

# Employee Participation and Equal Opportunities Practices: Productivity Effect and Potential Complementarities

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## **Abstract**

*The relationships between employee participation, equal opportunities practices and productivity are explored. Data from the British Workplace Employee Relations Survey of 1998 provide strong evidence that equal opportunities practices improve productivity overall, and increasingly so as the share of female and ethnic minority employees increases. However, short-term effects may be negative in segregated workplaces. Non-financial participation schemes are negatively associated with productivity, but in most cases the joint presence of these participatory schemes and equal opportunities practices significantly increases productivity. Interactions between participatory and equal opportunities schemes are also affected by work-force composition and by the level of equal opportunities policies implemented.*

## **1. Introduction**

The idea that participatory practices can affect firm performance is now widely accepted, and an abundant literature on the topic has appeared in the last two decades (see e.g. Jones 1999; Kochan and Osterman 1994). The same period has seen the development of equal opportunities policies to accompany anti-discrimination legislation, and accumulating experience has fed a continuing debate about effective ways to fight discrimination and improve equality of opportunities in the workplace<sup>1</sup> (see e.g. Hodges-Aeberhard and Raskin 1997; Storey 1999). These two debates have been running for the most part separately (but see Shapiro 1999). Yet the two types of practice are related to empowerment at work. Beyond the moral equity issue, equal opportunities practices share with participatory schemes an aim to recognize and encourage the inputs of all groups of employees. The two types of scheme may therefore have similar effects and may

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reinforce each other. In this article we explore how employee participation schemes and equal opportunities policies affect establishment productivity and whether the two types of policies are complementary.

Even though a business case is often made for equal opportunities schemes, firm policies to fight discrimination — or discriminatory practices — have been the subject of little empirical work in relation to organizational performance. Early economic models predicted that wage discrimination among equally productive employees would be eliminated by competition. As a result, much of the economic debate on discrimination has focused on the existence of discrimination and on identifying those factors of women's and ethnic minority men's productivity that are exogenous to the firm (see Arrow 1998; Humphries and Rubery 1995). However, if we look at information and incentive structures inside organizations, equal opportunities practices are likely to affect individual and organizational productivity through much the same mechanisms as many other human resource practices — pay incentives, career opportunities, fairness, opportunities for releasing creativity. In addition, factors of adverse performance specific to discriminatory environments, such as sexual and racial harassment, may be alleviated with anti-discrimination plans. The few existing empirical studies find affirmative action plans to be associated with positive, significant improvements (and discrimination to be associated with a significant disadvantage) in productivity and stock returns (Hanssen 1998; Hersch 1991; Kolpin and Singell 1996; Wright *et al.* 1995).

We argue that anti-discrimination practices should improve organizational productivity on their own, and make participation schemes more effective by making it less likely that only a small group of employees fully participates. In return, participatory practices may help design equal opportunities plans that correspond to the needs of the employees concerned and may remove some of the factors that facilitate harassment in authoritarian workplaces. This potential complementarity may be one of the reasons why enterprises with participatory schemes seem more likely than others to show concern for equal opportunities (Pérotin *et al.* 1998). As a result, estimates of the performance effects of participatory schemes that do not take into account the presence of equal opportunities programmes may be biased. Another implication of complementarity is that the effect of the joint presence of both types of practices may exceed their individual impacts on firm performance. We examine the effects of anti-discrimination policies and participatory schemes in Britain on management's perception of the relative level of establishment productivity, both separately and in interaction with each other when the two types of practices are implemented jointly. In addition, we investigate the possibility that these effects depend on the composition of the work-force and on how extensive equal opportunities policies are in the establishment. The study uses data from the Workplace Employee Relations Survey of 1998 (WERS98).

Section 2 summarizes theoretical arguments relating to employee involvement schemes, equal opportunities practices and organizational perform-

ance, and to the expected effects from the joint implementation of both types of practice. Section 3 describes our empirical strategy, the schemes and practices we take into account and their incidence. Results are presented in Section 4, and concluding remarks are proposed in the final section.

## **2. Theoretical arguments about employee participation, equal opportunities and organizational productivity**

### *Employee Participation*

The potential effects of employee participation on productive efficiency have been extensively discussed. (For surveys of various aspects of the issue, see in particular Ben-Ner and Jones 1995; Estrin *et al.* 1997; Kruse 1993; and Pérotin and Robinson 1998.) Only a brief review of the arguments is provided here.

Employee participation schemes give employees as a group the right to participate in the control of the organization and/or residual rights to its returns (Ben-Ner and Jones 1995). Participation includes a variety of practices involving a range of control and/or return rights, from direct or representative forms of participation in control such as two-way communication schemes, quality circles, autonomous teams, works councils and joint consultative committees to full worker self-management, as well as profit-sharing and employee share ownership schemes. It is distinct from forms of employee involvement in which employees as a group have no residual rights over the firm's surplus and no decision power, and where the extent of employee input is entirely subject to management discretion — such as small-group or individual performance pay schemes and suggestion boxes or newsletters.

Human resource policies that encourage worker involvement aim at providing employees with opportunities to have an input in decisions, incentives to expend discretionary effort and the means to acquire the appropriate skills (Berg 1999). Among these policies, participation schemes directly affect the first two aspects — opportunities and incentives — and as a result are thought to improve incentives to acquire skills as well as work organization and information flows. These combined effects are expected to increase X-efficiency and productivity.

For participation in control, those effects are thought to operate through increased employee creativity, responsibility and dignity as well as through conflict prevention and better enforced decisions, greater trust and improved co-ordination (see Cable 1984; Lazear 1995: ch. 5). Participation in returns may give employees incentives to work more and better and to acquire human capital and stay longer with the firm (in the case of deferred and share-based schemes). Other hypothesized effects include co-operation with colleagues and management and increased information flows, though with less impact on work organization than under participation in control.

Counter-arguments have included the risk of conflicts between management and non-management employees and slow decision-making under participation in control (especially direct forms — Ben-Ner and Jones 1995); a dilution of managers' incentives to manage with employee share ownership (Jensen and Meckling 1976); and free-riding rather than increased effort under profit-sharing because of the collective nature of the schemes (Alchian and Demsetz 1972). In addition, profit-sharing schemes may give rise to conflicts if employees are unwilling to take a pay risk that is in part dependent on management decisions without participating in control.

The first hypotheses we intend to test can thus be summarized as the following, standard propositions.

**Proposition 1:** *Employee participation in control and returns increases productive efficiency.*

**Proposition 1(a):** *The effect of participatory schemes on productive efficiency varies with the combination of control and return rights involved.*

### *Equal Opportunities Practices*

Like participation schemes, equal opportunities practices include a range of measures, from simply having a statement of company policy about non-discrimination to comprehensive sets of measures to monitor the situation of discriminated groups, identify and remedy sources of discrimination and improve the opportunities offered to employees from discriminated groups. The most thorough plans may involve extensive training and reorganization efforts in all of the following: hiring, performance appraisal procedures, management evaluation, promotion, benefits and grievance procedures (see e.g. Hodges-Aeberhard and Raskin 1997).

