

Abstract

This paper uses matched employer-employee data from the 1998 Workplace Employee Relations Survey (WERS98) to estimate influences on managerial and employee perceptions of the employee relations climate.

Both the strength and direction of union effects differ according to the nature of the union and employer responses to it. Employee and employer perceptions of climate differ according to the strength of the union, bargaining arrangements adopted, and managerial attitudes to union membership. Employees' perceptions of climate are also strongly associated with employees' perceptions of union effectiveness.

JEL Classifications: J51, J53

Key Words: Trades unions; industrial relations climate; employee relations; matched employer-employee data.

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Union Effects On Managerial and Employee Perceptions of Employee Relations in Britain

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1. Introduction

This paper addresses the question: what impact do trade unions have on the employee relations climate in Britain? The motivation for the paper is to shed light on differences in the perceptions of employers and employees in the same workplaces, and to consider the policy implications.

Until recently, most analyses of attitudes towards the employee relations climate in Britain were based on data about workplaces gathered primarily from managerial respondents, such as the long-running series of Workplace Industrial Relations Surveys (WIRS) (Ferne, Metcalf and Woodland, 1994; Fernie and Metcalf, 1995; Wood and de Menezes, 1998; Moreton, 1999). This began to change in the late 1990s, with analyses of employee data from the British Social Attitudes Surveys (*BSAS*) (Bryson and McKay, 1997; Bryson, 1999) and the Workplace Employee Relations Survey 1998 (WERS98) (Cully *et al.*, 1999; Scholarios *et al.*, 1999). The WERS98 data offer a unique in-sight into the employee relations climate in Britain because they contain similar measures of perceptions of climate for employees and employers working in the same workplaces. The distribution of responses from management and employees is presented in Table 1. It is apparent that employees have poorer perceptions of workplace employee relations than their managerial counterparts.¹ Nevertheless, over half viewed the employee relations climate at their workplace as ‘very good’ or ‘good’.

Table 1: Ratings of Management-Employee Relations in 1998

	Employees	Management
Very good	15	42
Good	40	48
Neither good nor poor	27	8
Poor	12	2
Very poor	6	1
Weighted base	27,659	2185
Unweighted base	27,691	2188

Note: In a self-completion questionnaire, employees were asked: ‘In general, how would you describe relations between managers and employees here?’ The employee base is all employees excluding 524 unweighted cases with missing data. In a face-to-face interview, the senior manager with responsibility for personnel was asked: ‘Finally, looking at this scale, how would you rate the relationship between management and employees generally at this workplace?’

¹ If, as seems possible, employee relations were poorer in those workplaces where management refused permission to distribute the employee questionnaires, then the ‘real’ gap may be wider. However, our weighting scheme compensates for sample non-response. We believe that survey procedures conveying the confidentiality of information provided by employees were sufficiently rigorous to discount the possibility that employees’ responses were affected by the possibility of management reprisals.

Table 2 presents this information in a different way, restricting the comparison to those instances in which data are available for both employees and the employer. It shows that, while employee perceptions of climate were poorer than managers' perceptions in nearly half of all cases, both parties agreed in one-third of cases and managers' ratings were poorer in 14 per cent of cases.²

Table 2: Agreement on the Climate of Employee Relations

	%
Manager's rating worse by one point	12
Manager's rating worse by more than one point	2
Both parties agree	33
Employee's rating worse by one point	31
Employee's rating worse by more than one point	23
Weighted base	27,625
Unweighted base	27,673

Note: Includes all employees where there are non-missing data for the employee and employer perceptions of climate.

There are a number of reasons why employee perceptions of management-employee relations differ from those of their employer. First, our main managerial respondents have formal responsibility for employee relations at the workplace and, with that authority, should have the opportunity to influence conditions at work in a way that the average worker can not. Employees in general may be less constrained in their criticism of workplace relations than managers who are more directly responsible for them. Secondly, employees' perceptions may differ from their employer's because their perspectives are influenced by different factors. As well as making judgements with different information sets³, employees' perceptions are likely to be influenced by factors such as their general feelings about what their workplace is like to work in (Cully *et al.*, 1999: 280-281), their feelings about the effectiveness of their union, and how they view their own management. It is not surprising, therefore, that employee perceptions of climate do not match the perceptions of their employers. Our purpose in this paper is to assess the contribution of unions and attitudes towards unions in explaining these differences.

² These data differ from those presented by Cully *et al.* (1999: 283) because they relate to all employees with non-missing data in the survey, whereas Cully *et al.* confine their analyses to non-managerial employees in workplaces with 25 or more employees.

³ For instance, workers may be more aware of the 'real' feeling on the shopfloor than management, whereas management may be privy to all formal grievances and disputes in a way that most employees will not.

Our findings provide a context in which to appraise the impact of a new piece of legislation. The *Fairness at Work* White Paper (Department of Trade and Industry, 1998), launched by the Secretary of State for Trade and Industry in May 1998, argued that effective unions are conducive to good employee relations. Moreover it claimed that harmonious employee relations based on partnership between workers and their employer improve both the working lives of individuals and the performance of organisations. However, the government also went on to argue that these benefits may be jeopardised if, against the wishes of their employees, employers refuse to recognise a union for pay bargaining and worker representation. Accordingly, the White Paper proposed a procedure under which an employer might be compelled to recognise trade unions where a majority of employees so wish. The statutory recognition procedure was contained in the Employment Relations Act 1999, and has been in effect since 6 June 2000.⁴ As our data were obtained at a time when employers were still at liberty to decide for themselves whether or not to recognise unions, it is not possible to infer directly from our results whether the new statutory provisions will improve workplace governance.⁵ Even if we were to find that the presence of recognised trade unions was associated with good employee relations, we would have to acknowledge that forcing an employer to recognise a union against their wishes could well sour employee relations rather than improve them. Indeed, some critics of the new legislation have pointed to the failure of previous statutory arrangements for union recognition introduced in the early 1970s, suggesting that it demonstrated that compelling employers to deal with trades unions will be damaging to the conduct of employee relations (Confederation of British Industry, 1998). However, our analysis can shed light on two issues that are fundamental to any consideration of the links between unions and workplace governance, irrespective of the statutory environment. The first is whether the presence of recognised unions has a beneficial effect on governance and, if so, under what circumstances. As we detail further below, evidence has emerged recently that the influence of unions is diminishing even where, at least nominally, they continue to be granted recognition rights. There are theoretical grounds for suspecting that this development will adversely affect workplace relations. The second issue we can illuminate is whether the impact of unions depends on how management

⁴ Under the legislation, employers with more than 20 employees are required to recognise unions for bargaining on pay, hours and holidays if a majority of relevant workers demonstrate support for it. To achieve recognition, a union must show in a secret ballot that it has the support of 40 per cent of those working in the bargaining unit, as well as a majority of those voting. Alternatively, the union can demonstrate that more than half of the workers in the unit are union members.

reacts to them. We contend that good employee relations can only be fashioned with the support of management and workers: it is not simply a gift to be bestowed by one side or the other, no matter how willing they may be.

The rest of the paper is set out as follows. Section 2 discusses trends in unionisation and employer and employee orientations to unions that may have a bearing on union influence over workplace governance. It goes on to outline theoretical links between unions and the employee relations climate and the five hypotheses tested in the paper. In Section 3 we introduce the *WERS98* data used in our analyses. Section 4 discusses our analytical approach. Results are presented in Section 5 and Section 6 concludes.

2. Theoretical Links Between Aspects of Unionisation and the Climate of Employee Relations

2.1 Background

The last two decades have been a period of continuous decline for trade unions in Britain. The unionised sector shrank due to falls in membership and a rapid drop in the number of employers recognising unions for collective bargaining (Millward *et al.*, 2000; Machin, 2000). But the issue at the heart of this paper is: what influence do unions have where they retain a foothold in the workplace? We focus on four aspects of unionisation which may influence both the size and direction of union effects on the climate of employee relations. These are union strength, bargaining arrangements, managerial support for unions, and the effectiveness of unions as perceived by employees.

Union strength: Unions' influence in the workplace derives, in large part, from their bargaining power, stemming from their ability to disrupt the supply of labour in pursuance of their members' interests. But it also comes from the union's role as the representative 'voice' of employees in the resolution of workplace grievances and disputes. Both sources of influence depend on the credibility of the union in claiming to represent the workforce. This has diminished since the early 1980s. Even where unions continue to be recognised by the employer for bargaining purposes, there has been a decline in the proportion of employees

⁵ For an attempt to do so using historical and international comparative analysis see Wood and Godard (1999).

whose terms and conditions are set by collective bargaining and the proportion who are union members (Millward *et al.*, 2000). This may explain the absence of a general union wage mark-up (Forth and Millward, 2000) and, by 1998, the disappearance of negative union effects on workplace financial performance usually attributed to the monopoly power of unions (Addison and Belfield, 2000; Bryson and Wilkinson, 2001).

However, the decline in these ‘average’ union effects for some workplace outcomes is by no means the whole story. First, some average union effects remain powerful. For instance, unionised workplaces had slower growth rates than non-unionised workplaces in the 1990s, *ceteris paribus*, suggesting that union effects are not benign (Bryson, 2001a). Secondly, many workplaces still have ‘strong’ unions with high membership, high bargaining coverage and on-site lay representation (Millward *et al.*, 2000: 179-183). One might expect the ‘returns’ to well-organised, or strong, unions to be relatively greater now that average union strength has declined. Forth and Millward (2000) confirm this in their analyses of the union wage premium. They found that, by 1998, there was no general union premium, but there was a sizeable mark-up in workplaces with high bargaining coverage. Thirdly, as discussed in greater detail below, even weak unions may still have appreciable effects on employee perceptions of climate.

Bargaining arrangements: Bargaining arrangements refer to the ways in which unions and employers are organised for bargaining purposes. An individual union may negotiate separately for different groups of workers but, in the main, the number of recognised unions at a workplace sets a limit on the number of separate bargaining groups. Separate unions may negotiate together. Where all recognised unions negotiate together this is known as ‘single-table bargaining’.

During the 1990s, there was a major switch away from separate bargaining to joint bargaining in workplaces where collective bargaining was the dominant form of pay determination (Millward *et al.*, 2000: 203). In 1990, only 40 per cent of these workplaces had single bargaining units. This had risen to 77 per cent in 1998. The principle cause of the trend to single-table bargaining was not the reduction in multi-unionism which occurred over the period, but a simplification of bargaining arrangements where more than one union existed (Millward *et al.*, 2000: 204). The change was the result of behavioural change in workplaces which continued in operation over the period, coupled with the near universal adoption of single-table bargaining among unionised workplaces that had come into being since 1990 and those growing above the 25-employee threshold used for sampling in the

WIRS series. If these trends continue, single-table bargaining will become still more prevalent.

Bargaining structures are not simply determined by unions. Indeed, when Millward *et al.* (2000) investigated the reasons why continuing workplaces had shifted to single-table bargaining, they concluded that ‘many, if not most, of the moves towards simpler negotiating arrangements were at the instigation of management’ (Millward *et al.*, 2000: 205). This implies that employers feel they had something to gain from simpler bargaining arrangements: these gains might include a better employee relations climate.

Management attitudes to unions: What has caused the general decline in the ‘take-up’ of unions among employees and employers, lies beyond the scope of this paper.⁶ However, as discussed below, employer support for unions and employee perceptions of the job done by unions may be important in explaining the effects of unions on perceptions of workplace governance. Trends in these two factors provide useful background to the discussion of their effects on climate below.

