees earned, on average, 12.1% less than non-disabled employees. The disability pay gap was 12.9% for males and 11.2% for females, and was higher for full-time (14.3%) than part-time employees (9.9%).

When quantifying specific job-related and personal characteristics on all (combined full-time and part-time) employees aged 17 years and above, the highest disability pay gaps were found for:

- Individuals aged 35-44 years (27.6%);
- Individuals living in houses valued at more than £150,000 (27.2%);
- Public Sector employees (20.3%);
- Professional occupation employees (18.7%); and
- Employees living in owner occupied accommodation (17.4%).

3. (i) Employee earnings are influenced by multiple factors including their occupation and whether an individual works full-time or part-time. For employees aged 25 years and above, separate statistical models<sup>A</sup> were generated for disabled and non-disabled employees, to quantify the unique effect that a particular characteristic (e.g. having a degree) had on median earnings (Table 1).

**Table 1 Disabled and non-disabled employees (25+ years)**

Modelling results were converted into percentage changes

↓ Characteristics	Disabled (%)	Non-disabled (%)
Degree-qualified (vrs not)	31.5	39.3
Public (vrs private)	21.6	17.9
Professional occupation (vrs not)	20.6	32.9
Full-time (vrs part-time)	15.7	12.6
45+ years (vrs 25-34 years)	15.7	12.3
Male (vrs females)	10.0	14.6

**Interpretation** Table 1 shows that for median earnings, after taking into account job-related and personal characteristics, disabled employees with a degree earned 31.5% more than disabled employees without a degree.

- Disabled and non-disabled employees with a degree (compared to not having a degree) earned 31.5% and 39.3% more respectively.
- Disabled (21.6%) and non-disabled employees (17.9%) in the public sector earned more than private sector employees.
- Both disabled (20.6%) and non-disabled professionals (32.9%) earned more than their non-professional counterparts.
- Compared to part-time employees, full-time disabled (15.7%) and non-disabled (12.6%) employees earned more.
- Employees aged 45 years and above, both disabled (15.7%) and non-disabled (12.3%) earned more than those aged 25-34 years.
- Males earned more than females, for both disabled (10.0%) and non-disabled (14.6%) employees.

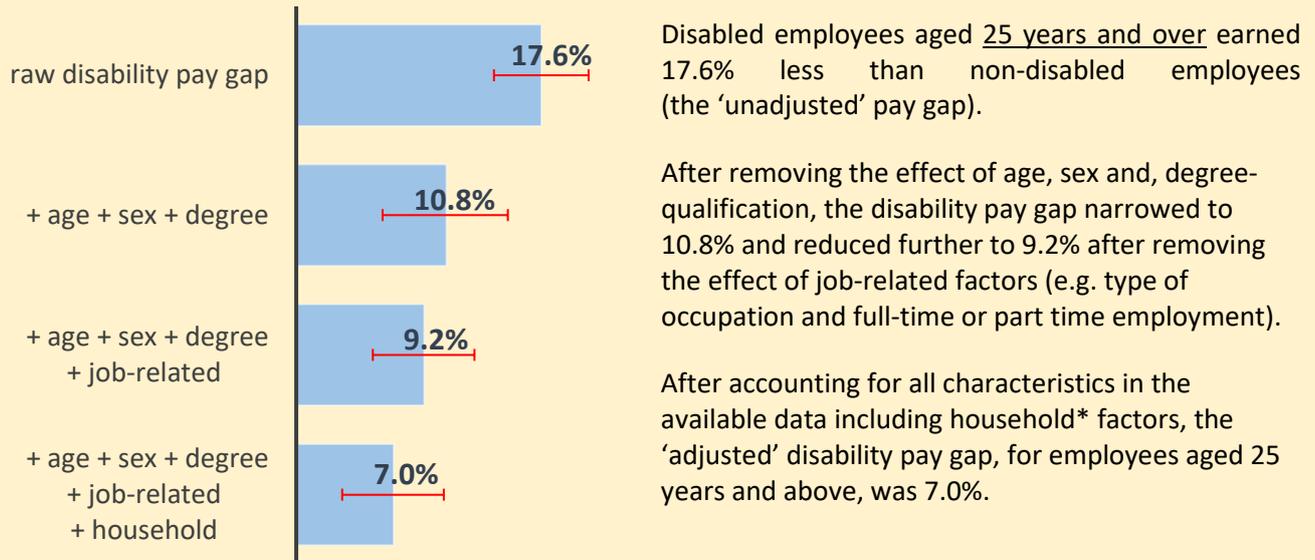
(ii) The analysis has demonstrated differences in job-related and personal characteristics between disabled and non-disabled employees, as well as differences in disability pay gaps, for example:

- Compared to non-disabled employees, a higher proportion of disabled employees were aged 55 years and over, while a lower proportion of disabled employees had a degree-level qualification. Disabled employees were also more likely than non-disabled employees to work part-time and have no child dependents (aim 1).
- disability pay gaps differed by a range of factors including age, sex, by job-related (e.g. full-time/ part-time and type of occupation) and by personal (owner-occupancy and house value) characteristics (aim 2).