Effective anti-discrimination policies may affect productive efficiency in a number of ways. Pay may increase for discriminated groups, and their productivity may grow as a result.<sup>2</sup> Outside strictly pay-related effects, productive efficiency may rise as labour is more efficiently allocated and human capital is increased, motivation and effort improve and organizational effectiveness grows. Labour may be more efficiently allocated because hiring and promotion should involve selecting from a wider pool of applicants under equal opportunities measures. Individuals and jobs may be better matched, and more objective criteria and systematic search procedures may be used (Blau *et al.* 1998; Holzer and Neumark 2000). With improved career prospects, members of discriminated groups should have more incentives to invest in human capital and to stay with the organization. Their motivation may be spurred and this may spill over to the non-discriminated group, who may compete harder on internal labour markets as a result — as in tournaments incorporating equal opportunity rules (Schotter and Weigelt 1992).

Equal opportunities policies may generally have effects on motivation and organizational effectiveness similar to those hypothesized for participation if

discriminated groups are offered more rewarding job assignments<sup>3</sup> and more opportunities to contribute private information and creativity. Employees from discriminated groups may also gain a greater sense of fairness and may work more and better if they feel less undervalued. Finally, performance may improve as equal opportunities measures counter the specific adverse effects of discriminatory environments on the health, morale and dignity of the employees concerned. Stress from perceived discrimination at work has been found to add to other work stressors (Sanchez and Brock 1996). In addition, sexual and racial harassment affects both individual and organizational performance through stress, low confidence, absenteeism, resignations and lack of co-operation (see e.g. Decker 1997).<sup>4</sup>

The above effects may be expected to be stronger, the more actively the policy is pursued. Thus, for example, reviewing hiring and promotion procedures or pay levels for discrimination should have a stronger impact than a simple statement that the firm does not discriminate. It is also likely that productive efficiency will be most affected in the short run through the impact on the previously discriminated. In particular, in segregated workplaces with few employees from discriminated groups, positive effects on performance are unlikely to show until the composition of the work-force is more balanced.

As with participation, there are arguments suggesting that equal opportunities policies may affect performance negatively. Some of the benefits may accrue only in the medium or long run, while in the initial implementation phase audits, training, reorganization and the setting up of new procedures are likely to cause some organizational disruption and to impose non-financial as well as financial costs.<sup>5</sup> The reviews and audits that are needed to identify the problems may raise employees' awareness of discrimination in the organization before it is remedied, and morale and motivation may temporarily worsen among discriminated groups. Very limited or 'cosmetic' policies perceived as tokenism may actually affect performance negatively. Conversely, the non-discriminated group may be reluctant to share access to higher positions and rewards or may fear reverse discrimination, and may react negatively to active anti-discrimination policies. In segregated workplaces, those types of problem and organizational disruption may be the only perceptible effects of equal opportunities until the work-force is more diverse. Finally, equal opportunities practices could negatively affect performance if less qualified people were hired for given positions as a result (see e.g. Rhoads 1993). However, recent evidence suggests that this is not a problem (Holzer and Neumark 1999; Leonard 1984).

Our next set of hypotheses can therefore be summarized as follows.

**Proposition 2:** *Equal opportunities practices increase productive efficiency.*

**Proposition 2(a):** *Equal opportunities practices have a greater positive impact on productive efficiency in establishments where discriminated groups form a higher proportion of the work-force.*

**Proposition 2(b):** *More active equal opportunities policies have a greater positive effect on productive efficiency.*

### *Joint Effects*

Employee participation implemented in a discriminatory environment may be considerably restricted. Among the European establishments that have group consultation or participation schemes in which a 'high' proportion of the work-force is involved, only about half report that a 'high' proportion of the women working in the establishment are involved in the schemes (European Foundation ... 1998). Similarly, it has been found that insufficient attention to equal opportunities issues undermined the effectiveness of many total quality management programmes (Shapiro 1999). Equal opportunities policies may improve the effectiveness of employee participation schemes principally by increasing the likelihood that all groups of employees are involved.

Participation in control will be strengthened if discriminated groups get better opportunities to contribute and those contributions have a better chance to be taken into account, with attendant effects on motivation, creativity, co-operation, the circulation of information, etc. and on the quality of decisions. Conversely, perceptions of unfairness may worsen if participation schemes are introduced without fully involving discriminated groups.

Under participation in returns, anti-discrimination policies can increase the financial incentives offered to discriminated groups, by expanding the coverage of the schemes or increasing the wages that form the basis of bonuses or share allocations. Feelings of unfairness may decrease and incentives to acquire human capital and to stay with the organization under deferred schemes may be reinforced. Non-discriminated employees may also realize that they will benefit more from gain-sharing schemes if the whole work-force is encouraged to work more and better. On the other hand, this group may think they are more productive than discriminated groups and fear the prospect of having to split a fixed share of profit with a larger number of less productive employees, so that negative effects could be observed.

Equal opportunities policies may in turn be strengthened by participation in control. This form of participation may ensure that the measures selected are not based on received ideas about discriminated groups or on assumptions that those groups are homogeneous, but correspond to actual needs (Dickens 1999). For example, not all women have young children or need technical training. Sexual harassment seems to be facilitated in authoritarian workplace cultures by large power imbalances, a lack of regard for the dignity of employees and the unaccountability of managers (Decker 1997). Conversely, workplace violence may be easier to defuse in participatory workplaces (Chappell and Di Martino 1998). Participatory schemes may thus reinforce programmes against sexual and racial harassment. Adverse reactions of non-discriminated groups to equal opportunities policies may

also be easier to prevent if participation in control means that employees are better informed about company affairs and involved in decisions. Equal opportunities and participatory schemes may therefore be complementary, in the sense that the effect of each type of practice is strengthened by the presence of the other, even though neither type of practice may be necessary for the other to have an effect (see Milgrom and Roberts 1992, pp. 108 and 543).

These arguments imply the third set of propositions.

**Proposition 3:** *Participatory schemes and equal opportunities practices are complementary, so that the total effect of their joint presence on productive efficiency is greater than the sum of the individual effects observed when each type of practice is implemented separately.*

**Proposition 3(a):** *The joint effects of participatory schemes and equal opportunities practices depend on the form of participation practised and are more likely to be positive with participation in control than with participation in returns.*

**Proposition 3(b):** *The joint effects of participatory schemes and equal opportunities practices on productive efficiency are greater, the larger is the proportion of discriminated groups in the work-force*

**Proposition 3(c):** *The joint effects of participatory schemes and equal opportunities practices on productive efficiency are greater, the more actively the equal opportunities policy is pursued.*

### 3. Empirical strategy

#### *Estimation*

Our approach to the modelling and estimation of the impact of employee participation and equal opportunities practices is set out in Figure 1. Given that our hypotheses regarding firm performance concentrate on productive efficiency, we focus our attention on productivity. The merits of other measures of establishment performance available in WERS98, such as 'financial performance', were assessed but ultimately discounted.<sup>6</sup> A key feature of our approach is the ability to take advantage of the range of measures of participation and anti-discrimination practices, something that normally constrains empirical work in this area (Ben-Ner and Jones 1995). Using a single-equation ordered probit model on cross-sectional data, we initially determine whether each of the schemes independently exerts an upward or downward impact on productivity. This is carried out first with broad measures of employee participation and equal opportunities policies to test Propositions 1, 1(a) and 2, then with measures of equal opportunities practices that take into account work-force composition (Proposition 2(a)) and how actively equal opportunities policies are pursued (Proposition 2(b)).