Where employers are at liberty to choose whether they recognise trade unions, unions are heavily reliant on the support, or at least acquiescence, of management, to conduct their business in representing members. This was the case for the period up to 1998 for which we have data.⁷ However, employees are less likely to think that their employer endorses union membership than they were in the mid-1980s (Bryson, 2001b; Gallie *et al.*, 1998: 107)). Survey evidence from managers in workplaces recognising unions shows that, while management endorsement of union membership rose in the 1980s, partly offsetting the decline in the closed shop, endorsement of membership declined markedly in the 1990s, along with a decline in the closed shop (Millward *et al.*, 2000: 145-149). Union derecognition was relatively rare over the period (Millward *et al.*, 2000: 103-104). Instead, where employers continue to recognise unions, they appear to be capitalising on changes in the labour market and the legal framework which have strengthened their bargaining power vis-à-vis employees to refashion their relationship with organised labour. In 1998, a clear majority of managers in workplaces recognising unions expressed a preference for consulting directly with employees rather than with unions (Bryson, 2001c). This is consistent with case studies uncovering instances in which recognised unions are by-passed in managerial

⁶ For discussion of this issue see Millward *et al.*, 2000; Metcalf, 2000; Machin, 2000.

decision-making (Marchington and Parker, 1990; Darlington, 1994), and evidence from WERS98 on ‘the extent to which worker representatives were excluded altogether from the province of many workplace issues’ (Cully *et al.*, 1999: 105).

Union effectiveness: These considerations may lead us to suspect that managers are less constrained than they were in the 1980s in pursuing corporate goals, sometimes at the expense of employees. Consequently, other things being equal, employee representations to management may be less influential in the governance of the workplace. However, evidence from *BSAS* indicates that employees are no more likely to view unions as ineffective in the late 1990s than they were in the early 1980s (Bryson, 2001c).

2.2 Hypotheses

Relations between unions and employers are often portrayed as a ‘zero-sum game’, where union members benefit at the expense of employers, and *vice versa*. However, there is theory and evidence to indicate that both workers and employers can benefit from unions under certain conditions. Unions may have offsetting influences on climate arising from their dual function in bargaining on behalf of members for improved pay and conditions, on the one hand, and in representing the ‘voice’ of workers to management on the other. Consequently, their actual impact on climate is a matter for empirical investigation. Below we outline five hypotheses tested in the paper which suggest ways in which unionisation may affect employer and employee perceptions of climate.

First hypothesis: Managers perceive the workplace employee relations climate to be better where they deal with a unified worker voice able to represent the majority of workers. However, where unions are particularly strong, managers will perceive climate to be poorer.

Managers are likely to view the climate poorly where strong unions use their bargaining power to take a greater share of profits at the expense of the firm⁷, particularly where this results in conflict or discord. On the other hand, unions can operate as effective

⁷ Although statutory rights to recognition under the Employee Relations Act 1999 diminish reliance on employers for formal recognition, in practice it is likely that unions will remain reliant on employer support if they are to make effective representations on behalf of their members.

⁸ Pay bargaining may have similar effects in the public sector where wage demands must be satisfied, along with competing claims for resources, from fixed budgets set by officials and politicians.

agents for management in enforcing desired effort in return for agreed rewards, and in delivering worker compliance with management-initiated change. However, they can only do this where they are perceived by management and employees as the legitimate representative of the employees' voice. From this principle-agent perspective, it makes little sense for employers to maintain ineffectual unions, since unions require influence if they are to reduce employers' agency costs in maintaining and enforcing desired levels of worker effort.⁹ Unions can also contribute to better management perceptions of climate where they are effective in communicating and seeking to resolve employee grievances (Freeman and Medoff, 1984). Weak unions may have a particularly negative influence on managerial perceptions of climate, arising from the frustration in having to deal with a union which is not capable of operating as an effective voice or agent.

Analysis of the 1990 Workplace Industrial Relations Survey showed that managerial perceptions of climate were 'worse where the strong and weak versions of unionisation exist than it is in non-union workplaces or those with middling union strength' (Ferne and Metcalf, 1995: 401). The authors suggest that 'the benefits from having a union representing the bulk of the labour force in a workplace ... flow from greater voice and representativeness and less fragmentation of workplace employee relations' (Ferne and Metcalf, *op. cit.*). This may have remained so in the late 1990s, even though declines in union density and bargaining coverage meant fewer workers were represented by union voice where it was present. We test whether this was the case in 1998 with our union strength and bargaining arrangement measures, described later.

Second hypothesis: Employees' perceptions of climate will be best where unions have sufficient strength to represent their voice to management.

Genuine co-operation between management and employees seems unlikely if employees have no access to independent sources of power to represent them and protect their interests. Marshall (1992) argues that co-operative relations cannot be maintained where there is a substantial power imbalance between management and unions because the stronger party will opt for unilateral control over co-operation. Where unions are weak, and employers are tempted to exercise unilateral control, employees may be less trusting in

⁹ Also, distributive bargaining relies on 'interdependency' between employer and union, at least in the long run (Walton and McKersie, 1965).

management and perceptions of climate may be poor.

Whereas particularly strong unions may be associated with poorer managerial perceptions of climate, strong unions are unlikely to have this effect on employees' perceptions. Indeed, if strong unions are best able to deliver better terms and conditions for employees, this may result in better employee perceptions of the working environment than might otherwise be the case.

Analyses of *BSAS* indicate that employees' perceptions of climate are indeed poorest where unions are weak, and they are at least as good as perceptions in non-unionised workplaces where employees think union power in the workplace is 'about right' (Bryson, 2001c).

Third hypothesis: Employee perceptions of climate are no worse, and may even be better, where voice is fragmented, than they are where there is a unified worker voice.

Although employers may benefit from a single, unified worker voice, this may not be the case for employees. It may well be that employees' interests can be adequately represented through a single union, or multiple unions operating in concert. But if workers are heterogeneous, multiple unions operating separately may better represent their needs. In practice, single unionism may be particularly unsuited to meeting the majority of employees' needs because it is associated with lower union density and bargaining coverage than multiple unionism (Bryson and Wilkinson, 2001). This may help to explain why, by 1998, the union wage premium in Britain was confined to workers in multiple union workplaces (Forth and Millward, 2000).

It is also possible that non-union voice mechanisms such as direct two-way communication between management and employees, can complement union voice and, as such, enhance employee perceptions of climate. It may do so if it operates as a more efficient method of communication between employees and the employer, as some human resource management academics suggest (Storey, 1992), and where it involves employees not covered by union voice. Employees' perceptions of management improve where there is intensive use of direct communication methods between management and employees (Bryson, 2000). This is particularly so in a union setting, suggesting some complementarity between union and non-union voice (*op. cit.*).

Fourth hypothesis: Managerial and employee perceptions of workplace governance are better where managers support union membership, and are poorest where managers discourage membership.

The acts or omissions of one party may be able to sour employee relations, but no matter how constructive a union wishes to be, or how strong it may be organisationally, a co-operative environment is likely to require that management engages constructively with the union, and *vice versa*. Only then can the ‘space’ for collaboration (or what is sometimes termed ‘concertation’ (Hyman, 1997: 323) be created. In this sense, ‘the extent to which a union is a liability or an asset [for the employer] depends crucially on how management responds to it’ (Freeman and Medoff, 1984: 5).¹⁰ Thus, a co-operative environment is likely to require that management engage constructively with the union, unless it can devise non-union employee involvement strategies that substitute for unions. Conversely, where management opposes membership, a low trust relationship may ensue, resulting in a deterioration in perceptions of climate. Recent evidence from analyses of BSAS shows that, *ceteris paribus*, employees’ perceptions of climate are indeed best where management supports membership, and are poorest where management is opposed to membership (Bryson, 2001c). I am aware of no evidence on the association between managerial attitudes to unions and managerial perceptions of climate.

Fifth hypothesis: Employees’ perceptions of climate are positively associated with perceptions of union effectiveness.

The perception that a union is effectively protecting and advancing its members’ interests can result in positive perceptions of management (Deery *et al*, 1995). This may occur where union instrumentality¹¹ engenders greater employee allegiance to both the union and the employing organisation (‘dual commitment’), thus resulting in more co-operative and harmonious management-employee relations. It may also occur where perceptions of union effectiveness are associated with perceptions of a fairer, more challenging and satisfying

¹⁰ Similar arguments apply to other workplace outcomes such as financial performance. Thus, the behaviour of one party may be responsible for poor financial performance but, as Denny and Muellbauer (1988: 6) argue: ‘it is not the independent effect of trade unions but the interaction of unions and management that can cause improved economic performance’.

work environment. This, in turn, can positively influence perceptions of management (Deery *et al.*, 1999: 546).

Gallie *et al.* (1998: 72-86) find that employees perceive supervision to be tighter, and technical and bureaucratic methods of management control to be more evident where unions are perceived as having greater influence. The authors suggest that ‘a reasonable inference, then, is that intensive control systems were preferred by organisations where managerial power was contested’ (Gallie *et al.*, 1998: 85). It may be that, where unions contest ‘the terrain’ with management, employee perceptions of the working environment actually deteriorate, in which case trust in management may also deteriorate. This line of reasoning cautions against a simple assumption that effective unionism will translate into better perceptions of climate. In fact, analyses of *BSAS* indicate that employees’ perceptions of climate are particularly poor where unions are perceived to be ineffective (Bryson, 2001c). Where unions are viewed as effective, perceptions of climate among employees in unionised workplaces did not differ from the perceptions of employees in non-unionised workplaces, *ceteris paribus*.

3. The Data

The Workplace Employee Relations Survey 1998 (WERS98) is a nationally representative survey of workplaces with 10 or more employees covering all sectors of the economy except agriculture.¹²

Our analyses use two elements of the survey. The first is the management interview, conducted face-to-face with the most senior workplace manager responsible for employee relations. This was supplemented by a pre-interview self-completion questionnaire providing workforce data that might have involved interrogating records. Interviews were conducted in 2191 workplaces with a response rate of 80 per cent. The second element we use is the survey of employees within workplaces where a management interview was obtained. Self-completion questionnaires were distributed to a simple random sample of 25 employees (or

¹¹ In this context, union instrumentality means ‘the degree to which the union achieves the valued goals of employees’ (Deery *et al.*, 1995: 9).

¹² For a comprehensive technical account of the survey see Airey *et al.* (1999) and for the initial analysis of the survey see Cully *et al.* (1999). The survey data sets are available from The Data Archive, University of Essex.

all employees in workplaces with 10-24) in the 1880 cases where management permitted it.¹³ Of the 44,283 questionnaires distributed, 28,237 (64 per cent) usable ones were returned.¹⁴

3.1 Climate measures

Our climate measures are those presented in Table 1. Others have used composite indexes of managerial relations derived from a number of items contained in the employee questionnaire when exploring employees' perceptions of climate (Guest *et al.*, 1999; Scholarios *et al.*, 1999). Although there are advantages to moving away from reliance on a single-item response, I have chosen to focus on the single item to allow for comparability across the analyses of managerial and employee perceptions.

3.2 Workplace-level measures of trade unionism

Below we describe the dimensions of unionisation used in our analyses, namely union strength, bargaining arrangements, managerial attitudes to unions and employee perceptions of union effectiveness. We also identify some of the ways in which these measures might relate to employee and employer perceptions of climate.

Distributions for these variables and control variables are presented in Appendix Tables 1 and 2 for management and employees respectively.

Union strength: Union recognition by the employer for pay bargaining is the basis for union influence in the workplace. Although rights to represent members in grievance procedures and other matters, and rights to negotiate over non-pay issues are important in building a membership base and allow unions some influence over workplace matters, these rights rarely exist without the right to negotiate over pay (Millward, 1994: 30-33). Since payment is generally regarded as 'the most conspicuous focus of collective concern for labour' (Brown *et al.*, 1995: 123), unions that are not recognised for pay bargaining purposes can only address issues of peripheral interest to workers collectively.

¹³ The probability of worker selection is the product of the probability of the workplace being selected and the probability of an employee being selected from within that workplace. Cully *et al.* (1999: 306) note the advantages of this approach.

¹⁴ The weighting scheme used in this paper compensates for sample non-response bias which was detected in the employee survey (Airey *et al.*, 1999: 91-92).

When distinguishing unions according to their strength, analysts have traditionally compared union recognition with and without a closed shop, whereby at least some employees are required by the employer to be union members. However, the closed shop has been in decline since the beginning of the 1980s, and is now legally unenforceable. By 1998, only 2 per cent of workplaces recognising unions were maintaining a closed shop so it is not possible to rely on it as the single most important indicator of union strength.

