

## **Multiple Disadvantage and Wage Growth: The Effect of Merit-pay on Pay Gaps**

Professor Carol Woodhams  
University of Exeter Business School  
Rennes Drive  
Exeter  
United Kingdom  
EX4 4PU  
c.woodhams@exeter.ac.uk  
44 (0) 1392722137

Dr Ben Lupton  
Manchester Metropolitan University  
Business School  
Oxford Road  
Manchester  
United Kingdom  
M15 6BG  
b.lupton@mmu.ac.uk  
44 (0) 161 247 6460

Dr Graham Perkins  
University of Exeter Business School,  
Streatham Court, Rennes Drive, Exeter EX4 4PU  
Tel: +44 (0)1392 726462  
g.perkins@exeter.ac.uk

Professor Marc Cowling  
Brighton University Business School  
Mithras House  
Lewes Road  
Brighton

United Kingdom  
BN2 4AT  
M.Cowling2@brighton.ac.uk

## **Multiple Disadvantage and Wage Growth: The Effect of Merit-pay on Pay Gaps**

This article concerns rates of wage growth amongst women and minority groups, and their impact on pay gaps. Specifically, it focuses on the pay progression of people with more than one disadvantaged identity, and on the impact of merit-pay. Recent research indicates that pay gaps for people in more than one disadvantaged category are wider than those with a single disadvantage. It is not known whether these gaps are closing, at what rate, and whether all groups are affected equally; nor is it known whether merit-pay alleviates or exacerbates existing pay gaps. In addressing these issues, the analysis draws on longitudinal payroll data from a large UK-based organisation. Results show that pay gaps are closing, however the rate of convergence is slow relative to the size of existing pay disparities, and slowest of all for people with disabilities. When the effect of merit-pay is isolated it is found to have a small positive effect in reducing pay gaps, and this effect is generally larger for dual/multiple disadvantaged groups. These findings run counter to the well-established critique of merit-pay in relation to equality outcomes. The implications of this are discussed, and an agenda for research and practice is set out.

### **Introduction**

This article is concerned with the impact of pay progression in organisations on wage growth amongst disadvantaged groups in the labour market (specifically women, ethnic minorities, and people with disabilities). We focus specifically on the impact on those with more than one such disadvantage, and give particular attention to the role of merit-pay in wage growth inequalities. It is well known that in western societies people in disadvantaged groups experience, on average, a pay gap in relation to their more privileged counterparts (Longhi and Platt, 2008; Green and Ferber, 2005). Recent evidence from the UK (Woodhams et al, 2013) indicates that multiple disadvantage is associated with lower pay: people with more than one disadvantage are paid less on average than those with a single disadvantage, and the more labour market disadvantages someone carries the lower (on average) is their pay. Whilst there is evidence that the gender wage gap in the UK and elsewhere is

declining (ONS, 2011; Blau and Khan, 2006; Green and Ferber, 2005; O’Neill, 2003) – though it remains substantial – less is known about the relative wage growth experienced by other disadvantaged groups (Brynin and Güveli, 2012; Malo and Pagán, 2012) and less still in relation to those with multiple disadvantages.

Here we focus on pay progression as a contributor to wage growth and the narrowing or otherwise of pay gaps. Pay progression within organisations may arise from promotions, annual incremental rises, cost of living awards and merit-pay awards. We have a specific interest in the latter. Merit-pay schemes, though increasingly popular (Salimäki and Jämsén, 2009), have been criticised in relation to their impact on payment equality on the grounds that their subjectivity gives expression to pre-existing prejudices (Elvira and Graham, 2002; Castilla and Bernard, 2010), or that the way that merit is conceived serves to exclude disadvantaged groups from access to it (Kumra, 2010), legitimising and reinforcing existing hierarchies (Son Hing et al., 2011). These arguments would suggest that merit awards would be lower for disadvantaged groups, thus contributing to relatively lower wage growth and, *ceteris paribus*, a widening of pay gaps. The thrust of earlier research on multiple disadvantage and pay (Woodhams et al, 2013) might also lead one to expect that those with dual or multiple disadvantages would fare worse in this respect. While that research drew on cross-sectional pay data, here we can draw on longitudinal data from a large private sector organisation in the UK that operates a merit-pay scheme to show whether pay progression is reinforcing (or indeed alleviating) the link between multiple disadvantage and lower pay. We start by reviewing what is known about pay gaps, wage growth and the impact of merit-pay schemes on employment equality.

### **Multiple Disadvantage, Pay Gaps and Wage Growth**

Pay gaps relating to equality strands in the UK – and elsewhere – are well-documented when groups are contrasted on a single axis of “difference”. The median hourly pay gap between men and women in the UK stands at 19.5% (ONS, 2011). This gap is smaller for women working full-time (9.1%, ONS, 2011) but much higher (34.5%, Perfect, 2011) for women working part-time. Most UK ethnic minority groups suffer a pay gap in relation to the “White British” category (Brynin and Guveli, 2012), as high as 22.9% for men of Pakistani origin (Metcalf, 2009), though there are substantial differences in the experiences of different ethnic groups (Elliott and Lindley, 2008). Disabled workers are, on average, paid less than non-disabled workers (Metcalf, 2009; Longhi and Platt, 2008), with gaps of between 6% and 26% reported, though this is sensitive to the severity of impairment (Malo and Pagán, 2012). Both older and younger workers suffer pay gaps in relation to employees in ‘mid-career’. Average hourly pay in the UK peaks in the 40-49 age range, with workers aged 22–29 years and those aged over 60 experiencing pay gaps of over 20% in relation to this group (Metcalf, 2009).

Rather less is known about the pay deficits experienced by people in more than one disadvantaged category, i.e. those who are in dual, triple or even quadruple axis categories (Browne and Misra, 2003). Recent research on multiple disadvantage and pay (Woodhams et al, 2013) indicates that the more labour market disadvantages (i.e. in relation to gender, ethnicity, disability and age) an employee has, the lower their pay is on average – in this study the gap in median earnings was over £8000 (\$13,000) per year between the most advantaged and disadvantaged groups. These authors found that the effect of accumulation of disadvantages on pay was in some cases greater than would arise from simply adding the pay penalties arising from single disadvantages, and this effect tended to be more marked amongst multiple disadvantaged groups.

There is evidence that gender pay gaps have narrowed over the long term in the UK and other western economies. For example, between 1970 and 2006 (in the US) there was a 44% growth in women's pay compared with 6% for men (Butler, 2010). However, in relation to gender, the pace of change has been uneven and wage growth has not benefited all female workers to the same extent (Grimshaw et al., 2001; Blau and Khan, 2006; Mason, 2011). Very little evidence is available as to the change in pay gaps affecting people with dual or multiple disadvantaged identities. There is some evidence around gender and ethnicity in the US: for example, Anderson and Shapiro report that black women's pay rose from 50% of the white average in 1940 to parity in 1980 before slipping back to 91% in the late 1980s. However, there is sparse evidence of changing (or otherwise) pay gaps affecting people with other pairs of disadvantages, and we know of no research that examines this in relation to people with multiple disadvantages.

There are a number of factors underlying the differential wage-growth that contributes to the narrowing of pay gaps. Social changes may impact on wage levels, for example, increasing female participation in the labour market, improving conditions for second and third generation immigrants, reductions in occupational segregation resulting from reduced stereotyping and improved role-models (Brynin and Guveli, 2012; Elliott and Lindley, 2008; Grimshaw et al., 2001). Institutional changes also have an effect, by impacting on employers or in shaping the social trends noted above (Elliott and Lindley, 2008; Malo and Pagán, 2012; Grimshaw et al., 2001). For example, anti-discrimination legislation may be a factor in reducing occupational segregation, both horizontal – arising from hiring decisions – and vertical – arising from promotion decisions. Equal pay legislation is likely to have had a role in reducing the scope for overt pay discrimination (Anderson and Shapiro, 1996). Minimum wage regimes may also disproportionately benefit disadvantaged workers in low paid occupations, and thus contribute to a closure of

wage gaps (Gunderson, 1975; Orrenius and Zavodny, 2008). However, our interest here is on the impact of employer practices, particularly payment systems, in maintaining, reducing or widening pay gaps, and it is to this that we now turn.