FIGURE 1  
Model Specification and Estimation Strategy

<i>Dependent variable</i>	<i>Independent effects</i>	<i>Complementarities between participation and equal opportunities practices</i>	<i>Control variables</i>	
Labour productivity	Incidence of	As with independent effects with inclusion of interactions between:	<i>Human resources and industrial relations</i>	<i>Job-related factors</i>
	(i) <i>Participation in control (Tables 5, 6 and 7)</i>	(i) <i>Participation in Control</i>	Other financial participation schemes ( <i>otherfp</i> )	Average days off training ( <i>training</i> )
	(ii) <i>Participation in returns (Tables 5, 6 and 7)</i>	(ii) <i>Participation in Returns</i> and	Other communication schemes ( <i>othercom</i> )	Job variety ( <i>variety</i> )
	(iii) <i>Equal opportunities practices (Table 5)</i>	(iii) <i>Equal Opportunities Policy (Table 5)</i>	Number of other employee entitlements ( <i>entitlements</i> )	Discretion over job ( <i>discretion</i> )
	(iv) <i>Equal opportunities policy with employee characteristics (Table 6)</i>	(iv) <i>Equal Opportunities Policy with proportion of women/ethnic minorities in the workplace (Table 6)</i>	Number of family friendly policies ( <i>family</i> )	Control over job ( <i>control</i> )
	(v) <i>Intensity of equal opportunities policies (Table 7)</i>	(v) <i>Intensity of EO Policies (Table 7)</i>	Changes in pay ( <i>Δpay</i> )	Shift work ( <i>shift</i> )
	Propositions tested: 1, 1(a) 2, 2(a), 2(b)	Propositions tested: 3, 3(a), 3(b), 3(c)	Recognized trade union ( <i>t-union</i> )	Proportion of part-time ( <i>p/time</i> )
			Industrial action ( <i>indaction</i> )	<i>Employee characteristics</i> Proportion of women, ethnic and disabled ( <i>women, ethnic, disabled</i> ) Occupational groupings ( <i>not reported</i> )

*Notes:* Other control variables not reported in the results: *Establishment variables:* size dummies (*small* and *large*), private sector firm (*private*), single independent establishment (*single*), age of the company (*co-age*), whether demand is rising in the firm's main market (*demand*) and industry dummies.

We then look at the complementary impact of employee participation and equal opportunities practices. Our core specification looks at simple interactions between the six measures of employee participation and the existence of a formal equal opportunities policy (Propositions 3 and 3(a)). Developing this a stage further, we then explore whether their joint effectiveness is conditioned by the share of discriminated groups within the work-force (Proposition 3(b))<sup>7</sup> and whether the complementarity between arrangements is dependent upon the intensity of anti-discrimination policies (Proposition 3(c)).

Several potential problems bedevil such analysis, in particular the fundamental question of identification (reverse causality), simultaneity problems and selectivity bias. The cross-sectional nature of the data raises the possibility that these schemes are reflecting rather than causing better performance. Alternatively, if the distribution of these schemes among firms is non-random, this raises the potential for selectivity bias in our results. Econometric techniques that may be able to address these problems, for example instrumental variable estimation, are not, however, appropriate for cross-sectional data of this type where many of the firm specific variables are endogenous (Schmalensee 1989). On the plus side, the breadth of the WERS98 data set should ensure that problems of omitted variable bias are negligible and that our findings reflect the underlying associations between schemes and labour productivity.

### *Data and Incidence of Schemes*

The data used to investigate these hypotheses comes from the 1998 Workplace Employee Relations Survey. In what follows we limit our analysis to workplaces in the trading sector which make up 74 per cent of the total sample (1620 workplaces). This sample was chosen because the selected performance measure is applicable only to the trading sector, and also because employees in workplaces outside the trading sector (e.g. public services) are excluded from participating in the returns of the organization. Information was taken from two sources, the Management Questionnaire and the Employee Profile Questionnaire, the latter providing information on the make-up of the work-force, particularly its gender and ethnic mix, and the number of disabled employees.

Our measure of productivity is based on management's assessment of their level of labour productivity compared with other similar workplaces. The responses were on a five-point scale ranging from a lot better than average (5) to a lot lower (1), with a mean of 3.575 and a mode of 3. Thus, unlike previous versions of WIRS (see Fernie and Metcalf 1995), the distribution of responses is approximately normal.<sup>8</sup>

In keeping with the approach of Section 2, we focus our attention on institutionalized participation schemes which give employees a true 'voice' or 'role' in the decision-making processes and returns of the firm. We are not therefore interested in those elements of employee involvement that are

either 'cosmetic', reflect a one-way flow of information and communication, or subject employee influence within the workplace to management discretion.<sup>9</sup> Six measures of employee participation schemes are included in the subsequent analysis, three of which relate to the incidence of employee participation in control (joint consultative committee, team briefing and quality circles), and three of which capture employee participation in the returns of the firm (profit-related pay, employee share ownership and deferred profit-sharing).

Similar precision was applied to our definition and measurement of equal opportunities practices. Formal written equal opportunities policies are now found in nearly two-thirds of all firms. The specific terms of these policies reflect the core areas of gender, race and disabilities (see Table 1), which are unlawful bases for discrimination under British law. Religion, age and marital status also feature strongly, with sexual orientation similarly being specified in a majority of written policies; trade union membership is the only exception to this rule. It is also worth noting that, while 38 per cent of firms include all eight terms asked about by WERS98, 12 per cent contain no specific reference at all.

TABLE 1  
The Incidence of Equal Opportunities Practices<sup>a</sup>

% of firms in the trading sector with an equal opportunities policy <sup>b</sup> 64.5			
Which have the following equal opportunities attributes? <sup>c</sup> (%)			
<i>Terms of EO policy</i>		<i>Monitoring and review practices</i>	
Sex/gender	84.7	Keep minority records	40.1
Ethnic minorities policies	85.1	Posts (jobs) by gender	30.5
Religion	71.5	Monitor promotions by gender, ethnicity, etc.	15.5
Marital status	63.0	Review selection procedures	25.7
Disability	81.3	Review relative pay rates	13.5
Age	59.8	Workplace is disability-friendly	32.3
Sexual orientation	54.1		
Trade union membership	45.9		
Other specified	28.7		
<i>Number of specific terms in EO policy</i>		<i>Number of practices implemented by EO firms</i>	
One	2.7	One	18.4
Two	1.4	Two	12.7
Three	5.9	Three	8.2
Four	8.8	Four	6.4
Five	9.1	Five	6.0
Six	10.5	Six	5.6
Seven	11.4	None	42.6
Eight	17.0		
Nine	21.0		
None	11.9		

<sup>a</sup> All calculations from weighted sample of workplaces in the trading sector.