Analysts have frequently combined the closed shop and management endorsement of union membership as a single measure of union strength, since the recommendation of union membership by management may not differ substantially in practice from closed shop arrangements (Wright, 1996). This is particularly so now that the closed shop is no longer legally enforceable in Britain. However, management endorsement is an ambiguous measure of union strength because, although it may assist in the recruitment of members, thus strengthening a union, it may be a sign that a union is not wholly independent of management, and may even be reliant on management support for its position. Therefore union strength and management support for unions are conceptually different. A union may be strong without management support. Where it is strong in the face of management opposition, the employee relations climate may be conflictual. Where it is strong and has management support, climate may be better. Therefore we prefer to treat the existence of a *de facto* closed shop and strong endorsement of union membership as measures of managerial attitudes towards unions, rather than measures of union strength.

The influence the union wields in the workplace is also likely to depend on the proportion of employees it can count among its members. Mean union density¹⁵ declined markedly in workplaces with recognised unions over the 1980s and 1990s, but there was a sharp increase in the rate of decline in the 1990s (Millward *et al.*, 2000: 140-145), implying a considerable loss of influence in the workplace. By 1998, it stood at 58 per cent in workplaces with 10 or more employees. Higher union density may influence employer and employee perceptions of a union's legitimacy in representing workers' interests, predisposing them to take greater account of what the union is saying. Where unions represent most of the workforce, they can represent workers' interests with a strong 'voice'. Where they represent a minority of workers, they may lack influence over sections of the workforce.

¹⁵ Mean workplace-level union density is the sum of the percentage of employees in membership for each workplace, divided by the number of workplaces. This measure is the one we use in our analyses. It differs

Consequently, their ability to work constructively with employers may be hampered by their inability to deliver worker support for change. Equally, their ability to disrupt production is diminished. These considerations may explain why employers are less likely to listen to the union if only a minority of employees back it than if the union represents a majority voice – even if the employer has chosen to recognise the union (Cully *et al.*, 1999: 105-6).

Despite being an indicator of union strength, workplace union density has not featured in many analyses of the employee relations climate, primarily because of difficulties in interpreting its effects. The proportion of a workforce that is unionised may be directly influenced by the climate of the workplace since employees' propensity to join a union may be affected by the existing employee relations climate. For instance, where climate is poor and workers wish for a more effective voice, they may be more inclined to join a union. In this case, higher union density may be correlated with poor climate, but it is the poor climate which has resulted in higher density, rather than *vice versa*. The second difficulty in using workplace-level union density is the difficulty in interpreting what union density is capturing. It is highly correlated with a number of other union measures, such as managerial support for unions, and managers' desire to consult with unions rather than directly with employees (Cully *et al.*, 1999: 90). Despite these caveats we consider the effects of union density.

The percentage of workers whose pay is jointly determined by employers and unions through collective bargaining is another fairly direct measure of union influence in the workplace. By this measure, unions have lost a good deal of influence over joint regulation since the mid-1980s, despite being formally recognised for pay bargaining. There has been a marked decline in collective bargaining coverage in unionised workplaces since 1984 (Millward *et al.*, 2000: 159-167). Furthermore, for the first time, a sizeable proportion of workplaces with recognised unions reported having no workers covered by collective bargaining. The rate of decline, and the emergence of many unionised establishments with no effective bargaining, have been so dramatic that commentators suggest they 'may mark a qualitatively different phase in the development of unionism' (Millward *et al.*, 2000: 167).

Another indicator of union organisational strength is the presence of a trade union representative. Union representatives may also be viewed as 'voice mechanisms', operating as a channel for communication between local membership and management, and assisting in the resolution of disputes and grievances (Cully *et al.*, 1999: 201-203). WERS98 provides

from aggregate union density, the mean of which is derived by summing the members across a set of workplaces and then dividing by the total number of employees in those workplaces.

evidence that worker representatives are increasingly conforming to this role, attaching greater importance to ‘dealing with problems raised by the treatment of employees by management, and to resolving disputes’ (Cully *et al.*, 1999: 201), rather than the more ‘traditional’ activities of maintaining wages and benefits. If they are effective in this role, the presence of representatives on-site may contribute to more positive perceptions of management-employee relations.¹⁶

Bargaining arrangements: Traditionally, bargaining arrangements are equated with bargaining power: complementary workers will choose separate bargaining, while substitutable workers will choose joint bargaining (Horn and Wolinsky, 1988).¹⁷ If workers are close substitutes they will do better by joining forces in either a single union or joint bargaining arrangement, helping them to avoid divide-and-rule tactics by the employer. If groups of workers are highly complementary, each group is powerful under separate bargaining as the employer needs all groups to maintain production. Furthermore, separate bargaining arrangements may permit consideration of different issues facing different groups of workers. If this delivers desirable outcomes for workers, the process may result in increased worker motivation, improved productivity and thus performance. Nevertheless, separate bargaining always carries with it the risk that employers will be able to ‘divide-and-rule’, leading to a deterioration in employees’ perceptions of the employee relations climate.

However, bargaining arrangements may have effects on employer and employee perceptions of climate that can not be reduced simply to their impact on relative bargaining power. Employers may benefit when negotiating with a unified worker voice, which may take the form of a single union, or separate unions bargaining together. This is attractive to employers when it limits the sort of inter-union rivalry in the bargaining process which results in ‘leapfrogging’ claims, and where it reduces the costs to employers of engaging in bargaining with multiple unions. But multi-unionism may be associated with poorer managerial perceptions of climate, whether there is joint bargaining or not. This may occur where unions are engaged in demarcation disputes, jurisdictional disputes regarding rights to

¹⁶ If unions were losing their organisational strength in the 1990s, one might have expected a continuation in the decline of on-site representation that had begun in the latter half of the 1980s. In fact, evidence from the WERS98 cross-section and panel indicates that on-site representation stabilised in the 1990s, with around seven-in-ten workplaces with 25 or more employees and a recognised union also having an on-site representative (Millward *et al.*, 2000: 153-154). Among workplaces with 10 or more employees with recognised unions, 59 per cent had an on-site representative in 1998.

¹⁷ Naylor (1995) demonstrates why separate bargaining is associated with unions capturing more of the available rents at a workplace.

represent, membership poaching disputes, or other forms of ‘competitive militancy’, although it is rare in practice (Dobson, 1997). On the other hand, multi-unionism may increase productivity among heterogeneous workers if it is a superior means of diagnosing and articulating workers’ grievances, resulting in a better climate (Metcalf, *et al.*, 1993: 9).

Our analyses consider the number of unions recognised for pay bargaining at the workplace and, where there is multi-unionism, whether they bargain jointly or separately.

Managerial attitudes to unions: the data contain four measures of management support for unions, three obtained from the management respondent, and one asked in the employee questionnaire.

The following question is asked of both management and employees:

‘How would you describe management’s general attitude towards trade union membership among employees at this establishment? Is management...

... in favour of trade union membership

... not in favour of it

... or neutral about it?’

Table 3 indicates that managers view themselves as more in favour of unions than their employees seem to think. Where there was no recognised union, very few managers (3 per cent) said they were not in favour of union membership (compared to 26 per cent in workplaces without recognition), although over a third (36 per cent) said they were ‘neutral’ about it. However, 16 per cent of employees in unionised workplaces felt that their managers were not in favour of union membership, a figure which would indicate a substantial degree of opposition to unions on the part of management.

Table 3: Management Attitudes to Unions

Column percentages

	Employees	Management
In favour	18	27
Neutral	54	54
Not in favour	27	17
<i>Weighted base</i>	<i>25313</i>	<i>2180</i>
<i>Unweighted base</i>	<i>25523</i>	<i>2182</i>

Base: all employees excluding ‘don’t know/not answered’ and all managerial respondents excluding ‘don’t know’, ‘not answered’ and ‘not an issue’.

As well as asking whether any employees have to be union members to get or keep their jobs, which is the basis for the closed shop measure, managers are also asked: ‘Are

there any employees here who management strongly recommends should be union members?' This is our third measure of management attitudes to unions.

Finally, WIRS has traditionally contained little information on how employers wish to work with unions at their workplace. This gap is filled in WERS98 with a question about how strongly the respondent agrees with the statement: 'We would rather consult directly with employees than unions'. Almost three-quarters of managerial respondents agreed with the statement. Perhaps more revealing still is the fact that 18 per cent of managerial respondents in unionised workplaces agreed strongly with the statement, and a further 37 per cent agreed.

Employee perceptions of union effectiveness: WERS98 contains data on two sorts of union influence, as perceived by employees. The first is perceptions of union effectiveness in working for employees and serving their interests. Where employees are aware of a workplace union, they are asked how strongly they agree that unions at the workplace 'take notice of members' problems and complaints'. Among those giving a valid answer, the percentage of members agreeing was similar across workplaces with and without recognised unions (72 per cent where they were recognised and 69 per cent where there was no recognition). Non-members were less likely to agree, whether they worked in workplaces with recognised unions or not (55 and 56 per cent respectively).

The second sort of measure is employee perceptions of the difference unions make at the workplace, and the influence they have over management. Our preferred measure is based on how strongly they agree or disagree with the statement that unions or staff associations at the workplace 'are taken seriously by management'. Roughly half of employees in workplaces with 10 or more employees agree with the view that unions are taken seriously by management. Although the figure is a little higher where the individual is a member of a recognised union, the differences are not large.¹⁸

3.3 Control variables for analyses of managerial perceptions of the employee relations climate

Appendix Table 1 defines these variables and shows their incidence in the sample, but I introduce them briefly below.

¹⁸ However, the differences are much larger when one takes account of the fact that so many non-members are unaware that a recognised union operates at their establishment.

Respondent characteristics: I experimented with a number of variables capturing the nature of the managerial respondent. The final models incorporate three. First, since previous research indicated that women tend to have better perceptions of climate than men (Bryson and McKay, 1997) we identify whether the respondent was a woman. Secondly, we include whether the respondent was a personnel or employee relations specialist since research with WIRS90 found specialists had poorer perceptions of climate than other managerial respondents (Ferne, Metcalf and Woodland, 1994). Previous research indicates that employees' perceptions of climate deteriorate with time in their job; we incorporate job tenure on the assumption that this effect will also apply to managers.

Workforce composition: Managerial perceptions of climate are better in smaller workplaces (Ferne, Metcalf and Woodland, 1994), so I include a categorical variable capturing the number of employees at the workplace. Three additional variables capture the composition of the workforce: the percentage of women, part-timers and non-white ethnic minorities.

Workplace ownership, sector and location: In the same way that smaller workplaces are often associated with better managerial perceptions of climate, so too are smaller organisations: the distinction between workplaces which are single independent establishments and those belonging to multiple-establishment organisations helps capture this. I also make use of information that identifies workplaces owned by individuals or families also involved in the day-to-day running of the workplace. Public and private sector organisations differ markedly in the way they manage employee relations (Millward *et al.*, 2000: 61-80). For example, their bargaining arrangements are very different. So we control for this with a dummy variable. I use the one-digit standard industrial classification to capture other industry-specific differences. A twelve-category regional variable captures workplace location. Although debate about the 'new' industrial relations has died down somewhat, it is still equated with younger workplaces, those set up on greenfield sites, and foreign-owned workplaces (Millward, 1994). I control for these factors.

Workplace activity: Workplace climate may be affected by the pressures associated with exposure to a competitive market environment. The workplace activity variable distinguishes workplaces producing goods and services for consumers, those supplying to other companies, those supplying to other parts of the organisation they belong to, those that do not produce goods or provide services for the open market, and those that are purely administrative offices.