### **Payment Systems and Wage Growth**

Pay gaps in organisations may result from differences in entry-level pay or from different rates of pay progression once in employment (Brynin and Güveli, 2012). Differences in entry-level pay have been repeatedly found. For example, in the US, people from ethnic minorities are reported to be offered wages that are lower by 10 to 19% compared to their white counterparts (Neumark, 1999; Weinberger, 1998). However, in the context of equal pay legislation, differences in entry level pay for men and women are less likely to be due to direct discrimination by employers than was previously the case, and more likely to result from continuing occupational segregation and lower pay in feminised work (Eveline and Todd, 2009; Black and Spitz-Oener, 2010) – itself arising from institutional devaluing of women’s work (Sayers, 2012), gender differences in wage bargaining power, or women’s choices (Amaran, 2010; Hakim, 2011). Similar (though not directly equivalent) arguments are expounded in the debates around entry level wage gaps affecting ethnic minorities, disabled people and older/younger workers (Malo and Pagán, 2012; Weinberger, 1998; Shapiro and Sandell, 1985).

Recently, attention has turned to the impact of systems of payment progression in organisations, and their role in differential wage growth and thus the maintenance or diminution of pay gaps. Increased attention paid by organisations to equality good practice has improved opportunities for development, promotion and pay rises. For the last 20 years in the UK, a move toward harmonisation, simplification and shorter pay bands

has considerably reduced the equal pay risk (Perkins and White, 2010). Systems of merit-pay have also attracted particular interest in this regard, not least as they have become increasingly common in western economies in recent years. More than 60% of UK organisations cited “individual performance” as the most common factor used to determine pay progression (CIPD, 2011) and increased use of such systems is reported elsewhere in Europe and in the USA (Salimäki and Jämsén, 2009; McGregor, 2008; Castilla, 2012; Elvira and Graham, 2002). This trend may be driven by a number of factors (Campbell et al., 1988; Phillips, 2008; Compensation and Benefits for Law Offices, 2007; Castilla and Benard, 2010) – for example, a view that the use of incentives will increase motivation, drive up performance, and help attract and retain high performers – outcomes which are contested (McGregor, 2008; Salimäki and Jämsén, 2009) – or that they will support strategies to individualise the employment relationship.

Regardless of their general merits (or otherwise), there is a *prima facie* argument that performance pay systems would have a beneficial, or at least neutral, impact on pay gaps. In a truly meritocratic system, every individual would be judged on their achievements and efforts regardless of non-merit factors such as their gender or ethnicity (Castilla and Benard, 2010). All other things being equal, this should lead to even wage growth between groups and possibly faster growth amongst disadvantaged groups where this serves to correct the effects of previous prejudice. However, there are also reasons to be sceptical. Merit-schemes have been subject to an extensive critique in relation to equality issues, particularly gender equality.

There is long-standing concern that such systems rely on judgments – performance ratings – that are inherently subjective (Elvira and Graham, 2002). This subjectivity allows a space for political influences, favouritism and bias to come to the fore (Salimäki and Jämsén, 2009). Castilla



and Bernard (2010) show how merit-pay judgements act as triggers to existing cognitive biases, resulting in women and other disadvantaged groups begin given lower pay awards than men and other privileged groups. This is likely to be particularly prevalent where merit systems are not formalised (Fiske, 1998; Reskin, 2000; Elvira and Graham, 2002). A second concern is that people may differ in their attitudes towards and behavioural responses to competition (Manning and Saidi, 2010). Women in particular are thought to fare less well in situations where performance is linked to pay growth (Dohmen and Falk, 2011; Niederle and Vesterlund, 2007), though not in all cases (Asplund and Napari, 2011), or they may 'opt out' of jobs in which performance pay is the norm (Manning and Saidi, 2010).

A third concern centres on the idea that the very notion of 'merit' that underpins performance pay systems is itself gendered (or subject to inherent bias in relation to other social categories). Under this analysis, merit is not an objective quality, but a social construction (Kumra, 2010) that allows employment decisions made on less transparent grounds to be legitimised. Merit is defined in the context of power relations (Thornton, 2007; Son Hing et al., 2011), by those with power, and in their image, thus excluding from 'merit' (by definition) those who differ. We note, for now, that this view is itself not without its critics (Farber and Sherry, 1995), but observe that, if true, one outcome would be that merit-pay systems, far from opening up fair competition to the advantage of previously disadvantaged groups, would simply institutionalise existing inequalities and wage gaps. This idea receives some empirical support from Castilla and Benard (2010), who showed that in organisations styled as 'meritocratic', managers were likely to give higher pay awards to men than to (equally performing) women.

There are good reasons, then, to expect that merit pay systems, rather than contributing to faster wage growth amongst disadvantaged groups and thus a narrowing of pay gaps, might have the opposite effect. In other words, they might accelerate the wage growth of groups who already

receive higher average pay in relation to workers from disadvantaged groups. Our interest here is in how this might affect employees who have more than one employment disadvantage (in relation to age, gender, ethnicity, disability). In relation to pay levels, as opposed to pay growth, recent research (Woodhams et al, 2013) suggests that there may be an interaction effect that in some cases reduces average pay below what one would expect from simply adding up the pay deficits that people experience from being in a single disadvantaged category. Why this should be is not clear, and there are likely to be complex and multiple reasons.

Part of the explanation may lie in the fact that organisational responses to inequality are designed to address the experiences of people with a single disadvantage, and may fail to adequately address the problems faced by those with multiple disadvantages. Organisation equality policy and practice is not structured to embrace cases of multiple disadvantage. It tends to follow, in line with the regulatory approach of the UK and, in the most part, the US, a single-axis means of diagnosing inequality (Hannett, 2003; Fredman, 2011) using categories comprising 'sex', 'race', 'religion', 'disability', and so on. This tradition requires complainants and employees with a grievance to tackle each strand of discrimination, whether about pay or otherwise, separately, using, first, the single strand of redress which has the most likelihood of success and if necessary following it with others. However, this sequential approach may not address the full extent of discrimination (see Woodhams et al, 2013), leaving many opportunities that lead to pay growth, such as training and development and applications for promotion, more difficult for people with more than one disadvantaged identity to access. Organisations, no matter how keen they are to promote best practice in equality, may overlook the inequality that employees with multiple disadvantage face. Regarding pay and pay growth, for example, a well-meaning

organisation may conduct an Equal Pay Audit following step-by-step advice from the Equality and Human Rights Commission (2012), but therein the explicit focus is limited to those identified by a single axis of disadvantage. For example, organisations are encouraged to:

- Compar[e] the pay of men/women; minority ethnic/white; disabled/non-disabled staff ... doing equal work.
- Clos[e] pay gaps that cannot satisfactorily be explained on grounds other than one of the protected grounds.

The assumption within this mono-dimensional comparative approach is that, if no significant differences are found in the circumstances between one group and their binary pairing, there is no evidence for discrimination.

We are now in a position to consider (and explore) some possibilities around wage growth amongst multiple disadvantaged groups, and the impact of merit-pay in particular. In respect of wage growth generally, we might expect to see the general trend of narrowing pay gaps for single categories being reflected in the position of multiple disadvantaged groups. However, given recent evidence that pay gaps for multiple disadvantaged groups are often larger than would be expected if one simply added the impact of their single disadvantages (Woodhams et al, 2013), it is possible that the narrowing of pay gaps for these groups might happen at a slower pace. In other words, whatever factors are causing multiple disadvantaged groups to do worse may also slow their rate of ‘catch up’. In respect of wage growth that is due solely to merit-pay, there are grounds for expecting to find the same pattern. As people with multiple disadvantages are under-protected by law and organisational practice, they are likely to be particularly vulnerable to inequalities arising from merit pay schemes. There is plenty of evidence for such inequalities arising. Furthermore, if people with a single disadvantage suffer from merit-pay acting as a trigger of bias, and from the unequal

effects of the social construction of merit, there are reasons to expect that people with multiple disadvantage (vulnerable to more sources of bias, and with more barriers to achieving ‘merit’) would fare even worse. In short, there are good reasons to expect that the wage growth resulting from merit-pay would be lower for people with multiple disadvantages than for those with one or none; and that wage gaps arising from merit-pay would, all things being equal, be widening rather than narrowing.

### **Research Questions**

In exploring these possibilities, we pose two research questions:

1. *Are rates of wage growth lower for those with single and multiple disadvantaged identities than they are for other employees?*
2. *Are the rates of wage growth due to merit-pay lower for those with single and multiple disadvantaged identities than they are for other employees?*

### **Data Collection**

Data are from a private sector organisation with a very large workforce. The dataset represents multiple years of employee data from the previous decade. The sample is limited to the UK workforce of this company. The total number of observations is 393,710. Our need to preserve the anonymity of the organisation limits the details we can give, including its sector. Its occupational profile is varied and includes managerial, technical, professional, skilled and non-skilled employees.