<sup>b</sup> % in the whole trading sector ( $N = 1620$  unweighted).

<sup>c</sup> Based on workplaces in the trading sector that have an equal opportunities policy ( $N = 1275$  unweighted).

To gauge how 'active' equal opportunities policies are, we looked at the extent and progressiveness of additional policies that firms have in place to monitor discrimination and review their procedures (see Table 1). The distribution and clustering of those firms with these monitoring and procedure review practices can be seen in Table 2.

TABLE 2  
Distribution of Monitoring and Review Practices in Firms with an  
Equal Opportunities Policy (%)<sup>a</sup>

<i>Monitoring and review practices</i>	<i>Low EO practices</i>		<i>Medium EO practices</i>		<i>High EO practices</i>	
	<i>One</i>	<i>Two</i>	<i>Three</i>	<i>Four</i>	<i>Five</i>	<i>Six</i>
Keep minority records	40.8	69.7	78.3	94.1	94.9	100
Posts (jobs) by gender	14.7	34.3	79.0	83.8	100	100
Monitor promotions by gender, etc.	1.8	7.8	16.0	35.5	82.7	100
Review selection procedures	6.5	29.9	51.8	82.2	93.2	100
Review relative pay rates	5.7	9.3	12.0	28.4	48.5	100
Workplace is disability-friendly	30.5	48.9	62.8	76.2	80.6	100

<sup>a</sup> All calculations from weighted sample of workplaces in the trading sector ( $N = 1275$  un-weighted).

All firms with such support policies tend to offer a base level of protection and enforcement which centres on keeping minority records, making the workplace disability-friendly and collecting statistics on posts held, by gender. This, in turn, forms the basis of more progressive and all-encompassing monitoring systems, which move beyond statements of policy towards the actual monitoring of discrimination and reviewing of selection procedures and pay. From this information, three different incremental levels of equal opportunities practices were constructed, which we label 'low' (one or two additional practices), 'medium' (three or four) and 'high' (five or six). As far as we are aware, such distinctions have not been possible before.

We also control for a range of factors that might be expected to impinge on the dependent variable. Four categories of variable are included as controls labelled, respectively: 'human resources and industrial relations environment', 'job-related factors', 'employee characteristics' and 'establishment characteristics' (see Figure 1). The inclusion of controls for family-friendly policies and non-pecuniary benefits, alongside variables capturing key dimensions of one's job (variety, discretion and control), mark a clear advancement in the specification of these models.<sup>10</sup> Definitions and descriptive statistics of the key variables are provided in Table 3.

A final issue regards whether establishments with worker participation schemes show a higher level of concern for promoting equal opportunities in the workplace. As with earlier evidence (Pérotin *et al.* 1998), the findings reported in Table 4 confirm this view, and clear the way for us to test their

TABLE 3  
Key Variable Definitions and Descriptive Statistics<sup>a</sup>

<i>Variable</i>	<i>Detailed measures</i>	<i>Measure</i>	<i>Observations</i>	<i>Mean/mode</i>	<i>St. dev.</i>
<i>Dependent variable</i>					
Level of labour productivity		cf. other similar workplaces (5 = a lot better than average; 1 = a lot lower than average)	1369	3.575 / 3	0.777
<i>Explanatory variables</i>					
Participation in control					
Joint consultative council		Are there any committees of managers and employees primarily concerned with consultation rather than negotiation? (1/0, Yes/No)	1620	0.178	0.382
Quality circles		Are there groups at this workplace that solve specific problems or discuss aspects of performance or quality? (1/0, Yes/No)	1604	0.376	0.485
Team briefing		Do you have a system of briefings for any section or sections of the workforce? (1/0, Yes/No)	1618	0.802	0.399
Participation in returns					
Profit-related pay		Do you operate an Inland Revenue approved PRP scheme in which non-managerial occupations are eligible? (1/0, Yes/No)	1619	0.257	0.437
Employee share ownership schemes		Do you operate an employee share ownership scheme in which non-managerial occupations are eligible? (1/0, Yes/No)	1617	0.153	0.360
Deferred profit sharing scheme		Do any employees at this workplace receive payments or dividends from a deferred profit-sharing scheme? (1/0, Yes/No)	1618	0.067	0.250
<i>Equal Opportunities</i>					
Equal Opportunities policy <sup>b</sup>		Does this workplace (or organization of which it is part) have a formal written policy on equal opportunities or managing diversity? (1/0, Yes/No)	1616	0.642	0.479
	<i>EOONLY</i>	Has a statement of equal opportunities, but operates no monitoring or review policies	1616	0.275	0.445
	<i>EOLOW</i>	3 measures of the extent of equal opportunity monitoring and review	1616	0.200	0.400
	<i>EOMED</i>	practices (see Tables 1 and 2); split according to whether the firm has up to 2	1616	0.094	0.292
	<i>EOHIGH</i>	practices (low), 3 or 4 (medium) or 5 and 6 (high).	1616	0.074	0.262

<sup>a</sup> All calculations for mean and standard deviation from weighted sample of workplaces in the trading sector.

<sup>b</sup> The descriptive statistics reported for the different levels of equal opportunities policies relate to the full sample of firms ( $N = 1620$ ). If we look only at those firms with a written equal opportunities policy, as in Table 1 ( $N = 1275$ ), the means and standard deviations are as follows: *EOONLY* (0.426, 0.495); *EOLOW* (0.311, 0.463); *EOMED* (0.146, 0.353); *EOHIGH* (0.116, 0.320).

joint performance enhancing properties. In all instances at least two-thirds of firms with employee participation have a formal written equal opportunities policy. Analysis of their incidence according to the level of monitoring and review practices indicates that firms with participation in control are more likely to go beyond a simple policy statement and implement active equal opportunities policies, although this is more evident in terms of direct as against indirect forms of participation. Correspondingly, participation in returns suggests a split between schemes offering cash rewards and those contributing a share in the ownership of the firm. Such trends, as we will see, are instructive when considering the performance outcomes of these arrangements.

TABLE 4  
The Incidence of Participation in Control and Returns and its Joint Incidence with Equal Opportunities Practices<sup>a</sup>

	% of trading firms	% of participation schemes that have EO policy <sup>b</sup>	% of firms with participation scheme and EO policy that have <sup>c</sup>			
			Low EO practices	Medium EO practices	High EO practices	No EO practices
<i>Participation in control</i>						
Joint consultative committees	17.8	73.4	32.8	19.0	19.4	28.7
Quality circles	37.6	37.6	31.6	18.0	15.7	34.7
Team briefing	80.2	69.3	32.5	16.3	12.0	39.2
<i>Participation in returns</i>						
Profit-related pay	25.7	69.1	32.1	17.4	6.1	44.4
Employee share ownership	15.3	73.9	29.3	19.6	9.0	42.1
Deferred profit sharing	6.7	83.5	30.7	18.4	11.7	39.2

<sup>a</sup> All calculations from weighted sample of workplaces in the trading sector ( $N = 1275$  unweighted).