Management practices: If unions are more likely to gain a foothold where management is poor (or good) the estimates of union effects on climate may be biased since they may simply indicate that a workplace is poorly or well-managed (Huselid and Becker, 1996). I include a wide range of management practices to account for this possibility, as recorded in Appendix Table 1. It is worth mentioning some of them briefly. First, there are the human resource management practices. HRMScore is loosely based on the managerial concepts outlined by Pfeffer (1995) which he argues produce a sustainable competitive advantage through the effective management of people. The measure is a count of practices identified by Pfeffer, supplemented by other aspects of human resource management identifiable in the literature.¹⁹ (I have experimented with the count variable in some models; in others I included the full set of practices.) Secondly, I include a range of voice and communication variables supplementing the union-non-union voice variable referred to below. Some entail two-way communication, others one-way downward communication from management to employees. The third set of management practice variables relates to formal procedures: individual grievance procedures, procedures for dealing with collective disputes, and formal written policies on equal opportunities or managing diversity. Finally, I identify whether the workplace or organisation to which it belongs has been accredited as an Investor in People.²⁰

Non-union voice: The nature of worker voice is captured by a variable which distinguishes workplaces with no voice, union-only voice, direct non-union voice only, or 'dual channel' voice involving a combination of union and non-union voice.²¹

¹⁹ These dimensions are as follows: selectivity in recruiting (SELECTIV); employment security (JOBSECUR); incentive pay (PROFITPY, PERFPAY, CASHBO); employee ownership (ESOP); information sharing (NINFO); participation and empowerment (EMPOWER); self-managed teams (AUTOTEAM); training and skill development (PCOFFJOB, ONGOING); cross-utilisation and cross-training (TROTHJ2); symbolic egalitarianism (SAMETERM); promotion from within (INTERPRO). In addition the score includes an indicator that the workplace has a formal strategic plan (STRATEGY), strategic planning being a key component on HRM according to some commentators (Storey, 1992), and widespread appraisal systems (APPRAISE). The variable is approximately normally distributed.

²⁰ The Investors in People (IiP) award is given to workplaces or organisations by independent assessors from Training and Enterprise Councils in England and Wales (Local Enterprise Companies in Scotland) which have a planned approach to setting and communicating business objectives and developing people to meet those objectives.

²¹ The 'voice' measure (VOICE3) identifies a union voice as being present where there is a recognised union or the union appoints an employee representative to a joint consultative committee which meets regularly. Non-union voice comprises direct voice (incorporating team briefings, regular meetings between senior management and the workforce, and problem-solving groups) and non-union representative voice in the form of a joint consultative committee without union nominees which meets regularly.

3.4 Control variables for analyses of employee perceptions of the employee relations climate

The combination of employee data on demographics, qualifications, job characteristics, and attitudes to their job, management and unions, coupled with workplace data obtained from the manager responsible for personnel or human resource issues at the site, allows us to control for a very wide range of individual-level and workplace-level information to estimate precisely influences on managerial responsiveness to employees. Appendix Table 2 defines these variables and shows their incidence in the sample. Here we discuss the rationale for the inclusion of variables that do not appear in our analyses of employer perceptions.

Demographic characteristics of respondents: our analyses incorporate gender, age and ethnicity, all of which have been associated with employee perceptions of management in previous studies (Bryson and McKay, 1997; Gallie, White, Cheng and Tomlinson, 1998). More highly educated workers often have higher expectations of involvement, and may therefore be particularly critical of management where participation is denied. So I include individuals' highest educational qualification, and whether they possess a vocational qualification.

Job-related characteristics: I control for five aspects of individuals' jobs: occupation (based on the 1990 Standard Occupational Classification); years spent working at the workplace; hours usually worked each week; whether the contract is a permanent one; and gross weekly wage. Together these variables help capture an individual's attachment to their workplace, the investment they have made in working there, and their status in the organisation.

The twelve-category ordered variable capturing gross wages controls for a well-known union effect which may confound other union effects, namely the union mark-up on wages. Union-induced wage increases may make workers more positive about their working environment than they otherwise would be, so confounding estimates of a union-induced effect arising through bargaining arrangements.

Union membership status: it is a standard finding in the British and American literatures that unionised workers express greater dissatisfaction with management than non-unionised workers (Freeman and Medoff, 1984; Gallie, White, Cheng and Tomlinson, 1998; Bryson, 1999; Bryson 2000). Freeman and Medoff offer an explanation for this in the greater politicisation of unionised workers. They suggest that unionised workers are more prone to

express their voice ‘loudly’ to ensure that it is heard, resulting in ‘voice-induced complaining’ (1984: 142) which they distinguish from ‘true’ dissatisfaction. They also suggest that ‘some of the critical attitude of union workers is due to their greater awareness of problems and willingness to speak out’ (1984: 142). As Gallie, White, Cheng and Tomlinson (1998: 113-114) point out: ‘unionism as an oppositional form of representation may highlight organisational inefficiencies and colour perceptions of management competence’. In addition, as Freeman and Medoff note (1984: 141), other things being equal, the stock of dissatisfied workers will be greater in unionised workplaces because dissatisfied workers are less likely to quit in unionised workplaces than they are in non-unionised workplaces (Bryson and McKay, 1997). I therefore control for individual union membership status to help distinguish between ‘membership’ and ‘workplace’ union effects.

Workforce composition: Two workforce composition variables are introduced alongside those used in the analysis of managerial perceptions. I include the percentage of managers who are women to identify whether there is anything distinctive about the style of women managers which employees respond to.²² Secondly, I include a count variable identifying the total number of occupations at the workplace to differentiate simpler and more complex work processes. The variable seeks to control for the possibility that effects associated with fragmented bargaining are simply picking up the effects of a more fragmented workforce.

4. Analysis

4.1 The samples

The analysis of managerial perceptions of climate is based on all the respondents to the managerial questionnaire in *WERS98* with non-missing data. The respondent is the person with day-to-day responsibility for personnel and employment relations matters at the workplace. With weighting to account for complex survey design, survey results can be generalised with confidence to the population of workplaces in Britain employing 10 or more employees.

The analysis of employees' perceptions of climate is based on all respondents to the employee questionnaire with non-missing data. Others have confined their analyses of employees' perceptions of climate to non-managerial employees, perhaps because managers are overwhelmingly positive in their assessment of climate and lie on one side of the management-employee line, while non-managerial employees lie on the other (Cully *et al.*, 1999: 276-283). I adopt an alternative approach, analysing the perceptions of all employees with non-missing data. After all, most managers experience 'being managed' or supervised. Those managers actually responsible for employee relations at sampled workplaces were eligible for the main management questionnaire, and were not included in the eligible sample of employees at the workplace. Our models include occupational controls to account for more positive perceptions of climate further up the occupational hierarchy. With weighting to account for complex survey design, the employee survey results can be generalised with confidence to the population of employees in Britain employed at workplaces with 10 or more employees.

4.2 Modelling procedures

The climate variables are categorical indicators defined in terms of ordered responses. I use ordered probit estimators to model the relationship between these dependent variables and sets of independent variables. In ordered probit, an underlying unobservable score is estimated as a linear function of the independent variables and a set of unknown 'threshold' parameters, or cut points. The probability of observing outcome i corresponds to the probability that the estimated linear function plus random error is within the range of the cut points estimated for the outcome. It is assumed that the error term is normally distributed (Greene, 1997). Significant positive coefficients indicate variables associated with better climate.

Analyses take account of the complex survey design allowing results to be generalised to the workplace and employee populations from which the samples were drawn. First, all models are run on data weighted by the inverse of the employer's sampling probability in the case of the analysis of management data, and the employee's sampling probability in the case of the employee data. As well as allowing the results to be generalised to the population from

²² Whether managerial style is gendered has been the subject of much speculation and analysis recently (Wajcman, 1996, 2000).

which the sample is drawn, the use of probability weights also guards against estimation bias which can arise through differential sample selection probabilities.²³ Secondly, we employ the Huber-White robust variance estimator that produces consistent standard errors in the presence of heteroscedasticity.²⁴ Thirdly, we obtain accurate standard errors by taking account of sample stratification and the non-independence of employee observations due to clustering in the primary sampling units, namely workplaces.

This procedure uses pseudo-likelihood methods, the point estimates being those from a weighted ‘likelihood’ which is not the distribution function for the sample. Thus, standard likelihood-ratio tests are not valid (Skinner, 1989; STATA Manual, Release 6, Volume 4, 1999).

5. Results

5.1 Employer perceptions of climate

Appendix Tables 3 and 4 contain estimates of union effects on employer perceptions of the employee relations climate. The dependent variable is the one presented in the last column of Table 1, but due to the small number of respondents saying climate was ‘poor’ or ‘very poor’ I have collapsed these two categories so that the outcome variable runs from 1 ‘poor/very poor’ to 4 ‘very good’. Positive coefficients indicate factors associated with better climate.

Effects of categorical variables such as the type of bargaining arrangement are evaluated against a ‘reference’ category. These categories are identified in the tables, and significance tests in the tables are based on comparisons of coefficients with the reference category. However, there may be statistically significant effects across categories. I test for these and report on all significant effects.²⁵

Appendix Table 3 presents seven models, each containing the full set of control variables, plus alternative measures of union strength. Managers in unionised workplaces

²³ Differential sampling fractions can result in standard estimator biases (Skinner, 1997). The weights account for all variation in sampling probabilities, thus eliminating differential sampling probability as a possible source of estimation bias.

²⁴ The F statistic reported for each model is a Wald test based on the robustly estimated variance matrix.

²⁵ I do so by rebasing the equations, that is, altering reference categories, and, in other cases, by computing whether effects are significant using STATA’s SVYLC command (STATA Manual Release 6, Volume 4, pp.36-50).

had poorer perceptions of climate than managers in non-unionised workplaces, *ceteris paribus*, but the effect is only significant at a 90 per cent confidence level (Model (1)). However, the presence of an on-site union representative offsets this underlying negative effect (Model (2)). Only in the absence of an on-site representative were perceptions poorer in unionised workplaces than in non-unionised workplaces (-0.34, $t=1.94$). It may be that a union with an on-site representative can operate more effectively as an agent for the employer, or as a voice for workers, improving employer perceptions of climate as a result.

The union density and bargaining coverage measures give somewhat conflicting indications as to the effect of union strength. The union density measure provides no support for our proposition that managers may perceive climate as poorer where unions are strong or weak. On the contrary, their perceptions of climate were poorest where union density was mid-range, that is, between 25 and 74 per cent (Model (3)). However, high bargaining coverage *was* associated with poorer managerial perceptions of climate, although 100 per cent coverage was not (Model (4)). Other analyses of WERS98 show that the union wage premium was confined to workplaces with high bargaining coverage, and was absent where there was 100 per cent coverage (Forth and Millward, 2000). Taken together, these findings are consistent with the proposition that managers perceive the climate to be poorest where unions engage in effective wage bargaining.

There is no support for the proposition that managers perceive climate as poorer where worker voice is fragmented. Multi-unionism was not associated with poorer climate (Model (5)), and managerial perceptions of climate did not benefit from a unified worker voice in the form of a single union or single-table bargaining (Model (6)). Finally, although dual channel arrangements, whereby union voice existed alongside non-union voice, were associated with poorer perceptions of climate relative to workplaces with no worker voice, the effect was barely statistically significant (Model (7)).

In general, union strength and the degree to which worker voice is unified appear to be less important in explaining employer perceptions of climate than workforce composition, workplace characteristics such as size²⁶ and industry, and management practices. However, there is some evidence that managers viewed climate more poorly where unions were

²⁶ In contrast to much of the literature, managers of smaller workplaces had poorer perceptions of climate. However, managers in owner-managed workplaces, which are often small, had better perceptions of climate than managers in other workplaces, *ceteris paribus*.

recognised for pay bargaining, particularly where bargaining coverage was high and where on-site representation was absent.