The modelling analyses in 3(i) above, illustrated how higher earnings for both disabled and non-disabled employees were largely influenced by having a degree-qualification and by job-related factors. To gain further insight into the disability pay gap, further statistical models were run for employees aged 25 years and above, to incrementally assess the impact of differences in characteristics (e.g. degree-level qualification or type of occupation) between disabled and non-disabled employees on the disability pay gap (Figure 1).

<sup>A</sup> The research report provides detailed information on statistical methods employed.

**Figure 1 Adjusted Disability pay gaps: employees aged 25 years and over**



\*household factors including owner-occupancy and house value served as proxies for income.

**Note:** The regression model employed allows us to estimate the effect of disability on pay, by allowing disabled and non-disabled employees to have the same characteristics.

**Revision note:** Following further validation, the disability pay gap in Figure 1 for the + age + sex + degree increment was changed from 12.0% to 10.8% (Updated 22 February 2024, 9.30 am).

The resulting adjusted disability pay gap of 7.0% is deemed the "unexplained" portion of the model given the data available for this research. There are a number of potential explanations for this including other unmeasured factors e.g. data not available relating to job tenure or seniority level of employee. It is important to note that due to low numbers of disabled employees over 25 years in the dataset, the modelling should be seen as exploratory, providing general insights into factors influencing disability pay and disability pay gaps among the characteristics which could be measured.

## Why it matters

Statistics on pay gaps for different S75 equality groups are keenly sought by central and local government, academics, the third sector and the general public. Our research extends understanding of pay gaps and provides disability-disaggregated analysis on pay which will be used to support the Department for Economy (DFE)- led economic strategy '10x Economy - an economic vision for a decade of innovation'<sup>6</sup> and to support the development of Department for Community- led social inclusion strategies including the Disability Strategy<sup>7</sup>. The research findings are aligned with Article 31 of the United Nations Convention for the Rights of Persons with a Disability (UNCPRD)<sup>8</sup> and specifically relate to providing appropriate disability-disaggregated research data to inform the formulation and implementation of policy.

## What next?

We are continuing to work with policy stakeholders, including in the Department for Communities and the Department for the Economy, to extend the reach of this research. A separate report on gender pay gaps will also be published by the authors in 2024. A repeated cross-sectional analysis using the planned 2021 EES dataset would provide fresh insights into changes in disability pay gaps over time.

## Definitions

**Disability** is based on the 2011 Northern Ireland Census<sup>5</sup> definition where respondents reported that their day-to-day activities were ‘*limited a little*’ or ‘*limited a lot*’ due to a health condition or disability which has lasted, or is expected to last, at least 12 months.

Aligned with Official Statistics on gender pay gaps derived from the ASHE survey<sup>4</sup>, the measure of earnings used in our analyses was **gross hourly earnings (excluding overtime)** which includes basic pay, commissions, shift premium pay, bonus or incentive pay and allowances, but before deductions for PAYE, National Insurance, pension schemes, student loan repayments and voluntary deductions.

The **median** measures the hourly pay of the ‘middle’ employee, i.e. the level of earnings at which 50% of employees earn more and 50% earn less.

A pay gap is calculated as the difference between median hourly earnings of a group of interest (e.g. disabled employee) and a reference group (e.g. non-disabled employee) as a proportion of the hourly earnings of the reference group (e.g. non-disabled employee).

$$\text{Disability pay gap} = \frac{\text{hourly earnings (non-disabled)} - \text{hourly earnings (disabled)}}{\text{hourly earnings (non-disabled)}} \times 100$$

## Acknowledgements

Administrative Data Research - Northern Ireland (ADR-NI) takes privacy protection very seriously. All information that directly identifies individuals/organisations will be removed from the datasets by trusted third parties before researchers access them. All researchers using ADR-NI are trained and accredited to use sensitive data safely and ethically, they will only access the data via a secure environment and all their findings will be vetted to ensure they comply with strict confidentiality requirements. The help provided by the staff of the Administrative Data Research Centre - Northern Ireland (ADRC-NI) and the ADR-NI support officers within NISRA Research Support Unit (RSU) is acknowledged. ADR-NI is funded by the Economic and Social Research Council (ESRC). The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of ADR-NI. The NISRA Census and ELMS data have been supplied for the sole purpose of this project.

## Feedback

Your comments and suggestions are welcome and will assist ADR NI in continuously developing research outputs. Please send your comments to: [John.Hughes@nisra.gov.uk](mailto:John.Hughes@nisra.gov.uk)

## References

1. [NISRA-led Research](#)
2. [Northern Ireland Act 1998. Schedule 9, Paragraph 4 \(3\) \(a\)](#)
3. [Earnings and Employees Study \(EES\) 2011](#)
4. [Annual Survey of Hours and Earnings](#)
5. [2011 Census questionnaire](#)
6. [A 10x Economy](#)
7. [Disability Strategy](#)
8. [UNCRPD - Article 31](#)