The advantage of using single-company data in uncovering pay growth inequalities is that we are able to limit the influence of sectoral, industrial and some occupational effects that influence rates of pay growth. In addition, by using internal pay data at the individual employee level and linking it to their personal employment history, we are able to use statistical techniques that control for the influence on pay growth of other factors such as age, length of service, the different career paths of part and full time workers, promotions to new grades, vertical segregation to a limited extent, and geographical region (Henley and Thomas, 2001). In doing so, we effectively isolate the characteristics under scrutiny, i.e. the merit-pay element and the three identities of disadvantage: gender, ethnicity and disability. The large sample size means we are able to test for the outcomes of multiple-group membership.

## **Methods**

Data for this study was obtained from the organisation's management information system via a third-party outsourced HR agency with express permission from senior managers of the case study organisation. The employee data in the information system is gathered at entry to the organisation and followed up in annual monitoring exercises.

Variables that are utilised in this study are:

- *Ethnicity*
- *Disability status*
- *Sex*
- *Length of service*

- *Promotion*
- *Age*
- *Geographic location*
- *Grade*
- *Part time/full time status*
- *Pay*
- *Year of data collection*
- *Internal inflationary rate.*

These variables require further explanation. Further information on variables and relationships between variables can be found in Table 1.

**Insert Table 1 here**

In the original dataset, ethnicity was represented by five categories: White, Black, Asian (including Indian), Asian Oriental (including Chinese) and ‘other ethnicity’. Category membership is self-nominated according to ‘country/region of origin’.<sup>1</sup> Because of the need to populate our multi-tiered disadvantage model with numbers that are viable in testing our research questions, categories were collapsed into ‘white’ and ‘ethnic minority’. Missing and ‘other ethnicity’ responses to this question were excluded.<sup>2</sup>

Disabled status was also self-determined. Guidance at the point of data collection suggested that employees should assess their status using the definition in the Disability Discrimination Act (1995).

---

<sup>1</sup> Categories of BME membership are taken from the organisation and do not conform to CRE current or contemporaneous recommended terminology.

<sup>2</sup> In limiting our categories to two ethnic variants we recognise the loss of valuable ethnicity data.

Data representing sex, length of service, promotion, and age are largely self-explanatory. For the purposes of analysis, scale data for length of service was categorised into five-year bands. Age was expressed as a continuous variable with the addition of a squared term to capture typical age–wage curvature. Promotion was measured using an integer indicating how many times an employee had been promoted. Part-time pay rates are expressed as an equivalent full-time salary. Geographic region was categorised into seven areas including Scotland, Northern Ireland and Wales. London is classified separately. It could be argued that the dataset is limited by the unavailability of data on education, experience and performance, which are important determinants of pay, and, in particular, the merit-based element of pay. However, as job grades are (reportedly) determined by human capital factors on appointment, it is likely that education and experience are largely captured within ‘grade’. We deal with the merit element below.

Given the need to maintain the confidentiality of the organisation at the heart of this study, detail on pay and grade structure is limited. Grade is represented in the organisation by eleven hierarchical bands. The organisation overhauled its existing grade structure before data was collected for this study, replacing a complicated arrangement of job roles and long pay bands with a system of job families linked to shorter bands. The stated intention was to achieve consistency in reward whilst helping to improve flexibility by better reflecting differences in market rates and changes in the external environment and also recognising and rewarding individual contribution. This approach is in line with contemporary reward management theory and practice (CIPD, 2011; Phillips, 2008; Campbell et al., 1998), with the latter aspect reflecting the belief that those who contribute most to an undertaking should be the ones who reap the greatest rewards. In line with this strategy, the organisation operates a

system of pay progression that combines annual incremental rises with merit awards. Individuals receive each year both an incremental award (unless they are at the top of a scale) and a merit award that comprises up to 20% of their salary.

Our analysis uses salary data from multiple consecutive years. For reasons of anonymity we avoid identifying exact organisation size, and have therefore obscured the number of years of data measurement. We can say that wage growth is determined over the ‘medium term’. To remove the influence of new appointees replacing leavers at higher rates, thereby inflating the average pay of each group, only those who were employed throughout the period of measurement are included in the dataset. The dataset includes multiple years of pay data, so it is adjusted across years to account for general increases in pay (company wage inflation). This is done by adjusting actual (nominal) pay figures using an index of annual pay growth across the company as a whole.

### **Methods of Analysis**

As previously explained, and following on from our work on multiple disadvantages and pay rates (Woodhams et al, 2013), our objective in this paper is to explore the wage growth of groups with multiple disadvantaged identities. We wish to determine whether the wage growth of the privileged group differs from groups of employees with one, two or even three layers of disadvantage. To determine this, we have four analytical components to our data analysis.

The analytical steps are:



1. To address our first research question, we calculate average pay for year<sub>0</sub> – representing our start year – and year<sub>0+n</sub> representing our final year of measurement. We calculate pay gaps relative to privileged groups and increases/decreases to the pay gap over the period of study. We undertake Scheffe’s multiple comparison tests to identify whether pay rates of groups of people with disadvantages are significantly different (or not) from their privileged comparators and Tukey’s HSD test to determine the size of the difference.
2. Next, to address our second research question about the impact of merit-pay on pay growth, we control for variables that influence aspects of the reward package. We estimate an OLS (log) pay regression model with robust standard errors and pay as the dependent variable. The regression holds age, length of service, promotion, job grade, part-time/full-time work, inflationary rate and region constant with a disadvantage#year interaction term. This term identifies wage growth coefficients (expressed in percentage terms from the base year) for each year by disadvantage group (for single-axis groups and combinations of gender, disability and ethnicity). As these tests control for the influence of pay awards arising from inflation, promotion, length of service, relocation and the net effect of staff turnover (i.e. cohort effects as poorly paid workers leave and better qualified, better paid ones join), the vast majority of pay progression that we report using regression tests, i.e. ‘adjusted’ data, will be derived from merit awards.
3. From this pay regression we use a post-estimation pairwise comparison (*t*) of wage growth coefficients over time to test the significance of the differences in wage growth between each disadvantaged group and their privileged counterpart.
4. Finally, to integrate wage gap and wage growth data we substitute the final year pay rate into our spreadsheet and estimate wage growth in cash terms for each year and group going forward until pay is either equalised or diminished to a proportion of the wage of the

privileged group. This we call the rate of ‘catch-up’. We extrapolate catch-up rates for both the raw, unadjusted pay growth data achieved within step 1 and the adjusted pay growth data within step 2 to determine the effectiveness of each in achieving equity.

All tests are undertaken for single-axis, paired and triple-axis levels of disadvantage. Data analysis is undertaken within the analytical programme STATA.

## **Findings**

We open our findings section with two tables that address the first research question. Tables 2 and 3 give establishing mean pay data on groups defined by single-axis identity characteristics and sub-groups, i.e. double and triple-axis identity groups. We analyse differences between groups and calculate pay gaps and pay growth, i.e. reductions/increases in pay gaps.

### **Insert Table 2 here**

Data in Table 2 are interesting, but contain few surprises. Year<sub>0</sub> pay figures in Table 2 show that the privileged groups are combinations of the male, white group and non-disabled identity groups. Combinations of identity including being female, disabled or from an ethnic minority are associated with lower pay. There is also a clear inverse relationship between layers of disadvantaged identities and average pay. Pay rates fall and pay gaps widen as layers of disadvantage are added. Comparisons of pay differences are significant between groups. The trend is almost completely linear. The exceptions in Table 2 are two categories of ethnic minority disabled workers where the pay level is higher and the pay

gap smaller than might be expected. These sub-samples comprise only 0.10% and 0.02% of the total sample, therefore findings are less robust and open to the influence of a small number of highly paid outliers.

### **Insert Table 3 about here**

Figures from our final year (Table 3) of measurement are similar; Year<sub>0+n</sub> figures in Table 3 show the rank ordering of salaries within groups is maintained. All differences in pay between individuals and their privileged counterparts in year<sub>0</sub> and year<sub>0+n</sub> are statistically significant with the exception of the same small group: ethnic minority disabled women (0.04% of the sample). Both years of measurement show gender differences as the most significant.

Pay gaps for disabled workers and sub-groups of disabled workers are largest. Within the double-axis identity groups, disabled women have a particularly substantial pay gap (23.08% in Year<sub>0</sub> and 21.06% in Year<sub>0+n</sub>). Amongst the male groups, disability has a significant impact also. Ethnic minority men *without* disabilities have the lowest pay gap of the triple-identity disadvantaged groups (6%, but adding disability to it increases it considerably to 10.46%). The pay gap is also considerable for women, at 12.84% less than the male wage in the first year of measurement, falling to 9.31% in the final year.