Appendix Table 4 presents models containing three alternative measures of management attitudes towards unions. The models contain the same set of controls as those in Appendix Table 3. Model (1) shows that the negative perceptions of climate in the presence of recognised unions is confined to instances in which the union receives no practical support from management in encouraging union membership in the form of membership endorsement or enforcing a closed shop. This supports the contention that employee relations will be poor where there is a union present that is not actively supported by management. The proposition receives further support in Model (2): controlling for union recognition, where management was ‘in favour’ of union membership, managerial perceptions of climate were more favourable than where they were ‘not in favour’. However, the effect is only significant at a 90 per cent confidence level. Although there is an indication that perceptions of climate were better where managers ‘strongly disagreed’ that they would rather consult directly with employees than with unions, the effect was not statistically significant (Model (3)).

In summary, unionisation has an underlying negative impact on employer perceptions of climate. However, this effect is absent where employers support union membership, and where employers benefit from the presence of a union representative on-site who may operate either as an effective communication channel with management in delivering workers’ ‘voice’, or as an agent for the employer, or both.

5.2 Employee perceptions of climate

Appendix Tables 5 and 6 contain estimates of union effects on employee perceptions of the employee relations climate. The dependent variable is the one presented in the first column of Table 1. The outcome variable runs from 1 ‘very poor’ to 5 ‘very good’. Again, positive coefficients indicate factors associated with better climate.

As in the case of managerial perceptions, union recognition was associated with poorer perceptions of climate, *ceteris paribus*, though the effect is only significant at a 90 per cent confidence level (Appendix Table 5, Model (1)).²⁷ However, in stark contrast to the

²⁷ It is conceivable that individual union membership status and workplace tenure are both endogenous with respect to employee perceptions of climate since those who are least satisfied with the climate may be inclined

findings for managers, employee perceptions were significantly poorer in the presence of an on-site worker representative (Model (2)). It may be that ‘voice-induced complaining’ and awareness of managerial shortcomings, discussed in Section Three, are both heightened in the presence of on-site representatives through their roles as purveyors of information and galvanisers of support for union causes.

Contrary to expectations, employee perceptions of climate were not poorest where unions were weak. Rather, they were poorest where unions were strong. Thus, employee perceptions of climate deteriorated as union density rose (Model (2)). Where union density was low, employee perceptions of climate were no different from those held by employees in workplaces with no union members. Climate was particularly poor where union density exceeded 75 per cent. Similarly, employee perceptions of climate were poorest where bargaining coverage was high (Model (3)). As in the case of employers’ perceptions, perceptions of climate were no different in workplaces with 100 per cent coverage than they were in workplaces with no bargaining coverage, *ceteris paribus*.

Earlier I suggested that employer perceptions of climate might be negatively affected by fragmented worker voice, whereas employees may benefit from fragmentation because fragmentation, whether in the form of multiple unions or union and non-union voice, may be better able to meet the needs of heterogeneous workers. In fact, this was not so. It was *employees* who perceived climate to be poorer where worker voice was fragmented. Employee perceptions of climate were poorest where there were multiple unions (Model (5)), where each union bargained separately (Model (6)), and where there was dual channel communication (Model (7)). Interestingly, Model (6) shows that single-table bargaining can ameliorate the negative effects of multiple unionism. This suggests that poorer employee perceptions of climate in the presence of multiple unionism was associated with the bargaining process, rather than other factors associated with multiple unionism such as demarcation disputes. The negative effects of employers trying to reach agreement with

to respond by joining a union to ‘voice’ their concerns, or leaving (Freeman and Medoff, 1984). I therefore ran all the models presented here excluding individual union membership status and workplace tenure. Since union members are predominantly concentrated in workplaces with unions recognised for pay bargaining, and since unions are known to increase average workplace tenure by reducing the propensity to quit, one would expect the negative effects of membership and longer tenure to transfer to our unionisation measures once they are excluded from the models. This is precisely what happens, so that the union effects are much stronger in the absence of these two variables. For example, in Model (1), the union recognition dummy has a coefficient of – 0.15 and a t-statistic of 3.88 once membership status and workplace tenure are removed. My rationale for their retention in the models is to estimate union effects net of these membership and tenure effects.

unions with competing interests outweighed any beneficial effects arising from multiple unions' ability to represent sections of a workforce more effectively.

In principle, non-union voice may complement union voice, either by helping union non-members to articulate their voice, or by addressing issues for all workers that the union does not address. In practice, dual channel voice was associated with poorer perceptions of climate, suggesting that union and non-union voice may be substitutes for one another, rather than complements.

Appendix Table 6 assesses the impact of managerial support for unions and employee perceptions of union effectiveness on employees' perceptions of climate. As in the case of employers, employees' negative perceptions of climate in the presence of recognised unions were confined to instances in which the union received no practical support from management in encouraging union membership in the form of membership endorsement or enforcing a closed shop (Model (1)). It appears from Model (2) that management attitudes to union membership were instrumental in determining how employees viewed the employee relations climate. As anticipated, using employee perceptions of management attitudes to union membership, it appears that employee perceptions were best where management supported membership, and poorest where they were not in favour of membership.²⁸ However, a different picture emerges when we match in what *employers* said their attitudes were to union membership (Model (3)). Employee perceptions of climate did not differ significantly according to what employers said their attitudes to union membership were, except in the small number of cases where managers had said that union membership was 'not an issue'.²⁹ Taken together, these findings suggest that it is employees' *perception* of management attitudes to unions, rather than the actual, professed views of management, which are important in explaining employees' perceptions of climate. However, there is evidence that employees respond particularly positively to employers who would rather consult with employees directly rather than with unions (Model (4)).

Employee perceptions of union effectiveness were important in explaining employee perceptions of climate. As anticipated, perceptions of climate were better where employees thought the union was taken seriously by management, and they were particularly poor where

²⁸ This finding was confirmed in separate models for union members and non-members.

²⁹ In separate models for union members and non-members, I found employers' professed attitudes towards union membership had no significant effect on members' perceptions of climate. However, non-members were sensitive to the way in which management engaged with unions, favouring the scenario in which management were not in favour of membership, or viewed it as 'not an issue'.

employees thought that management did not taken the union seriously (Model (5)). Running separate models for union members and non-members, these effects were just as strong for non-members as they were for members. This suggests that the finding is not simply measuring the extent to which the union can deliver for its members. It may also be an indicator of the extent to which employers engage seriously with the concerns and interests of all employees. A similar conclusion can be drawn from Model (6) which shows that unions perceived as effectively dealing with members' concerns can contribute to a better employee relations climate. Again, this finding held for members and non-members.

6. Conclusions

Using matched employer-employee data from the WERS98, we have shown that employees tend to have a poorer perception of the employee relations climate at their workplace than their employers. These differences can be explained, at least in part, by union effects since what delivers better climate from an employer perspective does not always do so from an employee perspective, and *vice versa*.

I hypothesised that employer perceptions of climate would be poor in the presence of strong or weak unionism, but that they might be better where unions were strong enough to operate effectively, without having excessive bargaining power. There was some support for this hypothesis, since the poorer perceptions of climate associated with unionisation were confined to workplaces without on-site worker representation, where worker voice is necessarily weak. Equally, employer perceptions of climate were particularly poor where a high percentage of workers were covered by collective bargaining. I interpret this effect as a bargaining effect associated with circumstances in which unions are able to achieve a wage premium.

I also hypothesised that employee perceptions of climate would be poor in the presence of weak unions, and better where unions were sufficiently strong to represent workers' interests. In fact, employee perceptions of climate were *poorest* where there were strong unions present, as indicated by the presence of an on-site representative, high union density or high bargaining coverage. I suggested that these effects might be explained, in part, by the politicising effect of strong unionism, and also by the antagonism that can arise where unions use their bargaining strength to push wage claims.

Contrary to expectations, fragmented bargaining arrangements were not associated with poorer employer perceptions of climate. Instead, they were associated with poorer *employee* perceptions of climate. This suggests that employer moves to simplify bargaining arrangements in the 1990s, discussed in Section Two, may have been in response to employee concerns about fragmentation, rather than a direct response to employers' own perceptions of employee relations.

There is support from both employers and employees for the contention that employee relations will be poor where there is a union present that is not actively supported by management. But from an employee perspective, it is employees' *perception* of management attitudes to unions, rather than the actual, professed views of management, which are important in explaining employees' perceptions of climate.

Finally, the analysis confirms that the direction of union effects on employee perceptions of climate depends on how they perceive union effectiveness in dealing with employers and with employees concerns. Where they are perceived as effective, they contribute to better perceptions of climate, whilst ineffective unions are associated with poorer climate. This was true for union members and non-members alike.

Appendix Table 1: Control Variables Used in Analysis of Managerial Perceptions of the Employee Relations Climate

Collective bargaining:	
CBA, collective bargaining arrangements:	
No recognised union	64
Single union	23
Multi-union, joint bargaining	8
Multi-union, separate bargaining by each union	5
Multi-union, separate bargaining by groups of unions	*
Multi-union, bargaining arrangement data missing	1
NCOV2PC7, % of workforce covered by collective bargaining:	
None	64
1-19%	3
20-39%	2
40-59%	5
60-79%	4
80-99%	5
100%	17
NCOV2PC, % workforce covered by collective bargaining, continuous	27
NRECOG3, number of recognised unions	
0	63
1	23
2	8
3	3
4 or more	2
Other union-related variables:	
UREP2, if on-site union representative	20
CLSHOP, union membership arrangements:	
No union members	53
Closed shop	1
Management strongly recommends union membership	9
Union members present but no closed shop or management endorsement	37
NDENS6, union density	
No union members	53
1-24%	12
25-49%	10
50-74%	11
75-99%	9
100%	4
Some members, don't know how many	1
NDENSITY, union density, continuous	24
EVIEW5, how would you describe management's general attitude towards trade union membership among employees at this establishment?	
In favour	28
Not in favour	16
Neutral	54
Not an issue	2
Other answer	*
APHRAS07, we would rather consult directly with employees than with unions:	
Strongly agree	32
Agree	43
Neither agree nor disagree	15
Disagree	9
Strongly disagree	1
VOICE3, nature of worker voice:	
Union only	5
Dual channel	30
Non-union only	48
No voice	17

Respondent's characteristics:	
RESPFEM, if respondent a woman	37
SPECIAL, if respondent is employee relations specialist according to job title	19
JTEN6PS, if respondent in current job for six or more years	37
Workforce composition:	
PCFEM, % of workforce who are women	54
PCPTCAT, % of workforce who are part-timers:	
None	18
Under 10%	19
10%, under 25%	15
25%, under 50%	17
50%, under 75%	20
75% or more	12
PCETHNI5, % of workforce from non-white ethnic minorities:	
None	62
Under 5%	16
5-10%	11
11-19%	5
20% or more	6
NEMPSIZE, number of employees at workplace:	
10-24	50
25-49	26
50-99	13
100-199	6
200-499	4
500 or more	1
Workplace ownership:	
PUBLIC, if public sector	25
DAYTODAY, if single individual/family with controlling interest is involved in day-to-day management of workplace on full-time basis	17
SINGLE, if single independent workplace (as opposed to part of a multi-site organisation)	30
UKFOR, UK or foreign-owned:	
UK owned	93
Foreign owned	6
50/50	1
Workplace activity, age and location:	
ASIC, standard industrial classification (single digit):	
Manufacturing	13
Electricity, gas and water	*
Construction	4
Wholesale and retail distribution	19
Hotels and restaurants	8
Transport and communication	5
Financial services	3
Other business services	11
Public administration	5
Education	13
Health	14
Other community services	5
KACTIVI, activity at the workplace:	
Produce goods or services for customers	53
Supplier of goods or services to other companies	24
Supplier of goods or services to other parts of organisation to which we belong	3
Do not produce goods or services for sale in open market	15
Administrative office only	5
AGECAT2, age of establishment at current address:	
Under 3 years	11
3-20 years	50