<sup>b</sup> This column indicates that of the firms with, for example, a joint consultative committee, 73.4% of them have an equal opportunities policy.

<sup>c</sup> This section indicates that of the firms with, for example, a joint consultative committee and an equal opportunities policy, 32.8% have low level equal opportunities monitoring and review policies, 19% have medium EO practices, etc.

#### 4. Results

The results of our estimations are reported in Tables 5–7. The results are consistent and stable for both the participation and the equal opportunities variables, and introducing interactions between participation and equal opportunities policies improves the estimation as expected. The statistical significance and signs of the coefficients of the control variables are stable across specifications, which lends support to their inclusion in the estimates and suggests that the results are robust.

*Participation, Equal Opportunities Practices and Productivity: Overall Effects*

Table 5 presents the results of our estimations of the effects of having employee participation schemes or an equal opportunities policy regardless of the intensity of the practices and the work-force composition. The reported effects have been estimated both separately for participation and equal opportunities policies (Propositions 1, 1(a) and 2 — left-hand side of the table), and allowing for participation and equal opportunities policies to have additional, interactive effects when they are implemented together (Propositions 3 and 3(a) — right-hand side). By itself, the existence of an equal opportunities policy is positively and significantly associated with the level of productivity, supporting Proposition 2. However, only two forms of participation, joint consultative committees and quality circles, are associated with significant overall effects, and contrary to Proposition 1, these are negative.

More participation schemes show significant effects when we take into account the interactions between participation and equal opportunities practices (right-hand side of Table 5), and all but one of the interactions are positive. Implemented jointly with an equal opportunities policy, joint consultative committees, employee share ownership and deferred profit sharing are all associated with significant productivity advantages, in support of Proposition 3. In contrast, profit-related pay schemes show negative, significant interactive effects with an anti-discrimination policy. These results support Proposition 3(a) in that equal opportunities practices significantly improve the effects of participation in control rather than those of participation in surplus on productivity.

The remaining coefficients indicate that three out of the four participation schemes that have significant effects have a negative relationship with productivity when not associated with equal opportunities policies. The existence of an equal opportunities policy implemented without any participation shows a mildly significant and negative association with productivity. This finding would support our hypothesis that the complementarity between participation and equal opportunities schemes goes both ways and that participatory practices also improve the operation of equal opportunities measures.

Of the ‘human resources and industrial relations environment’ variables, only the presence of employee benefits other than ‘work and family’ benefits and a recent pay increase have a consistently positive and significant coefficient in these and our later estimations. Among ‘job-related factors’, task variety is always associated with a significant productivity advantage, but shift-work almost always has a negative, significant coefficient. Although less strongly significant, the relationship between the amount of training and productivity is always negative, which may be related to the fact that training has short-term costs but long-term returns.

Finally, the results concerning ‘employee characteristics’ variables are of interest in connection with our main findings. The proportion of disabled employees never has a significant coefficient. However, the proportion of

TABLE 5  
 Ordered Probit Estimation of Labour Productivity and the Impact of Equal Opportunities Policies and Participation in Control>Returns<sup>a</sup>

	<i>Shift effects only</i>		<i>Shift effects and interactions</i>	
Constant	2.351	(8.140)***	2.694	(8.886)***
Participation in control				
<i>JCC</i>	-0.280	(3.645)***	-0.770	(6.515)***
<i>QC</i>	-0.108	(1.737)*	-0.248	(2.568)***
<i>BRIEF</i>	-0.023	(0.321)	-0.179	(1.616)
Participation in returns				
<i>PRP</i>	0.054	(0.764)	0.402	(3.884)***
<i>ESOS</i>	0.086	(0.928)	-0.473	(2.911)***
<i>DPS</i>	0.124	(1.345)	-0.168	(0.845)
Equal opportunities				
<i>EOPOLICY</i>	0.146	(1.935)*	-0.245	(1.914)*
Interactions				
<i>EO</i> × <i>JCC</i>			0.754	(4.600)***
<i>EO</i> × <i>QC</i>			0.142	(1.160)
<i>EO</i> × <i>BRIEF</i>			0.278	(2.0925)**
<i>EO</i> × <i>PRP</i>			-0.470	(3.372)***
<i>EO</i> × <i>ESOS</i>			0.745	(3.668)***
<i>EO</i> × <i>DPS</i>			0.435	(2.015)**
Controls				
HRM and industrial relations				
<i>otherfp</i>	-0.106	(1.750)*	-0.121	(1.957)*
<i>othercom</i>	0.045	(0.808)	0.047	(0.818)
<i>entitlements</i>	0.092	(4.498)***	0.080	(3.812)***
<i>family</i>	-0.008	(0.314)	-0.007	(0.301)
<i>Δpay</i>	0.035	(3.090)***	0.030	(2.242)**
<i>t-union</i>	0.015	(0.248)	0.043	(0.697)
<i>indaction</i>	0.077	(1.799)*	0.073	(1.726)*
Job-related factors				
<i>training</i>	-0.109	(1.849)*	-0.134	(2.090)**
<i>variety</i>	0.293	(5.272)***	0.352	(6.067)***
<i>discretion</i>	0.013	(0.188)	-0.008	(0.114)
<i>control</i>	-0.076	(1.163)	-0.127	(1.828)*
<i>shift</i>	-0.100	(1.755)*	-0.180	(2.887)***
<i>p/time</i>	-0.161	(1.121)	-0.191	(1.287)
Employee characteristics				
Women	0.053	(0.391)	0.013	(0.092)
Ethnic	-0.852	(3.271)***	-0.852	(3.359)***
Disabled	1.577	(1.330)	1.574	(1.293)
Log likelihood	-1205.612		-1188.384	
Chi-squared	266.477***		300.932***	
<i>N</i>	1137		1137	

<sup>a</sup> All calculations from weighted sample of workplaces in the trading sector. Other control variables: size dummies (*small* and *large*), *industry*, *private* (yes/no), *single workplace organization* (yes/no), *age of the company* (no. of years), *whether demand rising in the firm's main market* (yes/no), and occupational controls (management as reference group) \*\*\*, \*\* and \* denote statistically significant at the 1%, 5% and 10% level respectively; *t*-ratios in parentheses.

employees from ethnic minorities is always negatively and significantly associated with productivity, and that of women also has a negative coefficient whenever it is significant. These findings are consistent with estimations of production functions on US and Israeli data (see Hellerstein and Neumark 1995, 1998) and with our own experience with French data, in which the share of women negatively affects the marginal productivity of labour and total factor productivity.

Several interpretations are possible. Women and members of ethnic minorities may be segregated into less productive, possibly more labour-intensive, jobs and/or establishments (where they may or may not be paid less than non-minority men), or they may be less productive than non-minority men (see Bayard *et al.* 1999). While we were able to control for the occupational composition of the work-force, we could not control for capital intensity or qualifications. An additional possibility is that the relationship between the presence of discriminated groups and workplace productivity is partly endogenous to the establishment's human resource practices and that discriminatory conditions explain some of the negative average effect. This issue is taken up in the next section.