This observation on the decreasing pay gap brings us to our main focus in this paper: analysis of pay growth. We note in the two right hand columns of Table 3 (the difference between pay rates in year<sub>0</sub> and year<sub>0+n</sub>) that pay gaps are reducing and pay is converging. For women, when defined as a single-axis group, the gap is decreasing fairly rapidly, being 23.34% less over the duration we measured. The final column shows

that pay equity (catch-up) with the privileged group can be achieved in just over 17 years if growth is maintained at this rate. Nevertheless, inspection of double- and triple-axis groups of women demonstrates that this gain operates in an uneven fashion; largely to the benefit of groups of non-disabled women. The pay gap for disabled women decreases at a much slower rate (8.78%) and equality will take 45 years 6 months to achieve. Once ethnicity is added to the profile of this group, the pay gap widens. Overall, there is little pattern to unadjusted pay growth during our measurement period, with the exception that disability within all groups is linked to slower growth.

For our purposes, these sets of findings are useful. They indicate an inverse correlation between average pay (see also Woodhams et al, 2013), pay gaps and layers of disadvantaged identity and they indicate that disability may impede pay growth. However, it is also the case that unequally experienced pay growth may be a function of other variables. For example, it is likely that promotions (i.e. movement between grades) will be unevenly experienced, perhaps favouring the already privileged; that employees in London (which will include a higher proportion of ethnic minorities) will receive higher cost-of-living pay awards than those in regions with lower living costs; that part-time workers will receive fewer opportunities to boost their pay; and that that long service may negatively influence pay growth because of its association with disability. The influence of these and other variables will be incorporated into variations of average base pay (e.g. annual increments, promotion to new grade, location allowances) and will confound the data in Tables 1 and 2.

In contrast, the merit-based contribution to pay growth should, if it is operating according to good practice, be more evenly distributed. Therefore, to isolate the impact of merit-pay on the pay growth of each individual (or combination of) disadvantaged identity on pay growth, controlling for other variables, we undertook sets of log regression analyses. These sets of analyses address Research Question Two.

Findings are presented in Tables 4–6. Within each pay comparison, the base group is that with the highest pay rate in the zero year of measurement, and is denoted in italics. We include a column that indicates layers in comparison with the privileged group. We also include a column on the right hand side that indicates years to catch up, using only the merit element of pay.

**Insert Table 4 about here**

The first point to note regarding Table 4 is that the explanatory power of each regression equation is very high, accounting for about 99% of the variance in pay growth for all groups. This gives us a great deal of confidence in the robustness of our dataset, i.e. that we have captured and controlled almost all factors that determine wage growth and, in doing so, have isolated the impact of the merit-based element. The second point to note is that once we have introduced controls, the merit element of pay *reduces* in real terms during the measurement period.

Table 4 shows us that women have a significantly different merit-based pay growth rate than men and that there is not much difference in growth rates between disabled and non-disabled workers nor ethnic minority compared with white workers (although still statistically significant). Women demonstrate the most favourable pay growth statistic; their merit-based pay (in real terms) only *decreased* by 4.93%, whereas for men the figure is 5.17%. This equates to a narrowing of the pay gap attributable to the merit-based element by nearly 5% over the period, a small, but significant, correction to pay inequity. However, because the portion of pay that is determined by merit-pay within overall pay is a maximum of 20% of salary, and less in many cases, the catch-up rate until pay equality is reached is low. If women were to rely on merit-based pay alone to

ameliorate the pay gap, equity would take 203 years and 2 months to achieve. For disabled workers and ethnic minorities, the catch up rate is even lower.

To continue our investigation of issues raised within Research Question 2, the question now is: how will merit-based pay growth rates respond when more layers of disadvantaged-identity are introduced to the single-axis profiles? Is there an association between layers of disadvantaged identity and merit-based wage growth? Table 5 gives the growth rates of groups defined by double-axis identities.

### **Insert Table 5 about here**

This first point to note here is that once groups are subdivided into double-axis identity groups, rates of growth develop a pattern. Contrasting with the analysis of raw growth rates above, under adjusted conditions we can discern an association between more favourable rates of merit-based pay growth (i.e. smaller decreases) and those with more layers of disadvantaged identity. The difference in rate of change in pay growth between groups is not large; however, the pattern is consistent. As layers of disadvantage mount, the pay growth (i.e. rate of loss) becomes more favourable and the proportional reduction in the merit-based pay gap increases. We note that the trend is not completely uniform; the growth in pay of disabled ethnic minority workers is *slower* than the privileged comparator and catch-up is therefore an irrelevant concept. It is likely that a ‘normalising’ effect of a very few highly paid women is causing wage growth in this group to be depressed.

Also again apparent is a robust correction-effect for all groups of women. Ethnic minority women have the strongest merit-based growth of all. Disabled women, in particular, experience a merit-based growth rate that is stronger than would be predicted from their comparatively slowly

decreasing unadjusted pay gap, as shown in Table 2 (only 8.78% of a large pay gap was ameliorated during the period). In explanation, it is likely that because disability is associated with age and wages are depressed in cohorts of older women (Metcalf, 2009), adjusting for the effects of age has allowed a more accurate portrayal of the growth potential of disabled women's pay to emerge.

Finally, and to see if the trends identified above hold, we calculated pay growth for groups identified by triple-axis difference.

**Insert Table 6 about here**

The set of regression tests that examine groups defined by triple-axis combinations of identity demonstrates that trends established in previous tables are broadly maintained. Again, there is an interactive effect. More favourable merit-based pay growth rates are experienced by those who have more layers of difference and these differences accrue exponentially, as opposed to additively. The time it will take to catch up/achieve pay equity – if working from a merit basis alone – is lengthy; however, the more 'disadvantaged' identities the group has, the more this time period reduces. The effect, once again, is most noticeable for groups of women. However, as is anticipated by now, the ethnic minority disabled female group demonstrates no growth in comparison with the privileged male group. This outcome seems to fly in the face of general trends; however, because of the unusually high mean salary of this group, it appears that the correctional potential of merit-pay is having a normalising effect on the pay of this group, only this time in the opposing direction to the general trend.

Finally, two points of note: as male groups are distilled into constituent sub-groups, merit-based pay growth strengthens. When compared with the growth in pay of women, both white and ethnic minority disabled men have weak pay growth, although it is still stronger than ‘privileged’ men.

### **Summary of Findings**

The purpose of this paper is to examine wage growth of people with labour market disadvantage(s) in relation to gender, ethnicity and disability. Our first aim was to establish whether this growth was stronger relative to privileged groups, leading to a narrowing of pay gaps, and, if so, whether groups with more than one advantage were closing these gaps more quickly or more slowly. Our second aim was to establish the impact of merit-pay on the relative wage growth of groups with one or more labour market disadvantage. Our conclusions are as follows. Firstly, pay progression in this organisation is working to the benefit of groups of multiple-disadvantaged identities, serving to close the pay gaps between them and their privileged counterparts. There is no clear pattern to suggest that rate of closure differs in relation to the number of disadvantages that someone carries. However, when the impact of merit-pay is isolated, we found the following: 1. Merit-pay alone has a very small impact on wage growth. 2. The effect of merit-pay is generally positive, but very marginal – if merit-pay were the only contributory factor in narrowing pay gaps in this organisation, they would take many centuries to be eradicated. 3. Merit-pay has a more favourable impact on women’s pay growth than it does on people from ethnic minorities or those with disabilities. 4. The pay growth of women with other disadvantages (in relation to ethnicity or disability) is stronger than the pay growth for men in those groups. 5. There is a general pattern that the more identities of



disadvantage that someone has, the greater effect that merit-pay has in reducing the pay deficits they experience. This effect is interactive, not additive.