Over 20 years	40
GREENFLD, if workplace set up on greenfield site in last 10 years	5
SSR, Standard statistical region:	
East Anglia	4
East Midlands	7
London	12
North	5
North West	13
Scotland	8
Rest of South East	21
South West	9
Wales	4
West Midlands	10
Yorkshire and Humberside	8
Management practices:	
HRMSCORE, count of 13 human resource management practices	6.8
NINFO, number of items of information regularly given to employees regarding internal investment plans, the financial position of the workplace, and staffing plans:	
0	19
1	19
2	28
3	34
AUTOTEAM, degree of autonomy for team-working, scoring points for if any team-working, then extra points if team appoints own team-leaders, decides how work is done, has responsibility for specific products/services:	
0	24
1	5
2	28
3	37
4	5
TROTHJ2, if some of employees from largest non-managerial occupational group are formally trained to jobs other than their own	69
PCOFFJOB, percentage of experienced workers in largest non-managerial occupational group having formal off-the-job training in the previous twelve months:	
None	24
1-19%	20
20-39%	13
40-59%	9
60-79%	8
80-99%	8
100%	18
ONGOING, if on-going training is one of the main methods by which employees in the largest non-managerial occupational group are made aware of their job responsibilities	71
SELECTIV, if skills, qualifications, experience and motivation all important in recruitment	54
JOBSECUR, if policy of guaranteed job security, no compulsory redundancies	11
EMPOWER, count based on whether largest non-managerial occupational group at the workplace has a lot of variety in their work, discretion over how they do their work, and control over the pace at which they do their work:	
0	38
1	34
2	17
3	11
APPRAISE, if 80% or more of non-managerial staff are formally appraised	53
INTERPRO, if preference given to internal applicants, other things being equal, when filling vacancies	25
SAMETERM, if management has same non-pay terms and conditions as employees in the largest non-managerial occupational group	43
PROFITPY, if workplace has a profit-related pay scheme	33
PERFPAY, if workplace has performance-related pay scheme	18

CASHBO, if workplace has cash bonuses	22
ESOP, if workplace has an employee share option scheme	15
JCC, if workplace has a joint consultative committee dealing with a range of issues	20
NONUCHAN, counts up to three direct non-union communication channels, based on: regular meetings with entire workforce; team briefings involving identifiable work groups meeting at least once a month where at least some of the time is devoted to questions from employees or employees offering their views; problem-solving groups such as quality circles	1.2
REGMEET, if regular meetings with entire workforce present	42
TBRIEF3, if team briefings involving identifiable work groups meeting at least once a month where at least some of the time is devoted to questions from employees or employees offering their views	42
MANCHAIN, if systematic use of management chain or systematic cascading of information	54
SUGGEST1, if suggestion scheme	24
NEWSLET, if regular newsletter distributed to all employees	42
OTHCONS, if other ways in which management communicates or consults with employees	15
PCQCIRC, proportion of non-managerial employees involved in problem-solving groups/quality circles in last 12 months:	
None	70
1-19%	5
20-39%	7
40-79%	7
80% or more	12
TARCON, if targets set in consultation with employees:	
Yes	45
Targets set but no consultation	41
No targets set	15
STRATEGY, if workplace is covered by a formal strategic plan	74
AWARD, if workplace or organisation to which it belongs has been accredited as an Investor in People	34
GRIEVPRO, if formal procedure for dealing with individual grievances	88
FORMPROC, if formal procedure for dealing with collective disputes	50
WRITPOL, if workplace has a formal written policy on equal opportunities or managing diversity	67

Base: all workplaces with 10 or more employees with non-missing data. Data weighted by probability of selection. Note: all column percentages, except HRMScore, NONUCHAN, which are mean scores.

Appendix Table 2: Control Variables Used in Analysis of Employee Perceptions of Climate

	All
Individual-level data:	
Demographic:	
FEM, if female	49
ETHNIC, if non-white ethnic minority	4
AGE, age, in years:	
Under 20	5
20-24	8
25-29	12
30-39	28
40-49	25
50-59	18
60+	4
HEDQUAL, Highest educational qualification:	
No qualifications	26
CSE or equivalent	12
GCSE or equivalent	26
A level or equivalent	15
Degree or equivalent	16
Post-graduate	5
VOCQUAL, if any vocational qualifications	37
MEMBTU, union membership status:	
Current member	39
Ex-member	18
Never member	42
Job-related characteristics:	
OCCGRP2, occupation:	
Managers and senior administrators	9
Professional	11
Associate professional and technical	8
Clerical and secretarial	18
Craft and skilled service	10
Personal and protective service	12
Sales	9
Operative and assembly	13
Other occupations	10
TENURE, workplace tenure, in years:	
Less than one	17
One, less than two	13
Two, less than five	23
Five, less than ten	22
Ten or more	26
HOURS, usual weekly hours:	
Less than ten	5
Ten, less than twenty-nine	21
Thirty or more	74
PERM, if permanent contract	92
GROSSWAGE, gross weekly wage:	
Less than £50	7
£51-80	7
£81-140	13
£141-180	9
£181-220	11
£221-260	10
£261-310	10
£311-360	8
£361-430	10

£431-540	7
£541-680	4
£681 or more	3
Workplace-level data:	
Collective bargaining:	
CBA, collective bargaining arrangements:	
No recognised union	42
Single union	22
Multi-union, joint bargaining	20
Multi-union, separate bargaining by each union	11
Multi-union, separate bargaining by groups of unions	3
Multi-union, bargaining arrangement data missing	2
NCOV2PC7, % of workforce covered by collective bargaining:	
None	44
1-19%	3
20-39%	5
40-59%	4
60-79%	6
80-99%	13
100%	25
NCOV2PC, % workforce covered by collective bargaining, continuous	44
NRECOG3, number of recognised unions	
0	42
1	22
2	14
3	8
4 or more	14
Other union-related variables based on management data:	
UREP2, if on-site union representative	48
CLSHOP, union membership arrangements:	
No union members	31
Closed shop	1
Management strongly recommends union membership	9
Union members present but no closed shop/management endorsement	59
NDENS6, union density:	
No union members	32
1-24%	15
25-49%	17
50-74%	15
75-99%	18
100%	2
Some members, don't know how many	3
NDENSITY, union density, continuous	35
EVIEW5, how would you describe management's general attitude towards trade union membership among employees at this establishment? (Management respondent data)	
In favour	
Not in favour	38
Neutral	11
Not an issue	49
Other answer	2
	*
APHRAS07, we would rather consult directly with employees than with unions:	
Strongly agree	25
Agree	32
Neither agree nor disagree	20
Disagree	20
Strongly disagree	3
VOICE3, nature of worker voice:	

Union only	5
Dual channel	54
Non-union only	34
No voice	7
Union-related variables based on employee data:	
C4_, how would you describe management's general attitude towards trade union membership among employees at this establishment?	
In favour	18
Neutral	54
Not in favour	28
Other answer	*
PROBLEMS, unions/staff associations at this workplace take notice of members' problems and complaints:	
Employee says not applicable and employer says no union present	29
Employee DK/NA, employer says union members present	27
Strongly agree	5
Agree	24
Neither agree nor disagree	11
Disagree	3
Strongly disagree	1
Multiple response where no members present according to employer	*
SERIOUS, unions/staff associations at this workplace are taken seriously by management:	
Employee says not applicable and employer says no union present	29
Employee DK/NA, employer says union members present	27
Strongly agree	3
Agree	19
Neither agree nor disagree	14
Disagree	6
Strongly disagree	2
Multiple response where no members present according to employer	*
Workforce composition:	
PCFEM, % of workforce who are women	49
PCPTCAT, % of workforce who are part-timers:	
None	10
Under 10%	35
10%, under 25%	14
25%, under 50%	17
50%, under 75%	16
75% or more	7
PCETHNI5, % of workforce from non-white ethnic minorities:	
None	37
Under 5%	41
5-10%	10
11-19%	6
20% or more	5
PCMANFE2, % of managers who are women:	
None	22
Under 50%	46
50-99%	19
All	7
No managers at workplace	5
NOCCS, number of occupations at the workplace	5.3
NEMPSIZE, number of employees at workplace:	
10-24	13
25-49	14
50-99	15
100-199	15
200-499	20

500 or more	24
Workplace ownership:	
PUBLIC, if public sector	31
SINGLE, if single independent workplace (as opposed to part of a multi-site organisation)	22
UKFOR, UK or foreign-owned:	
UK owned	86
Foreign owned	13
50/50	1
Workplace activity, age and location:	
ASIC, standard industrial classification (single digit):	
Manufacturing	23
Electricity, gas and water	1
Construction	3
Wholesale and retail distribution	15
Hotels and restaurants	4
Transport and communication	6
Financial services	4
Other business services	8
Public administration	9
Education	10
Health	13
Other community services	3
KACTIVI, activity at the workplace:	
Produce goods or services for customers	53
Supplier of goods or services to other companies	22
Supplier of goods/services to other parts of organisation	7
Do not produce goods or services for sale in open market	14
Administrative office only	4
AGECAT2, age of establishment at current address:	
Under 3 years	8
3-20 years	41
Over 20 years	51
SSR, Standard statistical region:	
East Anglia	5
East Midlands	9
London	10
North	7
North West	10
Scotland	10
Rest of South East	19
South West	8
Wales	4
West Midlands	10
Yorkshire and Humberside	8
Management practices:	
SPECIAL, if main managerial respondent is an employee relations specialist	49
HRMSCORE, count of 13 human resource management practices	7.5
NINFO, number of items of information regularly given to employees regarding internal investment plans, the financial position of the workplace, and staffing plans:	
0	13
1	17
2	28
3	42
AUTOTEAM, degree of autonomy for team-working, scoring points for if any team-working, then extra points if team appoints own team-leaders, decides how work is done, has responsibility for specific products/services:	
0	13
1	7
2	36

3	38
4	6
TROTHJ2, if some of employees from largest non-managerial occupational group are formally trained to jobs other than their own	78
PCOFFJOB, percentage of experienced workers in largest non-managerial occupational group having formal off-the-job training in the previous twelve months:	
None	13
1-19%	19
20-39%	18
40-59%	12
60-79%	11
80-99%	12
100%	15
ONGOING, if on-going training is one of the main methods by which employees in the largest non-managerial occupational group are made aware of their job responsibilities	69
SELECTIV, if skills, qualifications, experience and motivation all important in recruitment	62
JOBSECUR, if policy of guaranteed job security, no compulsory redundancies	15
EMPOWER, count based on whether largest non-managerial occupational group at the workplace has a lot of variety in their work, discretion over how they do their work, and control over the pace at which they do their work:	
0	47
1	32
2	15
3	7
APPRAISE, if 80% or more of non-managerial staff are formally appraised	57
INTERPRO, if preference given to internal applicants, other things being equal, when filling vacancies	36
SAMETERM, if management has same non-pay terms and conditions as employees in the largest non-managerial occupational group	40
PROFITPY, if workplace has a profit-related pay scheme	39
PERFPAY, if workplace has performance-related pay scheme	27
CASHBO, if workplace has cash bonuses	26
ESOP, if workplace has an employee share option scheme	23
JCC, if workplace has a joint consultative committee dealing with a range of issues	45
NONUCHAN, counts up to three direct non-union communication channels, based on: regular meetings with entire workforce; team briefings involving identifiable work groups meeting at least once a month where at least some of the time is devoted to questions from employees or employees offering their views; problem-solving groups such as quality circles	1.4
REGMEET, if regular meetings with entire workforce present	35
TBRIEF3, if team briefings involving identifiable work groups meeting at least once a month where at least some of the time is devoted to questions from employees or employees offering their views	54
MANCHAIN, if systematic use of management chain or systematic cascading of information	70
SUGGEST1, if suggestion scheme	28
NEWSLET, if regular newsletter distributed to all employees	65
OTHCONS, if other ways in which management communicates or consults with employees	20
PCQCIRC, proportion of non-managerial employees involved in problem-solving groups/quality circles in last 12 months:	
None	52
1-19%	11
20-39%	15
40-79%	12
80% or more	11
TARCON, if targets set in consultation with employees:	
Yes	42
Targets set but no consultation	49
No targets set	9
STRATEGY, if workplace is covered by a formal strategic plan	85
AWARD, if workplace or organisation to which it belongs has been accredited as an Investor in People	35

GRIEVPRO, if formal procedure for dealing with individual grievances	96
FORMPROC, if formal procedure for dealing with collective disputes	66
WRITPOL, if workplace has a formal written policy on equal opportunities or managing diversity	81

Base: all employees with non-missing data in workplaces with 10 or more employees. Note all are column percentages, except HRMScore, NONUCHAN and NOCCS, all of which are the mean scores of count variables.