#### *The Role of Work-force Composition*

Estimations taking into account the shares of discriminated groups in the work-force are presented in Table 6. As hypothesized in Proposition 2(a) (left-hand side of Table 6), we find that equal opportunities practices have a higher effect on productivity, the higher the proportion of women or members of ethnic minorities — men and women — in the work-force. Furthermore, in establishments that have anti-discrimination policies, this effect entirely compensates for the negative and significant effect of the proportion of women in the work-force on productivity and makes up for most of the negative effect of the proportion of members of ethnic minorities. This finding supports the hypothesis that at least some of the negative association between the presence of women and minorities and establishment productivity is endogenously determined in the organization rather than exogenously related to individual employee characteristics, and hence can be corrected with equal opportunities programmes.

Outside its impact on women and ethnic minority employees, the simple presence of an anti-discrimination policy has a negative and significant effect. This finding supports the idea that, in segregated workplaces with a very low proportion of employees from discriminated groups, only the costs of the policy will be felt until the balance of employee characteristics is improved. Results for participation schemes are unchanged. Taking into account the share of disabled employees does not yield a significant result, which may be due to the low average proportion of disabled employees and/or may reflect differences in the relevant equal opportunities issues between disability and gender or ethnicity.<sup>11</sup> The proportion of disabled employees was dropped for the next estimation.

TABLE 6  
 Ordered Probit Estimation of Labour Productivity and the Impact of Equal Opportunities Policies and Participation in Control/Returns Accounting for Work-force Composition<sup>a</sup>

	<i>Shift effects only</i>		<i>Shift effects and interactions</i>	
Constant	2.670	(8.649)***	2.856	(9.013)***
Participation in control				
<i>JCC</i>	-0.262	(3.483)***	-0.530	(5.324)***
<i>QC</i>	-0.117	(1.882)*	-0.008	(0.101)
<i>BRIEF</i>	-0.001	(0.013)	-0.175	(2.018)**
Participation in returns				
<i>PRP</i>	0.036	(0.516)	0.059	(0.686)
<i>ESOS</i>	0.071	(0.785)	-0.266	(2.272)**
<i>DPS</i>	0.104	(1.143)	-0.015	(0.102)
Equal opportunities				
<i>EOPOLICY</i>	-0.394	(3.605)***	-0.128	(1.463)
Interactions				
<i>EO</i> × <i>WOMEN</i>	0.984	(5.193)***		
<i>EO</i> × <i>ETHNIC</i>	2.718	(3.179)***		
<i>EO</i> × <i>DISABLED</i>	4.318	(1.583)		
<i>EO</i> × <i>wom/ethnic</i> × <i>JCC</i>			0.702	(3.622)***
<i>EO</i> × <i>wom/ethnic</i> × <i>QC</i>			-0.330	(2.110)**
<i>EO</i> × <i>wom/ethnic</i> × <i>BRIEF</i>			0.611	(4.319)***
<i>EO</i> × <i>wom/ethnic</i> × <i>PRP</i>			-0.034	(0.171)
<i>EO</i> × <i>wom/ethnic</i> × <i>ESOS</i>			0.790	(3.071)**
<i>EO</i> × <i>wom/ethnic</i> × <i>DPS</i>			0.335	(1.640)
Controls				
HRM and industrial relations				
<i>otherfp</i>	-0.049	(0.793)	-0.073	(1.161)
<i>othercom</i>	0.053	(0.959)	0.036	(0.642)
<i>entitlements</i>	0.098	(4.693)***	0.085	(4.150)***
<i>family</i>	-0.022	(0.850)	-0.006	(0.245)
<i>Δpay</i>	0.035	(3.117)***	0.031	(2.551)**
<i>t-union</i>	0.020	(0.337)	-0.005	(0.086)
<i>indaction</i>	0.076	(1.711)*	0.063	(1.369)
Job-related factors				
<i>training</i>	-0.117	(1.950)*	-0.133	(2.110)**
<i>variety</i>	0.265	(4.518)***	0.349	(6.002)***
<i>discretion</i>	0.026	(0.386)	-0.043	(0.640)
<i>control</i>	-0.046	(0.669)	-0.059	(0.851)
<i>shift</i>	-0.103	(1.779)*	-0.147	(2.452)***
<i>p/time</i>	-0.153	(1.035)	-0.208	(1.368)
Employee characteristics				
<i>women</i>	-0.451	(2.466)**	-0.392	(2.342)**
<i>ethnic</i>	-2.947	(3.975)***	-1.442	(4.873)***
<i>disabled</i>	-1.907	(0.782)	1.806	(1.533)
Log likelihood	-1191.891		-1187.619	
Chi-squared	293.920***		302.464***	
<i>N</i>	1137		1137	

<sup>a</sup> See Table 5.

Findings on the joint effects of participation and equal opportunities policies (right-hand side of Table 6) are broadly confirmed when the share of women and ethnic minorities is taken into account. The findings also confirm that some of the effects of participatory schemes are related to the presence of equal opportunities or discriminatory practices and their impact on employees from discriminated groups (Proposition 3(b)). For three out of the four forms of participation that show significant effects, joint implementation with equal opportunities plans has more positive effects on productivity, the higher the proportion of women and minority employees in the work-force. The schemes concerned are joint consultative committees, team briefings and employee share ownership schemes.

Neither of the two types of profit-sharing scheme now affects productivity significantly, whether by itself or in interaction with anti-discrimination practices. When implemented by themselves, quality circles now have an insignificant effect; yet when quality circles are jointly implemented with equal opportunities measures, their observed effect is now significantly negative and worsens as the proportion of discriminated groups increases. Similar differences appear when we examine the role of the intensity of participatory and equal opportunities practices.

#### *Do More Active Equal Opportunities Policies Have More Effect?*

In Table 7, we present estimations where the existence of equal opportunities policies is split into different levels depending on how active the establishment is in this area. The intensity of equal opportunities activity is found to matter significantly to its overall effect (left-hand side of the table) in two ways. Simply having a statement of policy or a low-level equal opportunities measures has a positive, significant effect on productivity, but the most active package of practices has a negative and significant effect, contrary to Proposition 2(b). The most active equal opportunities packages involve all six of the practices identified in the data and are likely to be associated with substantial short-run disruption (and possible adverse reactions from non-discriminated employees) as against mostly long-term benefits. It is also possible that establishments that have particularly severe discrimination and related productivity problems adopt more active equal opportunities policies, so that the observed effect might partly be due to reverse causality. The overall effects of participation schemes are for the most part insignificant.