## **Discussion**

The first conclusion – that the pay of disadvantaged groups is rising faster – is interesting. Pay progression can be attributed to a combination of annual incremental awards, cost of living rises and merit awards – and in interpreting this finding we need to consider the possible impact of each. Cost of living pay rises will have a neutral effect on all groups (in percentage terms: in cash terms, gaps will widen). There is also a good case to suggest that incremental pay awards will have a neutral effect on relative pay progression, as all employees in the organisation – regardless of identity – move up their pay scale each year. This issue, however, may be more complex. Employees at the top of their pay scale do not receive incremental pay increases, and the dynamics of unequal pay would suggest that a higher proportion of these employees would be from privileged groups. This may arise from, for example, a greater likelihood for a white man to be initially appointed to a higher grade – or grade point – than would be the case for a woman or an employee from a minority group. If this is the case, there will be a ‘topping off’ effect whereby the pay of people in disadvantaged groups progresses more quickly by virtue of their moving up incremental scales, while their more privileged colleagues can no longer do so. Our data do not allow us to identify or rule out such an effect, but in any case, it is likely to be a relatively limited contributory factor in an organisation with short incremental pay bands, such as this one. A more likely cause would be an improvement in equality/diversity practice in the organisation, and while we have some information to indicate that this has happened, our data do allow us to support this suggestion directly. If this were the explanation for declining wage gaps, it would beg the question as to why the pay

gaps for people with disabilities are closing more slowly than the general trend. Empirical research suggests that the disability related wage gap is caused by discrimination and ‘unobserved’ differences in productivity; wage differences are suggested to be linked to characteristics associated with lower productivity (Malo and Pagan, 2012), differences in human capital and job related characteristics, and attitudinal barriers (Schur et al., 2009). In the context of this range of inhibitors, it is possible that these barriers to progression of people with disabilities are particularly entrenched and take longer for organisational equality policies to ameliorate.

We now consider our conclusions on the impact of merit-pay. There is an extensive literature to suggest that merit-pay would be an unlikely contributor to the narrowing of pay gaps in relation to equality strands (Castilla and Benard, 2010; Elvira and Graham, 2002); indeed, the expectation would be that merit-pay systems will reinforce and exacerbate inequalities of these sorts. However, our findings here suggest that merit-pay is actually contributing positively to differential wage growth and thus to the narrowing of pay gaps – albeit very slowly. While such a conclusion runs counter to the critical literature on the impact of merit-pay it should not lead us to dismiss that literature or draw a generalised conclusion that merit-pay is a positive force in reducing payment inequalities. Organisation-specific factors are likely to be at play. For example, this organisation underwent an Equal Pay Audit during the research period, and, notwithstanding theoretical weaknesses explored above, it may be that this resulted in particularly careful attention being given to the design, implementation and operation of the merit-pay scheme. Our need to preserve the anonymity of the organisation means that we cannot explore these avenues further. It does appear, however, that in this organisation the impact of the merit-pay system appears to be more equality-friendly than the historical impact of recruitment and promotion decisions (i.e. those that contribute to existing pay gaps). This finding is consistent with a view that, for all their documented weaknesses in this

regard (Elvira and Graham, 2002; Salimäki and Jämsén, 2009), merit-pay judgments may be less vulnerable to bias than appointment decisions, where managers have less reliable information on capability work performance, which can counteract the influence of any prejudices and stereotypes that they may have (Cohen, 1976).

It is worth reflecting further on the finding that minority and disadvantaged groups are not only reaching the threshold of 'fair treatment' under this organisation's system of pay progression, they are actually slightly better rewarded than those who are traditionally privileged, and are slowly closing the wage gaps that are known (generally) to be caused by discrimination, occupational segregation and (possibly) choice. Reverse or positive discrimination is culturally unacceptable and unlawful in the UK, so this is highly unlikely to be a deliberately caused effect. However the notion that minority groups might unintentionally be privileged in pay progression goes so strongly against the grain of the literature on prejudice, bias and the effects of the social construction of merit (Kumra, 2010; Thornton, 2007) that this also seems unlikely.

One response would be to reintroduce an objectivist view of merit and accept that this complements the evidence that minority groups are benefiting from its application – indeed, Farber and Sherry (1995) have warned of the implications of not doing so. However this leads to another, possibly uncomfortable, suggestion that people from disadvantaged and minority groups have more 'merit' in this organisation. We can think of one way in which the findings can be explained without having to concede the idea that 'merit' is unevenly distributed (by group membership) in the population. If minorities were disadvantaged at or before entry to the organisation, those who were appointed would have to be particularly able and determined to overcome this. These capabilities would, in a fair merit scheme, be recognised – leading to higher average merit awards for minorities. Further, those members of minority groups who were successful in getting appointed to the organisation may have

done so at a level below their capabilities – for example, they may be over-qualified (Elliot and Lindley, 2008). Following the reasoning above, one would expect merit-pay awards to act as a correction to this.

Such an explanation cannot be verified (or discounted) in this research due to limitations in the variables in our dataset<sup>3</sup>. It would, however, be entirely consistent with another of our findings – that those with more labour market disadvantages are benefiting more from merit-based pay progression. As we have shown elsewhere with cross-sectional data (Woodhams et al, 2013), multiple disadvantage has a strong negative association with pay outcomes, so the fact that here this is associated positively with faster pay progression begs an explanation. The notion that merit-pay is acting as a corrective to the effects of discrimination or segregation effects at appointment could offer an explanation.

We also concluded that the benefits accruing from the corrective effect of merit-based pay progression are uneven. We observed that merit-pay contributed more to the closing of gender pay gaps than it did to others, particularly those relating to disability. Other studies have indicated that people with disabilities have lower access to formal and informal training, and less occupational experience (Schur et al., 2009; O’Hara, 2004). In other contexts, factors such as these have been linked to lower merit awards (O’Hara, 2004), and would be a plausible explanation for the reduced rate of merit-pay ‘catch-up’ observed here.

---

<sup>3</sup> Data on educational qualifications and experience would be useful here. Data on social class and levels of productivity/performance would also supplement our data. However, since the dataset (in terms of explaining variance in pay) is nearly complete (99% in most cases), including these variables would not add much explanatory potential to the analysis.

We also observed that disadvantaged men (i.e. ethnic minority or disabled) are benefiting less through merit-pay progression than women with these disadvantages. In terms of average pay (as opposed to pay progression), Woodhams et al (2014) have shown that men are disadvantaged to a greater degree by carrying additional disadvantaged identities than are women. The findings in the current study run in parallel. To the extent to which there is a corrective effect arising primarily from merit-pay, men with other disadvantages are less able to take advantage of it. An explanation for this may lie in the notion of hegemonic masculinity (Carrigan et al., 1985; Collinson and Hearn, 1996). Particular versions of masculinity are privileged – in contemporary western societies, being white and being non-disabled would be among those privileged identities. Varying from that ideal has a more detrimental effect for men than for women varying from already less-privileged ‘feminine’ identities. In an employment context, men have more to lose from compromises to their masculinity (Author, 2000). This may also help to account for the fact that white disabled men are closing the pay gap slowest of all groups. Hegemonic masculinity also often carries with it notions of idealised ‘manliness’, physicality and technical proficiency (Fuller, 1996), so disabilities arising from some impairments may be constructed in popular discourse as departing from this ‘ideal’. The literature on the social construction of merit (Kumra, 2010) would suggest that, for the purposes of performance pay systems, merit may be constructed around this ideal form of masculinity. This may have a particularly strong impact in organisations that are traditionally dominated by men and masculine values, and/or notions of ‘technical’ expertise, as are most of the large UK-based organisations of which the case organisation is one.

To conclude, it is worth reflecting on the extent to which our findings run counter to expectations, not least our own. In the context of a well-established, and, in our view, generally persuasive literature to the contrary, it is surprising to find such clear evidence that merit-pay has

beneficial effects – albeit small ones – on payment equality. In making these claims we are aware that our study is not perfect in design or execution. We acknowledge that we are limited by our inability to give operational details of the merit-based pay scheme and the exact size of the organisation. We are constrained by our methodology in that we have an imperfect dataset, particularly in relation to entry capital. We recognise also that data limitations mean that we have reduced complex identities to three categories of disadvantage. We also acknowledge that the ontological and epistemological assumptions we make about the value of the categorical approach to studying detriment experienced at intersections may not persuade all commentators (see also McCall, 2005), and this acknowledgement has important implications for our suggestions for future research (see below). Finally, whilst we recognise that our findings are consistent with a view that there may be some merit in ‘merit’ (Farber and Sherry, 1995), and indeed in merit-pay (from an equality perspective), for the reasons given we would not wish to see the study interpreted as a wholesale rejection of the critical merit/merit-pay literature.

In spite of these limitations, this research study is successful in demonstrating, through a controlled research design, connections between labour market disadvantage and pay growth. These suggest a general closing of pay gaps, for single and multiple disadvantage groups, and indicate that merit-pay has a very slightly better-than-neutral effect on the pay of minorities; one that is stronger for women, and for those with more disadvantages. We now consider the implications of these findings for public policy, HR policy and practice and future research.