Appendix Table 3: Employer Perceptions of Climate and Union Strength

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Union measures:							
<i>Union recognition</i>	-0.242 (1.77)						
<i>On-site representation (ref.: recognised union with on-site representation)</i>							
No recognition, no on-site rep		0.174 (1.19)					
Recognition, no on-site rep		-0.169 (0.93)					
<i>Union and non-union voice (ref.: no voice)</i>							
Union voice only							-0.261 (0.99)
Union and non-union voice							-0.354 (1.61)
Non-union voice only							-0.151 (0.85)
<i>Collective bargaining arrangements (ref.: joint bargaining)</i>							
Single union						-0.044 (0.25)	
Separate bargaining, each union						0.052 (0.26)	
Separate bargaining, groups of unions						0.230 (0.75)	
Multi-union, arrangement missing						-0.085 (0.17)	
No recognition						0.215 (1.17)	
<i>Number of recognised unions (ref.: none)</i>							
One					-0.254 (1.72)		
Two					-0.106 (0.61)		
Three or more					-0.335 (1.67)		
<i>Bargaining coverage (ref.: zero)</i>							
100%				-0.239 (1.50)			
80-99%				-0.427 (2.32)*			
60-79%				-0.243 (1.21)			
40-59%				0.242 (0.86)			
20-39%				0.183 (0.84)			
1-19%				0.187 (0.61)			
<i>Union density (ref.: zero)</i>							
1-24%			-0.162 (1.02)				
25-49%			-0.470 (2.51)*				
50-74%			-0.510 (2.36)*				
75-99%			0.043 (0.24)				
100%			-0.352 (1.24)				
Members, but don't know %			-0.422 (1.58)				
Respondent characteristics:							
<i>Female</i>	-0.102 (1.02)	-0.116 (1.15)	-0.115 (1.17)	-0.118 (1.14)	-0.107 (1.07)	-0.103 (1.03)	-0.096 (0.94)
<i>ER specialist</i>	-0.550	-0.547	-0.501	-0.487	-0.547	-0.554	-0.544

	(4.17)**	(4.14)**	(3.76)**	(3.65)**	(4.16)**	(4.20)**	(4.14)**
<i>Job tenure 6+ years</i>	0.207	0.194	0.233	0.202	0.208	0.207	0.203
	(1.81)	(1.66)	(2.07)*	(1.76)	(1.81)	(1.81)	(1.76)
Workforce composition:							
<i>% female</i>	0.003	0.004	0.003	0.003	0.003	0.003	0.003
	(1.11)	(1.22)	(1.05)	(0.98)	(1.08)	(1.13)	(1.02)
<i>% part-time (ref.: none)</i>							
<i>Under 10%</i>	-0.542	-0.528	-0.558	-0.603	-0.539	-0.541	-0.520
	(3.68)**	(3.59)**	(3.79)**	(3.96)**	(3.67)**	(3.68)**	(3.53)**
<i>10, <25%</i>	-0.676	-0.686	-0.691	-0.700	-0.677	-0.676	-0.655
	(3.41)**	(3.46)**	(3.59)**	(3.37)**	(3.42)**	(3.42)**	(3.29)**
<i>25, <50%</i>	-0.326	-0.320	-0.354	-0.399	-0.328	-0.326	-0.291
	(1.69)	(1.64)	(1.85)	(2.00)*	(1.69)	(1.68)	(1.49)
<i>50, <75%</i>	-0.030	-0.051	0.016	-0.050	-0.021	-0.027	-0.051
	(0.14)	(0.24)	(0.07)	(0.23)	(0.10)	(0.13)	(0.24)
<i>75+%</i>	0.432	0.431	0.438	0.435	0.438	0.430	0.451
	(1.78)	(1.76)	(1.79)	(1.77)	(1.81)	(1.77)	(1.83)
<i>% non-white ethnic minority (ref.: none)</i>							
<i>Under 5%</i>	-0.041	-0.056	-0.033	-0.063	-0.043	-0.043	-0.064
	(0.35)	(0.47)	(0.28)	(0.52)	(0.37)	(0.36)	(0.54)
<i>5-10%</i>	-0.314	-0.341	-0.321	-0.271	-0.318	-0.318	-0.348
	(1.86)	(2.00)*	(1.94)	(1.56)	(1.88)	(1.88)	(2.03)*
<i>11-20%</i>	-0.767	-0.828	-0.806	-0.754	-0.776	-0.767	-0.854
	(3.09)**	(3.32)**	(3.15)**	(2.84)**	(3.13)**	(3.08)**	(3.42)**
<i>Over 20%</i>	-0.611	-0.690	-0.596	-0.503	-0.616	-0.610	-0.698
	(2.42)*	(2.73)**	(2.41)*	(1.95)	(2.41)*	(2.39)*	(2.75)**
Workplace characteristics:							
<i>Workplace size (ref.: 200-499 employees)</i>							
<i>10-24 employees</i>	-0.347	-0.311	-0.325	-0.346	-0.355	-0.327	-0.370
	(2.14)*	(1.92)	(1.98)*	(2.15)*	(2.18)*	(2.03)*	(2.24)*
<i>25-49 employees</i>	-0.110	-0.105	-0.100	-0.068	-0.117	-0.089	-0.137
	(0.74)	(0.70)	(0.67)	(0.46)	(0.78)	(0.60)	(0.90)
<i>50-99 employees</i>	-0.209	-0.185	-0.177	-0.149	-0.214	-0.191	-0.206
	(1.63)	(1.42)	(1.39)	(1.17)	(1.65)	(1.49)	(1.58)
<i>100-199 employees</i>	-0.149	-0.144	-0.139	-0.138	-0.158	-0.135	-0.159
	(1.22)	(1.17)	(1.14)	(1.11)	(1.29)	(1.12)	(1.28)
<i>500 or more employees</i>	0.230	0.229	0.262	0.209	0.251	0.222	0.223
	(1.92)	(1.91)	(2.13)*	(1.72)	(2.06)*	(1.83)	(1.85)
<i>Owner-managed</i>	0.300	0.278	0.279	0.340	0.297	0.300	0.285
	(1.81)	(1.68)	(1.66)	(1.98)*	(1.80)	(1.81)	(1.73)
<i>Public sector</i>	-0.044	-0.078	-0.006	-0.086	-0.065	-0.052	-0.072
	(0.24)	(0.43)	(0.03)	(0.43)	(0.36)	(0.28)	(0.41)
<i>Country of ownership (ref.: UK)</i>							
<i>Foreign-owned</i>	0.056	0.053	0.025	0.162	0.057	0.055	0.060
	(0.30)	(0.28)	(0.13)	(0.87)	(0.30)	(0.29)	(0.32)
<i>50/50 ownership</i>	1.671	1.632	1.600	1.667	1.668	1.667	1.731
	(4.73)**	(4.65)**	(4.45)**	(4.82)**	(4.70)**	(4.72)**	(4.55)**
<i>Single independent workplace</i>	0.063	0.063	0.077	0.080	0.067	0.062	0.062
	(0.45)	(0.45)	(0.56)	(0.57)	(0.48)	(0.44)	(0.45)
<i>Standard industrial classification (ref.: wholesale/retail distribution)</i>							
<i>Manufacturing</i>	0.149	0.137	0.166	0.078	0.145	0.148	0.126
	(0.72)	(0.66)	(0.79)	(0.36)	(0.70)	(0.71)	0.335
<i>Electricity, gas, water</i>	0.954	0.925	0.821	0.963	1.016	0.928	0.917
	(3.86)**	(3.69)**	(3.11)**	(3.82)**	(3.76)**	(3.51)**	(3.71)**
<i>Construction</i>	0.338	0.331	0.319	0.242	0.334	0.340	0.282
	(1.24)	(1.20)	(1.19)	(0.87)	(1.23)	(1.25)	(1.02)
<i>Hotels and restaurants</i>	0.528	0.524	0.508	0.487	0.531	0.528	0.526
	(2.36)*	(2.34)*	(2.28)*	(2.16)*	(2.38)*	(2.37)*	(2.34)*
<i>Transport and communication</i>	0.237	0.211	0.249	0.178	0.208	0.223	0.210
	(1.13)	(1.00)	(1.11)	(0.82)	(0.98)	(1.05)	(1.01)
<i>Financial services</i>	0.226	0.202	0.161	0.218	0.208	0.224	0.195
	(0.82)	(0.73)	(0.56)	(0.75)	(0.75)	(0.81)	(0.70)
<i>Other business services</i>	0.384	0.367	0.400	0.354	0.389	0.383	0.385
	(1.99)*	(1.89)	(2.07)*	(1.85)	(2.02)*	(1.99)*	(2.02)*
<i>Public administration</i>	0.522	0.528	0.497	0.512	0.529	0.511	0.520
	(1.97)*	(2.00)*	(1.92)	(1.89)	(2.02)*	(1.95)	(1.99)*
<i>Education</i>	0.891	0.793	1.036	0.745	0.922	0.890	0.794
	(3.63)**	(3.20)**	(4.30)**	(2.87)**	(3.78)**	(3.62)**	(3.24)**
<i>Health</i>	0.327	0.337	0.375	0.287	0.332	0.319	0.61
	(1.45)	(1.50)	(1.72)	(1.26)	(1.48)	(1.43)	(1.49)