When joint effects with different levels of equal opportunities practices are allowed for (right-hand side of Table 7), the estimated effects of separately implementing participation schemes are again consistent with the results of Table 5. The joint effects of the two types of scheme are found to be significant and positive for five out of the six participation schemes included in the equation. In the cases of joint consultative committees, team briefings and employee share ownership schemes, more active equal opportunities practices are associated with stronger joint effects overall, in line with

TABLE 7  
 Ordered Probit Estimation of Labour Productivity and the Impact of Participation in Control/  
 Returns and the Intensity of Equal Opportunities Practices<sup>a</sup>

	<i>Shift effects only</i>		<i>Shift effects and interactions</i>	
Constant	2.445	(8.299)***	2.996	(9.272)***
Participation in control				
<i>JCC</i>	-0.284	(3.677)***	-0.786	(6.588)***
<i>QC</i>	-0.092	(1.437)	-0.283	(2.926)***
<i>BRIEF</i>	-0.029	(0.387)	-0.196	(1.737)*
Participation in returns				
<i>PRP</i>	0.041	(0.583)	0.385	(3.691)***
<i>ESOS</i>	0.087	(0.934)	-0.521	(3.223)***
<i>DPS</i>	0.133	(1.378)	0.227	(1.176)
Equal opportunities				
<i>EOONLY</i>	0.181	(2.143)**	0.127	(0.867)
<i>ELOW</i>	0.167	(1.795)*	-0.041	(0.154)
<i>EOMED</i>	-0.023	(0.139)	-0.431	(0.491)
<i>EOHIGH</i>	-0.252	(2.009)**	-2.151	(2.889)***
Interactions				
<i>JCC</i> × <i>EOONLY</i>			0.674	(2.703)***
<i>JCC</i> × <i>ELOW</i>			0.304	(1.293)
<i>JCC</i> × <i>EOMED</i>			0.883	(1.920)*
<i>JCC</i> × <i>EOHIGH</i>			1.644	(4.756)***
<i>QC</i> × <i>EOONLY</i>			0.157	(0.996)
<i>QC</i> × <i>ELOW</i>			0.618	(3.087)***
<i>QC</i> × <i>EOMED</i>			-0.402	(1.093)
<i>QC</i> × <i>EOHIGH</i>			-0.144	(0.488)
<i>BRF</i> × <i>EOONLY</i>			-0.051	(0.329)
<i>BRF</i> × <i>ELOW</i>			-0.045	(0.162)
<i>BRF</i> × <i>EOMED</i>			0.398	(0.442)
<i>BRF</i> × <i>EOHIGH</i>			1.613	(2.121)**
<i>PRP</i> × <i>EOONLY</i>			-0.850	(4.674)***
<i>PRP</i> × <i>ELOW</i>			-0.341	(1.663)*
<i>PRP</i> × <i>EOMED</i>			-0.287	(0.794)
<i>PRP</i> × <i>EOHIGH</i>			0.612	(1.187)
<i>ESOS</i> × <i>EOONLY</i>			0.653	(2.645)***
<i>ESOS</i> × <i>ELOW</i>			0.872	(3.223)***
<i>ESOS</i> × <i>EOMED</i>			1.327	(3.178)***
<i>ESOS</i> × <i>EOHIGH</i>			0.061	(0.127)
<i>DPS</i> × <i>EOONLY</i>			1.076	(4.155)***
<i>DPS</i> × <i>ELOW</i>			0.196	(0.709)
<i>DPS</i> × <i>EOMED</i>			-0.067	(0.087)
<i>DPS</i> × <i>EOHIGH</i>			0.935	(1.346)
Controls				
HRM and industrial relations				
<i>otherfp</i>	-0.110	(1.776)*	-0.142	(2.077)**
<i>othercom</i>	0.053	(0.932)	0.065	(1.037)
<i>entitlements</i>	0.100	(4.762)***	0.100	(4.358)***
<i>family</i>	0.018	(0.706)	0.037	(1.339)
<i>Δpay</i>	0.036	(3.076)***	0.035	(2.733)***
<i>t-union</i>	0.021	(0.347)	0.024	(0.363)
<i>indaction</i>	0.083	(1.901)*	0.027	(0.467)

Table 7 (cont.)

	<i>Shift effects only</i>		<i>Shift effects and interactions</i>	
<b>Job-related factors</b>				
<i>training</i>	-0.120	(2.030)**	-0.145	(2.355)**
<i>variety</i>	0.294	(5.144)***	0.341	(5.182)***
<i>discretion</i>	-0.011	(0.154)	-0.001	(0.013)
<i>control</i>	-0.072	(1.065)	-0.081	(1.008)
<i>shift</i>	-0.090	(1.549)	-0.180	(2.666)***
<i>p/time</i>	-0.188	(1.290)	-0.083	(0.515)
<b>Employee characteristics</b>				
<i>women</i>	0.072	(0.520)	-0.068	(0.436)
<i>ethnic</i>	-0.868	(3.186)***	-1.019	(3.596)***
<i>disabled</i>	1.891	(1.510)	1.802	(1.457)
Log likelihood	-1198.868		-1143.975	
Chi-squared	276.510***		386.297***	
<i>N</i>	1135		1135	

<sup>a</sup> See Table 5.

Proposition 3(c). However, quality circles are found to interact positively with equal opportunities only when low-level measures are implemented. Finally, profit-related pay schemes are again found to have positive effects when implemented by themselves and negative effects in interaction with (low-level) equal opportunities practices.

## 5. Conclusions

Several important new findings come out of this investigation into the relationships between employee participation, equal opportunities practices and organizational performance in Britain. The first is a positive overall association between equal opportunities policies and establishment productivity. This effect is stronger, the larger the proportion of women and ethnic minority employees in the work-force. Furthermore, it offsets the negative relationship observed — here as elsewhere — between the proportion of employees from discriminated groups and establishment productivity. This set of results supports our hypothesis that discrimination and equal opportunities have an impact on individual and organizational efficiency. It would suggest that the main focus of the economic debate on equal opportunities and productivity should shift from individual employee characteristics to features of the work environment. It would also imply that firms employing higher proportions of women and ethnic minority men will benefit from introducing equal opportunities measures. However, in firms with few employees from discriminated groups equal opportunities plans may adversely affect productivity at first, until the balance of employee

characteristics is improved. This points to the need for public intervention to encourage workplace desegregation and assist firms in overcoming the initial organizational disruption that may be associated with equal opportunities policies.

Another key finding is that the joint existence of employee participation and equal opportunities schemes is generally associated with a productivity advantage over and above the separate effects of the two types of policy. The complementarity between participatory and equal opportunities practices operates primarily through the joint impact of the two types of scheme on discriminated groups. Because participation is meant to foster employees' active involvement, its effectiveness may be severely restricted in the presence of discrimination, improving as female and ethnic minority employees are provided with increased access to opportunities and incentives to participate. It is also possible that equal opportunities policies are better designed and more effective in a participatory environment. These results imply that much too little attention has been paid until now to discrimination issues in analysing and implementing employee participation schemes.

In keeping with the literature, we find several participation schemes to be negatively associated with productivity when implemented on their own. In previous studies, participation in control has also been found to have greater effects in interaction with other aspects of the human resources and industrial relations environment, such as participation in returns (e.g. McNabb and Whitfield 1998) or union presence (e.g. Cooke 1994). Our results concerning participation in returns are more unusual and may reflect the use of more precise definitions or the fact that we were able to control for a much more extensive set of human resource policies than is usually possible (see Robinson and Wilson 1999).