### **Policy, Practice and Research Agendas**

This research study has uncovered reducing pay gaps for disadvantaged groups and a connection with multiple disadvantaged identities. Overall, an analysis of trends in this organisation demonstrates the corrective potential of good equal pay practice. Possible contributors to this are the Equal Pay Audit, a system of merit-based pay that is operated ostensibly fairly, and short pay bands. Nevertheless, for many individuals with single and multiple categories of disadvantage, the scenario is negative and will remain so for many years. In view of this, we call for an enhanced and robust public policy framework for the diagnosis and redress of discrimination on the basis of dual and multiple disadvantage to accelerate converging pay trajectories in both the UK and US (see also Woodhams et al, 2013). Additionally, our findings suggest that organisations should undertake equal pay diagnostics that disaggregate the workforce into dual and triple axis groups of disadvantage and this advice should be delivered through best practice channels such as the Equality and Human Rights Commission in the UK. Furthermore, HR departments should ensure that managers are well trained in awareness of ways that decision making can be biased in relation to multiple identities as well as single ones – and our research suggests that they should pay particular attention to this in relation to disabled workers.

Finally we offer several suggestions for future research. First, on the basis of our findings we suggest that researchers should revisit the impact of merit-based pay to replicate and elaborate on our findings in other organisations and in different contexts. Second, in order to investigate the narrowing of pay gaps more widely, there is a need for empirical investigation into the connection between multiple disadvantaged identities and pay with the capacity to disaggregate influential factors including promotion and the salaries of new appointees. Finally, as the lively debate into ‘intersectionality’ attests (Bowleg, 2008; Crenshaw, 1991; Denis, 2008; Hofman, 2010; Purdie-Vaughns & Eibach, 2008, Yuval-Davis, 2007), attempts to capture the experience of multiple disadvantage through quantitative analysis are open to criticism. We do not wish to rehearse that

debate here, but we accept many of the espoused limitations of such approaches and have argued elsewhere (Woodhams and Lupton, 2014) for methodological pluralism in this field. Following McCall (2005), we see our inter- categorical approach as providing a foundation for qualitative research which will explore in context the nuances and complexities underlying the broader patterns that we have uncovered, and the detailed connections between pay decisions, HR practices and pay (in-) equalities. Our hope is that our analysis here will stimulate such enquiry.



## References

- Amaran, D. I. (2010) The Gender Pay Gap: Review and Update. *China-USA Business Review*. 9 (6), 51-58.
- Anderson, D. & Shapiro, D. (1996) Racial Differences in Access to High-Paying Jobs and the Wage Gap Between Black and White Women. *Industrial and Labor Relations Review*. 49 (2), 273-286.
- Asplund, R. & Napari, S. (2011) Intangibles and the Gender Wage Gap: An Analysis of Gender Wage Gaps Across Occupations in the Finnish Private Sector. *Journal of Labor Research*. 32 (4), 305-325.
- Blau, F. D. & Khan, L. M. (2006) The U.S. Gender Pay Gap in the 1990s: Slowing Convergence. *Industrial and Labor Relations Review*. 60 (1), 45-66.
- Black, S. E. & Spitz-Oener, A. (2010) Explaining Women's Success: Technological Change and the Skill Content of Women's Work. *The Review of Economics and Statistics*. 92 (1) 187-194.
- Bowleg, L. (2008) "When Black + lesbian + women ≠ Black lesbian woman: The methodological challenges of qualitative and quantitative intersectionality research", *Sex Roles*, 59 (5-6), 312-325.
- Browne, I. & Misra, J. (2003) The Intersection of Gender and Race in the Labour Market. *Annual Review of Sociology*. 29, 487-513.
- Brynin, M. & Guveli, A. (2012) Understanding the Ethnic Pay Gap in Britain. *Work, Employment and Society*. 26 (4), 574-587.
- Butler, K. M. (2010) The Oscars and Overcoming the Pay Gap. *Employee Benefit News*. 15th April 2010.
- Campbell, D. J., Campbell, K. M. & Chia, H-B. (1998) Merit Pay, Performance Appraisal and Individual Motivation: An Analysis and Alternative. *Human Resource Management*. 37 (2), 131-146.
- Carrigan, T., Connell, R. & Lee, J. (1985) *Toward a New Sociology of Masculinity*. *Theory and Society*. 14, 551-604.
- Castilla, E. J. & Benard, S. (2010) The Paradox of Meritocracy in Organisations. *Administrative Science Quarterly*. 55, 543-576.
- Castilla, E. J. (2012) Gender, Race, and the New (Merit-Based) Employment Relationship. *Industrial Relations*. 51, 528-562
- Chartered Institute of Personnel and Development (2011) *Reward Management Annual Survey Report 2011*. CIPD: London.

- Cohen, S. (1976) The Basis of Sex-Bias in the Job Recruitment Situation. *Human Resource Management*. 15 (3), 8-10
- Collinson, D. L. & Hearn, J. (1996) Breaking the Silence: On Men, Masculinities and Managements. In: D.L. Collinson & J. Hearn (ed.) *Men as Managers, Managers as Men: Critical Perspectives on Men, Masculinities and Managements*. London: Sage.
- Compensation and Benefits for Law Offices (2007) Merit-Based Pay and Increases Now Overshadow ‘Traditional’ Approaches, New Data Show. *Compensation and Benefits for Law Offices*. 7 (10), 7.
- Crenshaw, K. W. (1991) Mapping the Margins: Intersectionality, Identity Politics and Violence against Women of Color. *Stanford Law Review*. 43 (6), 1241-1299.
- Denis, A. (2008) Intersectional Analysis: A Contribution of Feminism to Sociology. *International Sociology*. 23, 677–694.
- Dohmen, T. & Falk, A. (2011) Performance Pat and Multidimensional Sorting: Productivity, Preferences, and Gender. *American Economic Review*. 101 (2), 556-590.
- Equality and Human Rights Commission (2012) *Carrying Out an Equal Pay Audit*. [Online] Available: <http://www.equalityhumanrights.com/advice-and-guidance/tools-equal-pay/equal-pay-audit-toolkit/carrying-out-an-equal-pay-audit/>. Date accessed: 25th September 2012.
- Elliott, R. J. R. & Lindley, J. K. (2008) Immigrant Wage Differentials, Ethnicity and Occupational Clustering. *Journal of the Royal Statistical Society Series A*. 171 (3), 645-671.
- Elvira, M. M. & Graham, M. G. (2002) Not Just a Formality: Pay System Formalization and Sex-Related Earnings Effects. *Organization Science*. 13 (6), 601-617.
- Eveline, J. & Todd, P. (2009) Gender Mainstreaming: The Answer to the Gender Pay Gap? *Gender, Work and Organization*. 16 (5), 536-558.
- Farber, D. A. & Sherry, S. (1995) “Is the radical critique of merit anti-Semitic?”. *California Law Review*. 83, 853-883.
- Fiske, S. T. (1998) Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, and G. Lindzey, (eds) *Handbook of Social Psychology*. McGraw-Hill, New York. 357-411.
- Fredman, S. (2011) The Potential and Limits of An Equal Rights Paradigm in Addressing Poverty. *Stellenbosch Law Review*. 22.

- Fuller, P. (1996) Masculinity, Emotion and Violence. In: L. Morris and E. Lyon (eds.) *Gender Relations in Public and Private: New Research Perspectives*. Basingstoke: McMillan.
- Green, C and Ferber, M.A (2005) "Do Detailed Work Histories Help to Explain Gender and Race/Ethnic Wage Differentials?" *Review of Social Economy*, Vol LX111, 1, 55-85
- Grimshaw, D., Whitehouse, G., & Zetlin, D. (2001) Changing Pay Systems, Occupational Concentration and the Gender Pay Gap: Evidence from Australia and the UK. *Industrial Relations Journal*. 32 (3), 209-229.
- Gunderson, M. (1975) Male-Female Wage Differentials and the Impact of Equal Pay Legislation. *The Review of Economics and Statistics*. 57 (4), 462-469.
- Hakim, C. (2011) *Feminist Myths and Magic Medicine: The Flawed Thinking Behind Calls for Further Equality Legislation*. Centre for Policy Studies, London.
- Hannett, S. (2003) Equality at the Intersections: The Legislative and Judicial Failure to Tackle Multiple Discrimination. *Oxford Journal of Legal Studies*. 23 (1), 65-86.
- Henley A. & Thomas D. (2001) Public Service Employment and the Public-Private Differential in British Regions. *Regional Studies*. 35 (3), 229 – 240.
- Hofman, N. (2010) Understanding Women's Work through the Confluence of Gender, Race and Social Class. *Cultural Dynamics*. 22 (3), 179-195.
- Kumra (2010) The Social Construction of Merit in a Professional Services Firm: Who Is In and Who Is Out? Paper presented in Gender in management Stream. *British Academy of Management Conference Sept 2010*. Sheffield.
- Longhi, S. & Platt, L. (2008) *Pay Gaps across Equality Areas*. Equality and Human Rights Commission.
- Lupton, B. (2000) Maintaining Masculinity: Men Who do "Women's Work". *British Journal of Management*. 11, S33-S48.
- Malo, M. A. & Pagán, R. (2012) Wage Differentials and Disability Across Europe: Discrimination and/or Lower Productivity. *International Labour Review*. 151 (1-2), 43-60.
- Manning, A. & Saidi, F. (2010) Understanding the Gender Pay Gap: What's Competition Got To Do With It? *Industrial and Labor Relations Review*. 63 (4), 681-698.

- Mason, P. L. (2011) Moments of Disparate Peaks: Race-Gender Wage Gaps Among Mature Persons, 1965-2007. *Review of Black Political Economy*. 38 (1), 1-25.
- McCall, L. (2005) The Complexity of Intersectionality. *Journal of Women in Culture and Society*. Spring 2005. 1771-1800.
- McGregor, J. (2008) Merit Pay? Not Exactly. *BusinessWeek*. Issue 4100. Page 17.
- Metcalf, H. (2009). *Pay Gaps across the Equality Strands: A Review*. Equality and Human Rights Commission Research Report (14).
- Neumark, D. (1999) Wage Differentials by Race and Sex: The Roles of Taste Discrimination and Labor Market Information. *Industrial Relations*. 38 (3), 414-444.
- Niederle, M. & Vesterlund, L. (2007) Do Women Shy Away From Competition? *Quarterly Journal of Economics*. 122 (3), 1067–1101.
- O’Hara, B. (2004) Twice Penalized: Employment Discrimination Against Women With Disabilities. *Journal of Disability Policy Studies*. 15 (1), 27-34.
- O’Neill, J. (2003) Catching Up: The Gender Gap in Wages, Circa 2000. *AEA Papers and Proceedings*. May, 309-314
- ONS (2011). *Office for National Statistics, Annual Survey of Hours and Earnings*. Release 23rd November 2011.
- Orrenius, P. M. & Zavodny, M. (2008) The Effect of Minimum Wages on Immigrants’ Employment and Earnings. *Industrial and Labour Relations Review*. 61 (4), 544-563.
- Perfect, D. (2011). *Gender Pay Gaps, EHRC Briefing Paper 2*. Equality and Human Rights Commission.
- Perkins, S & White, G (2010) Modernising Pay in the UK Public Services: Trends and Implications. *Human Resource Management Journal*. 20 (3), 244–257
- Phillips, L. (2008) Firms Prefer Merit-Based Pay to Yearly Rises For All. *People Management*. 14 (2), 11. CIPD.
- Purdie-Vaughns, V. & Eibach, R. P. (2008) Intersectional Invisibility: The Distinctive Advantages and Disadvantages of Multiple Subordinate-Group Identities. *Sex Roles*. 59 (5), 377-391.
- Reskin, B. F. (2000) The Proximate Causes of Employment Discrimination. *Contemporary Sociology*. 29, 319-329.
- Salimäki, A. & Jämsén, S. (2009) Perceptions of Politics and Fairness in Merit Pay. *Journal of Managerial Psychology*. 25 (3), 229-251.

- Schur, L., Kruse, D., Blasi, J. & Blanck, P. (2009) Is Disability Disabling in All Workplaces? Workplace Disparities and Corporate Culture. *Industrial Relations*. 48 (3), 381-410.
- Sayers, R. (2012) The Cost of Being Female: Critical Comment on Block. *Journal of Business Ethics*. 106 (4), 519-524.
- Shapiro, D. & Sandell, S. H. (1985) Age Discrimination in Wages and Displaced Older Men. *Southern Economic Journal*. 52 (1), 90-102.
- Son Hing, L. S., Bobocel, D. R., Zanna, M. P., Garcia, D. M., Gee, S. S. & Oraziotti, K. (2011) The Merit of Meritocracy. *Journal of Social Psychology*. 101 (3), 433-50.
- Thornton, M. (2007) 'Otherness' on the Bench: How Merit is Gendered. *Sydney Law Review*. 29 (3), 391-413.
- Woodhams, C and Lupton, B (2014) "Transformative and emancipatory potential of intersectionality research: Making a case for methodological pluralism", *Gender in Management: An International Journal*, Vol. 29 Iss: 5, pp.301 - 307
- Woodhams, C; Lupton, B and Cowling, M (2013) "The Snowballing Penalty Effect: Multiple Disadvantage and Pay". *British Journal of Management* <http://onlinelibrary.wiley.com/doi/10.1111/1467-8551.12032/abstract>
- Woodhams, C; Lupton, B and Cowling, M (2014) "The Presence of Ethnic Minority and Disabled men in Feminised Work: Intersectionality, Vertical Segregation and the Glass Escalator" *Sex Roles: A Journal of Research*. Available online. DOI 10.1007/s11199-014-0427-z
- Weinberger, C. J. (1998) Race and Gender Wage Gaps in the Market for Recent College Graduates. *Industrial Relations*. 37 (1), 67-84.
- Yuval-Davis (2007). Intersectionality, citizenship and contemporary politics of belonging. *Critical Review of International Social and Political Philosophy* 10 (4): 561-574

Table 1: Organisation and sample descriptives, *t*-tests and chi-square statistical tests

	<i>Gender</i>		<i>Ethnicity</i>		<i>Disability</i>		
	n	Male	Female	White	Ethnic minority	Without disabilities	With disabilities
<b>Gender (%)</b>							
Male	307,069	78.1					
Female	86,331		22.0				
<b>Ethnicity (%)</b>							
White	369,800	94.3	92.9	94.0		97.5	2.5
Ethnic minority	23,601	5.7	7.1		6.0	98.1	1.9
		$\chi^2(1, 393,401) = 222.6^{***}$				$\chi^2(1, 393,401) = 31.8^{***}$	
<b>Disability (%)</b>							
With disabilities	9,760	2.4	2.6				2.4
Without Disabilities	393,100	97.6	97.4			97.6	
		$\chi^2(1, 402,860) = 13.5^{***}$					
<b>Mode (%)</b>							
Full-time	384,925	99.8	80.7	95.4	97.2	95.5	95.8
Part-time	17,935	0.3	19.3	4.6	2.8	4.5	4.2
		$\chi^2(1, 402,860) = 5.9e+04^{***}$		$\chi^2(1, 393,401) = 160.6^{***}$		$\chi^2(1, 402,860) = 1.5$ ns	
<b>Length of Service (range 0 -46)</b>		21.3 (7.9)	15.3 (6.5)	20.3 (8.1)	16.7 (6.2)	20.0 (8.1)	20.8 (7.9)
		$t(402,858) = -2.1e+02^{***}$		$t(393,399) = -67.9^{***}$		$t(402,858) = -9.6^{***}$	
<b>Age (range 16-69)</b>		44.0 (7.0)	41.0 (7.8)	43.5 (7.3)	41.5 (6.8)	43.3 (7.3)	45.7 (6.9)
		$t(402,858) = -1.1e+02^{***}$		$t(393,399) = -40.3^{***}$		$t(402,858) = -33.2^{***}$	
<b>Geographic region</b>							
Region 1	105,582	28.1	26.4	27.7	29.6	27.7	28.0
Region 2	75,761	18.7	23.9	21.0	4.8	19.8	24.4
Region 3	92,113	24.9	21.6	24.7	16.7	24.2	22.9
Region 4	12,290	2.9	4.2	3.5	0.4	3.2	4.7
Region 5	30,374	7.5	9.5	8.6	0.3	8.0	6.4
Region 6	10,742	2.7	3.2	3.1	0.1	2.8	2.1
London	54,411	15.2	11.1	11.6	48.2	14.3	11.6
		$\chi^2(6, 381,273) = 2.7e+03^{***}$		$\chi^2(6, 372,447) = 2.7e+04^{***}$		$\chi^2(6, 381,273) = 266.7^{***}$	
n		297,202	84,071	349,677	22,770	371,922	9,351