Our investigation also suggests that the interaction between employee participation schemes and equal opportunities practices varies with the form of participation and may depend on factors that require further examination. Forms of participation in control that concern establishment-level and general issues (such as joint consultative committees) or that only weakly affect production (such as team briefings) seem to interact unambiguously positively with equal opportunities practices, the more so as these policies become more active and go beyond simple statements of policy. However, quality circles, the scheme least often combined with equal opportunities policies, interact positively only with 'low'-level equal opportunities practices. These effects could be due to the specific nature of the scheme, which is more closely linked to production and organizational issues than the other forms of control participation, and has been found to be associated with less perceived employee influence (Delbridge and Whitfield 1999). Profit-sharing schemes also show some ambiguous interaction with equal opportunities policies, perhaps because under these schemes improved incentives for the discriminated groups may coincide with a fear of incentive dilution among the non-discriminated group. These two effects may cancel each other out

when there is a high proportion of female and ethnic minority employees in the work-force. Fear of incentive dilution may dominate in other cases, since in many establishments with cash profit-sharing, equal opportunities policies are not accompanied by any supporting measures.

The debate on employee participation and its synergies with other elements of ‘bundles’ of complementary firm policies has largely taken place without a consideration of the role of discrimination and equal opportunities practices, which may be critical in determining the extent of many employees’ participation under a given scheme. In turn, the economic debate about discrimination has concentrated on determinants of performance linked to individual employee characteristics and has largely ignored the influence of firm policies on organizational and individual productivity — a central issue in research on participation and human resource management. In this article, we have found strong evidence that, on average, firm policies to fight discrimination positively affect performance and improve the impact of employee participation on productivity. These results suggest that there is not just a moral ground for promoting equality of opportunity, i.e. as a key element of human rights at work, but also a pragmatic case for many enterprises to regard it as a strategic element of human resource management in improving firm performance. We have also shown that in certain circumstances firms may not immediately benefit from implementing equal opportunities practices. Public policy interventions may be needed to encourage the firms concerned to implement anti-discrimination policies, and these will require a better understanding of the relationships between segregation, discrimination and the adoption of participatory and equal opportunities practices.

### Appendix: Definitions of Variables

Variable	Definition
HRM and industrial relations	
<i>otherfp</i>	Do any employees receive payments or dividends from any variable pay scheme except from PRP, ESOS, or DPS (e.g. cash bonus or individual performance related schemes)? (1/0, Yes/No)
<i>othercom</i>	Does your workplace have other methods of communication, e.g. a suggestion box scheme, and regular meetings? (1/0, Yes/No)
<i>entitlements</i>	Number of non-pay terms and conditions to which employees are entitled, e.g. employer pension scheme, private health insurance, sick pay in excess of statutory requirements, 4 or more weeks’ employment
<i>family</i>	Number of family-friendly policies, e.g. parental leave, term-time only contracts, workplace nursery, job sharing
<i>Apay</i>	What was the average percentage change in basic pay for employees from the last review or settlement?
<i>t-union</i>	Is a union(s) recognized by management for negotiating pay and conditions for any sections of the work-force? (1/0, Yes/No)
<i>indaction</i>	Number of times industrial action has occurred

Job-related factors

<i>training</i>	On average, how many days did employees spend in formal off-the-job training over the last 12 months?
<i>variety</i>	To what extent would you say that individual employees have variety in their work? (1, none/4, a lot).
<i>discretion</i>	To what extent would you say that individual employees have discretion over how they do their work? (1, none/4, a lot).
<i>control</i>	To what extent would you say that individual employees have control over the pace at which they work? (1, none/4, a lot).
<i>shift</i>	Do you operate shift working arrangements for non-managerial employees? (1/0, Yes/No)
<i>p/time</i>	Proportion of total work-force who are part-time employees

Employee characteristics

<i>women</i>	Proportion of total work-force who are female
<i>ethnic</i>	Proportion of total work-force from an ethnic minority group
<i>disabled</i>	Proportion of total work-force with a disability
<i>Occupation controls</i>	Occupational groupings as a proportion of the total work-force.

Establishment controls

<i>Small</i>	Dummy variable measure denoting less than 100 employees
<i>Medium</i>	Dummy variable measure denoting between 100 and 499 employees
<i>Large</i>	Dummy variable measure denoting 500 or more employees
<i>Private</i>	Are you a private-sector firm? (1/0, Yes/No)
<i>Single</i>	Are you a single independent establishment not belonging to another body?
<i>Co-age</i>	Age of the company (no. of years)
<i>Demand</i>	Over the last 12 months would you say that the value of sales has risen? (1/0, Yes/No)

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The views presented in the paper are the authors' own and do not necessarily reflect those of the International Labour Office.

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## Notes

1. Throughout the paper we use the terms ‘equal opportunities’ or ‘anti-discrimination’ to refer to a range of policies and practices including equal opportunities, affirmative action, diversity management and other workplace measures designed to prevent or correct direct and indirect discrimination and to provide better opportunities to discriminated groups.
2. Note that, if the growth in productivity is proportional to the pay raise, profits will not be affected. According to this model, wage discrimination can therefore be as profitable as non-discrimination and can persist in competitive markets (Altman 1995).
3. The reciprocal argument has been made that, if female and ethnic minority employees are given less rewarding job assignments, stereotyped notions about their productivity relative to non-minority men will produce self-fulfilling predictions even if those notions were wrong in the first place (see Arrow 1972).
4. It should also be noted that effective equal opportunities policies may also affect firm performance if they prevent discrimination lawsuits and enhance firm reputation. More fundamentally, performance may improve if the management structure better reflects the potential diversity of the firm’s customer base. If firm reputation is enhanced and more firms compete for employees from previously discriminated groups, the positive effects may grow over time (Black 1996).
5. Financial costs may also grow if the coverage of existing employee benefits is extended or new benefits are created (such as emergency childcare leave, flexible religious holidays, language classes).
6. For example, the association between equal opportunities practices and financial performance, as against productivity, is more complex in that it warrants modelling the impact of equal opportunities on both the price of labour (as wages and financial incentives increase for the discriminated groups) and productive efficiency. As a consequence, it infers both a different theoretical and empirical approach to the issues under investigation here.
7. This is analysed by constructing interaction terms between the presence of an equal opportunities policy (and other schemes) and the proportion of female/disabled/ethnic minority employees in the workplace. A significant positive coefficient on the interaction between EO and women indicates that, where an equal opportunities policy operates in a largely female environment, labour productivity is higher.
8. Measures of skewness and kurtosis on the weighted sample indicate that this variable is approximately normally distributed.
9. For example, suggestion schemes and the use of a management chain are excluded from this categorization, as are financial participation schemes that are based on individual performance or restricted to the management ranks. To counter the possibility of omitted variable bias, however, they are included as controls in the estimations.
10. It should be noted that little information exists on the quality of management within each firm, a factor that is expected to have some bearing on the productivity of the firm.

11. If barriers to employment are a more important issue for disabled people than promotion, etc., within organizations, the share of disabled employees will not improve the significance of the equal opportunities variable. Experimentation with entering the share of disabled employees in the same way as that of women and ethnic minority employees in interactions between equal opportunities policies and participation confirmed that this variable did not show significant effects and that the issue of disability should probably be treated differently from those of gender and ethnicity.

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