\*\*\*=  $p < 0.0001$

Table 2: Average Pay Rates: Year<sub>0</sub>

Group	(n) %	Layers of disadvantaged identity	Average pay (£): Year <sub>0</sub>	Pay gap - privileged: disadvantaged group (%)	Test for difference in pay rate (F).
<b>Single Axis</b>					
Men	76.5	0	27530.25		
Women	23.5	1	24174.6	12.18	2029.38***
White	93.9	0	26882.18		
Ethnic Minority	6.1	1	24948.86	7.19	369.48***
Non-disabled	97.6	0	26680.81		
Disabled	2.4	1	22935.0	14.04	213.70***
<b>Double Axis</b>					
Overall = 743.79***					
White Men	72.8	0	27648.44		
Ethnic minority men	4.4	1	25579.43	7.48	43.88***
White women	21.2	1	24245.45	12.30	91.59***
Ethnic minority women	1.6	2	23269.61	15.83	105.23***
Overall = 199.95***					
Non-disabled men	75.0	0	27630.07		
Non-disabled women	22.4	1	24252.40	12.24	48.74***
Disabled men	1.8	1	23472.07	15.05	30.74***
Disabled women	0.6	2	21250.55	23.08	63.99***
Overall = 804.18***					
Non-disabled white	91.6	0	26984.02		
Non-disabled ethnic minority	2.3	1	24970.3	7.46	10.37***
Disabled white	6.0	1	22903.62	15.12	14.14***
Disabled ethnic minority	0.1	2	23667.96	12.29	8.15*
<b>Triple Axis</b>					
Overall = 375.72					
White non-disabled men	71.0	0	27752.0		
Ethnic minority non-disabled men	4.3	1	25617.0	9.09	7.25***
White non-disabled women	20.6	1	24332.0	12.32	14.81***
White disabled men	1.8	1	234791.0	15.42	9.79***
Ethnic minority disabled men	0.1	2	23488.0	15.32	5.99*
Ethnic minority non-disabled women	0.1	2	23256.0	16.20	17.10***
White disabled women	1.6	2	21138.0	23.83	19.64***
Ethnic minority disabled women	0.02	3	24304.0	12.42	17.03ns

\*=  $p < 0.05$ , \*\*=  $p < .001$ , \*\*\*=  $p < 0.0001$

Table 3: Average Pay Rates: Year<sub>0+n</sub>

Group	(n) %	Layers of disadvantaged identity	Average pay (£): Year <sub>0+n</sub>	Pay gap - privileged: disadvantaged group (%)	Test for difference in pay rate (F).	Reduction in pay gap Year <sub>0</sub> - Year <sub>0+n</sub> (%)	Pay Equity (years to catch up)
<b>Single axis</b>							
Men	79.2	0	26952.64				
Women	20.8	1	24434.24	9.34	810.98***	23.34	17.1
White	94.0	0	26517.96				
Ethnic Minority	6.0	1	25040.43	5.57	251.03***	22.52	17.8
Non-disabled	97.6	0	26518.29				
Disabled	2.4	1	22808.72	13.98	94.60***	4.29	93.2
<b>Double axis</b>							
Overall = 299.59***							
White Men	74.7	0	27040.34				
Ethnic minority men	4.5	1	25478.44	5.78	44.52***	22.53	17.5
White women	19.3	1	24489.22	9.43	92.93***	23.35	17.1
Ethnic minority women	1.5	2	23728.04	12.25	106.77***	22.65	17.7
Overall = 117.82***							
Non-disabled men	77.3	0	27040.37				
Non-disabled women	20.3	1	24521.84	9.31	49.44***	23.81	16.8
Disabled men	1.8	1	23254.35	14.0	31.19***	6.96	57.5
Disabled women	0.6	2	21345.69	21.06	64.91***	8.78	45.5
Overall = 353.28***							
Non-disabled white	91.8	0	26611.71				
Non-disabled ethnic minority	5.9	1	25071.45	5.78	10.47***	22.44	98.6
Disabled white	2.3	1	22750.82	14.51	14.27***	4.05	17.8
Disabled ethnic minority	0.1	2	23748.58	10.76	8.23*	12.45	32.1
<b>Triple axis</b>							
Overall = 165.05***							
White non-disabled men	73.0	0	27133.93				
Ethnic minority non-disabled men	4.4	1	25505.21	6.00	9.93***	21.99	18.2
White non-disabled women	18.8	1	24580.7	9.41	7.36***	23.67	16.9
White disabled men	1.8	1	23196.52	14.51	6.08***	5.95	67.2
Ethnic minority disabled men	0.1	2	24294.85	10.46	15.03***	31.75	12.6
Ethnic minority	0.5	2	23765.69	12.41	19.93***	23.38	17.1



non-disabled women							
White disabled women	1.5	2	21260.71	21.64	17.35***	9.19	43.5
Ethnic minority disabled women	0.04	3	22429.99	-17.63	17.28ns	-22.15	-

\*=  $p < 0.05$ , \*\*=  $p < 0.001$ , \*\*\*=  $p < 0.0001$

Table 4: Regression analysis: Merit-based Pay Growth Rates Single-axis groups

Group	Layers of disadvantaged identity	Merit-based Pay Growth: Year <sub>0</sub> – Year <sub>0+n</sub> (%)	Proportional reduction in pay gap Year <sub>0</sub> - Year <sub>0+n</sub>	Test of differences in wage growth between groups ( <i>t</i> )	Pay Equity (years to catch up)
Men	0	-5.17			
Women	1	-4.93	4.64	202.96***	203.2
<b>Plus Controls</b>		yes			
<b>R-squared</b>		0.992			
White	0	-5.13			
Ethnic Minority	1	-5.09	0.78%	67.29***	831
<b>Plus Controls</b>		yes			
<b>R-squared</b>		0.988			
Non-disabled	0	-5.21			
Disabled	1	-5.19	0.38%	-50.29***	2,924
<b>Plus Controls</b>		yes			
<b>R-squared</b>		0.998			

\*=  $p < 0.05$ , \*\*=  $p < 0.001$ , \*\*\*=  $p < 0.0001$

Table 5: Regression analysis: Merit-based Pay Growth Rates: Double-axis groups

Group	Layers of disadvantaged identity	Merit-based Pay Growth: Year <sub>0</sub> – Year <sub>0+n</sub> (%)	Proportional reduction in pay gap Year <sub>0</sub> - Year <sub>0+n</sub> (%)	Test of differences in wage growth with privileged group ( <i>t</i> )	Pay Equity (years to catch up)
White Men	0	-5.13			
Ethnic minority men	1	-5.1	0.58	-69.71***	997.3
White women	1	-4.89	4.68	-202.32***	205.2
Ethnic minority women	2	-4.73	7.80	-107.51***	158.4
<b>Plus Controls</b>		Yes			
<b>R-squared</b>		0.993			
Non-disabled men	0	-5.19			
Disabled men	1	-5.09	0.65%	-203.99***	188
Non-disabled women	1	-4.93	1.95%	-51.38***	602
Disabled women	2	-4.97	4.88%	-73.78***	419.8
<b>Plus Controls</b>		Yes			
<b>R-squared</b>		0.993			

<i>Non-disabled white</i>	0	-5.14			
Disabled white	1	-5.08	1.17	-67.60***	98.6
Non-disabled ethnic minority	1	-5.06	1.15	-50.43***	17.8
Disabled ethnic minority	2	-5.71	-11.09	-24.49***	n/a
<b>Plus Controls</b>	Yes				
<b>R-squared</b>	0.989				

\*=  $p < 0.05$ , \*\*=  $p < .001$ , \*\*\*=  $p < 0.0001$

Table 6: Regression Analysis: Merit-based Pay Growth Rates: Triple-axis groups

Group	Layers of disadvantaged identity	Growth: Year <sub>0</sub> – Year <sub>0+n</sub> (%)	Proportional reduction in pay gap Year <sub>0</sub> - Year <sub>0+n</sub> (%)	Test of differences in wage growth with privileged group ( <i>t</i> )	Pay Equity (years to catch up)
<i>White non-disabled men</i>	0	-5.14			
Ethnic minority non-disabled men	1	-5.10	0.78	-71.01***	910
White disabled men	1	-5.02	2.33	-203.99***	514.3
White non-disabled women	1	-4.90	4.67	-52.25***	205.5
Ethnic minority disabled men	2	-4.85	5.64	-24.46***	211.4
White disabled women	2	-4.65	7.39	-108.56***	250.9
Ethnic minority non-disabled women	2	-4.76	9.53	-73.89***	132.2
Ethnic minority disabled women	3	-6.09	-18.48	-28.97***	n/a
<b>Plus Controls</b>	Yes				
<b>R-squared</b>	0.993				

\*=  $p < 0.05$ , \*\*=  $p < .001$ , \*\*\*=  $p < 0.0001$