Other community services	0.463 (1.82)	0.456 (1.78)	0.457 (1.80)	0.443 (1.71)	0.466 (1.83)	0.467 (1.83)	0.469 (1.82)
<i>Workplace activity (ref.: produces goods or services for customers)</i>							
Supplier to other companies	-0.008 (0.06)	-0.022 (0.16)	-0.007 (0.05)	-0.015 (0.10)	-0.006 (0.05)	-0.005 (0.04)	-0.021 (0.15)
Supplier to other parts of the organisation	0.157 (0.70)	0.167 (0.74)	0.154 (0.67)	0.161 (0.69)	0.157 (0.69)	0.158 (0.70)	0.166 (0.73)
Does not produce for open market	-0.085 (0.60)	-0.100 (0.67)	-0.113 (0.78)	-0.117 (0.80)	-0.088 (0.62)	-0.086 (0.61)	-0.112 (0.77)
Administrative office	0.235 (0.92)	0.237 (0.97)	0.228 (0.92)	0.294 (1.13)	0.236 (0.94)	0.234 (0.93)	0.236 (0.94)
<i>Age of workplace (ref.: 3-20 years)</i>							
Under 3 years	-0.287 (1.63)	-0.281 (1.60)	-0.290 (1.67)	-0.270 (1.51)	-0.277 (1.57)	-0.290 (1.65)	-0.275 (1.56)
Over 20 years	-0.245 (2.38)*	-0.271 (2.56)*	-0.261 (2.53)*	-0.242 (2.29)*	-0.247 (2.39)*	-0.247 (2.40)*	-0.270 (2.58)**
<i>Built on greenfield site in last 10 years</i>							
	-0.041 (0.17)	-0.017 (0.07)	-0.084 (0.35)	0.097 (0.43)	-0.046 (0.19)	-0.038 (0.16)	-0.024 (0.11)
<i>Standard statistical region (ref.: rest of South East)</i>							
East Anglia	0.211 (1.09)	0.207 (1.06)	0.242 (0.295)	0.309 (1.62)	0.207 (1.07)	0.211 (1.09)	0.181 (0.210)
East Midlands	0.426 (2.07)*	0.439 (2.14)*	0.474 (2.36)*	0.364 (1.79)	0.417 (2.03)*	0.425 (2.07)*	0.432 (2.13)*
London	0.534 (2.84)**	0.543 (2.89)**	0.552 (2.95)**	0.472 (2.52)*	0.527 (2.81)**	0.528 (2.80)**	0.551 (2.96)**
North	0.666 (3.68)**	0.657 (3.58)**	0.639 (3.52)**	0.674 (3.66)**	0.667 (3.67)**	0.663 (3.63)**	0.669 (3.65)**
North West	0.510 (2.80)**	0.494 (2.61)**	0.516 (2.86)**	0.427 (2.30)*	0.496 (2.73)**	0.506 (2.79)**	0.482 (2.58)**
Scotland	0.286 (1.54)	0.264 (1.41)	0.280 (1.54)	0.288 (1.53)	0.291 (1.58)	0.278 (1.50)	0.295 (1.58)
South West	0.128 (0.59)	0.116 (0.54)	0.141 (0.64)	0.065 (0.31)	0.134 (0.62)	0.126 (0.58)	0.128 (0.59)
Wales	0.729 (3.19)**	0.720 (3.03)**	0.676 (2.95)**	0.592 (2.54)*	0.730 (3.18)**	0.731 (3.19)**	0.732 (3.06)**
West Midlands	0.571 (2.75)**	0.592 (2.82)**	0.579 (2.81)**	0.524 (2.49)*	0.565 (2.72)**	0.574 (2.77)**	0.602 (2.91)**
Yorks and Humberside	0.285 (1.49)	0.224 (1.16)	(1.27) (1.50)	0.214 (1.09)	0.283 (1.48)	0.283 (1.48)	(0.93) (1.10)
Management practices:							
<i>HRM score</i>							
	0.023 (0.92)	0.017 (0.68)	0.020 (0.79)	0.022 (0.87)	0.023 (0.92)	0.023 (0.95)	0.019 (0.76)
<i>Number of direct voice channels</i>							
	-0.040 (0.71)	-0.025 (0.43)	-0.047 (0.83)	-0.057 (0.98)	-0.047 (0.82)	-0.042 (0.75)	0.000 (0.01)
<i>iIP award</i>							
	0.328 (3.20)**	0.311 (3.02)**	0.348 (3.47)**	0.344 (3.31)**	0.326 (3.17)**	0.329 (3.20)**	0.314 (3.04)**
cut1:Constant	-2.003 (6.13)**	-1.884 (5.55)**	-2.057 (6.21)**	-2.105 (6.36)**	-2.026 (6.20)**	-1.772 (4.87)**	-2.170 (6.28)**
cut2:Constant	-1.177 (3.72)**	-1.054 (3.21)**	-1.221 (3.75)**	-1.257 (3.98)**	-1.198 (3.80)**	-0.945 (2.66)**	-1.339 (4.00)**
cut3:Constant	0.566 (1.71)	0.693 (2.03)*	0.540 (1.58)	0.507 (1.54)	0.547 (1.65)	0.800 (2.17)*	0.410 (1.17)
Observations	1962	1962	1941	1890	1962	1962	1920
F	(55,1837) =5.00	(56,1790) =4.59	(60,1811) =5.26	(60,1760) =4.84	(57,1835) =4.92	(59,1833) =4.71	(57,1793) =4.42

Notes: (1) absolute value of t-statistics in parentheses (2) * is significant at 95 per cent ** is significant at 99 per cent.

Appendix Table 4: Employer Perceptions of Climate and Attitudes to Unions

	(1)	(2)	(3)
Union measures:			
<i>Managerial endorsement of union membership</i> (ref.: no union recognition)			
Recognition, no management recommendation of membership, no closed shop	-0.283 (1.93)		
Recognition, management strongly recommends membership	-0.096 (0.49)		
Recognition, closed shop	0.333 (0.65)		
<i>Management attitudes to union membership</i> (ref.: not in favour of membership)			
In favour of membership		0.317 (1.77)	
Neutral		0.094 (0.67)	
Not an issue		0.511 (1.31)	
Other answers		0.338 (1.04)	
<i>Recognised union</i>		-0.333 (2.29)*	-0.239 (1.68)
<i>Would rather consult directly with employees than with unions (ref.: neither agree nor disagree)</i>			
Strongly agree			-0.158 (1.02)
Agree			-0.025 (0.19)
Disagree			-0.205 (1.05)
Strongly disagree			0.275 (1.06)
Respondent characteristics:			
<i>Female</i>	-0.100 (1.00)	-0.108 (1.06)	-0.094 (0.93)
<i>ER specialist</i>	-0.543 (4.11)**	-0.561 (4.27)**	-0.538 (4.02)**
<i>Job tenure 6+ years</i>	0.199 (1.76)	0.201 (1.76)	0.211 (1.87)
Workforce composition:			
<i>% female</i>	0.003 (1.14)	0.003 (1.13)	0.003 (1.12)
<i>% part-time (ref.: none)</i>			
Under 10%	-0.531 (3.65)**	-0.527 (3.59)**	-0.539 (3.65)**
10, <25%	-0.653 (3.30)**	-0.650 (3.26)**	-0.672 (3.49)**
25, <50%	-0.330 (1.73)	-0.309 (1.61)	-0.336 (1.78)
50, <75%	-0.016 (0.08)	-0.015 (0.07)	-0.028 (0.13)
75+%	0.451 (1.86)	0.430 (1.78)	0.418 (1.75)
<i>% non-white ethnic minority (ref.: none)</i>			
Under 5%	-0.039 (0.33)	-0.016 (0.14)	-0.036 (0.31)
5-10%	-0.311 (1.85)	-0.253 (1.49)	-0.304 (1.81)
11-20%	-0.753 (3.05)**	-0.736 (3.00)**	-0.772 (3.12)**
Over 20%	-0.602 (2.41)*	-0.571 (2.31)*	-0.613 (2.55)*
Workplace characteristics:			
<i>Workplace size (ref.: 200-499 employees)</i>			
10-24 employees	-0.346 (2.13)*	-0.343 (2.12)*	-0.350 (2.18)*
25-49 employees	-0.105 (0.70)	-0.115 (0.77)	-0.103 (0.71)

50-99 employees	-0.204 (1.59)	-0.208 (1.62)	-0.213 (1.66)
100-199 employees	-0.152 (1.24)	-0.147 (1.19)	-0.157 (1.29)
500 or more employees	0.235 (1.94)	0.220 (1.84)	0.215 (1.78)
<i>Owner-managed</i>	0.309 (1.87)	0.302 (1.84)	0.323 (1.93)
<i>Public sector</i>	-0.041 (0.23)	-0.095 (0.51)	-0.039 (0.21)
<i>Country of ownership (ref.: UK)</i>			
Foreign-owned	0.062 (0.33)	0.074 (0.39)	0.040 (0.21)
50/50 ownership	1.684 (4.79)**	1.628 (4.49)**	1.640 (4.60)**
<i>Single independent workplace</i>	0.065 (0.46)	0.052 (0.38)	0.077 (0.56)
<i>Standard industrial classification (ref.: wholesale/retail distribution)</i>			
Manufacturing	0.134 (0.66)	0.146 (0.71)	0.173 0.336
Electricity, gas, water	0.956 (3.90)**	0.979 (3.94)**	0.932 (3.71)**
Construction	0.350 (1.28)	0.390 (1.42)	0.357 (1.31)
Hotels and restaurants	0.519 (2.33)*	0.580 (2.63)**	0.554 (2.52)*
Transport and communication	0.237 (1.12)	0.197 (0.90)	0.255 (1.18)
Financial services	0.239 (0.86)	0.217 (0.76)	0.219 (0.76)
Other business services	0.383 (1.99)*	0.442 (2.28)*	0.376 (1.94)
Public administration	0.524 (1.98)*	0.528 (2.02)*	0.523 (1.96)
Education	0.857 (3.39)**	0.890 (3.64)**	0.899 (3.57)**
Health	0.293 (1.30)	0.317 (1.42)	(0.84) (1.51)
Other community services	0.456 (1.79)	0.482 (1.91)	0.443 (1.77)
<i>Workplace activity (ref.: produces goods or services for customers)</i>			
Supplier to other companies	-0.015 (0.11)	0.028 (0.20)	-0.004 (0.03)
Supplier to other parts of the organisation	0.167 (0.73)	0.159 (0.72)	0.152 (0.68)
Does not produce for open market	-0.095 (0.67)	-0.112 (0.77)	-0.064 (0.45)
Administrative office	0.243 (0.96)	0.217 (0.85)	0.226 (0.84)
<i>Age of workplace (ref.: 3-20 years)</i>			
Under 3 years	-0.294 (1.66)	-0.293 (1.69)	-0.293 (1.68)
Over 20 years	-0.243 (2.35)*	-0.263 (2.51)*	-0.245 (2.38)*
<i>Built on greenfield site in last 10 years</i>	-0.041 (0.17)	-0.035 (0.15)	-0.033 (0.14)
<i>Standard statistical region (ref.: rest of South East)</i>			
East Anglia	0.216 (1.11)	0.236 (1.18)	0.185 (0.94)
East Midlands	0.420 (2.05)*	0.451 (2.15)*	0.407 (1.98)*
London	0.530 (2.81)**	0.535 (2.84)**	0.534 (2.87)**
North	0.671 (3.72)**	0.706 (3.85)**	0.668 (3.68)**
North West	0.516 (2.81)**	0.528 (2.88)**	0.510 (2.79)**
Scotland	0.291 (1.56)	0.300 (1.59)	0.270 (1.47)
South West	0.075 (0.36)	0.211 (1.01)	0.125 (0.58)

Wales	0.728 (3.17)**	0.763 (3.35)**	0.697 (3.08)**
West Midlands	0.572 (2.76)**	0.601 (2.85)**	0.568 (2.80)**
Yorks and Humberside	0.290 (1.51)	0.282 (1.48)	0.297 (1.57)
Management practices:			
<i>HRM score</i>	0.022 (0.90)	0.020 (0.78)	0.026 (1.06)
<i>Number of direct voice channels</i>	-0.034 (0.60)	-0.044 (0.78)	-0.037 (0.66)
<i>liP award</i>	0.341 (3.32)**	0.331 (3.08)**	0.328 (3.16)**
cut1:Constant	-1.995 (6.10)**	-1.888 (5.41)**	-2.047 (5.89)**
cut2:Constant	-1.163 (3.67)**	-1.072 (3.09)**	-1.208 (3.58)**
cut3:Constant	0.584 (1.76)	0.691 (1.94)	0.532 (1.51)
Observations	1960	1954	1961
F	(57,1833) = 4.88	(59,1825) = 4.76	(59,1832) = 4.85

Notes: (1) absolute value of t-statistics in parentheses (2) * is significant at 95 per cent ** is significant at 99 per cent.

Appendix Table 5: Employee Perceptions of Climate: Union Strength

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Union measures:							
<i>Union recognition</i>	-0.072 (1.86)						
<i>On-site representation (ref.: recognised union with on-site representation)</i>							
No recognition, no on-site rep		0.118 (2.71)**					
Recognition, no on-site rep		0.135 (2.76)**					
<i>Union density (ref.: zero)</i>							
1-24%			-0.062 (1.30)				
25-49%			-0.103 (1.76)				
50-74%			-0.073 (1.28)				
75-99%			-0.139 (2.27)*				
100%			-0.252 (1.92)				
Members, but don't know %			-0.063 (0.84)				
<i>Bargaining coverage (ref.: zero)</i>							
100%				-0.014 (0.34)			
80-99%				-0.131 (2.68)**			
60-79%				-0.083 (1.17)			
40-59%				0.009 (0.10)			
20-39%				0.001 (0.02)			
1-19%				-0.117 (1.68)			
<i>Number of recognised unions (ref.: none)</i>							
One					-0.057 (1.35)		
Two					-0.090 (1.79)		
Three or more					-0.123 (2.47)*		
<i>Collective bargaining arrangements (ref.: joint bargaining)</i>							
Single union						-0.011 (0.24)	
Separate bargaining, each union						-0.167 (3.43)**	
Separate bargaining, groups of unions						-0.044 (0.65)	
Multi-union, arrangement missing						0.033 (0.28)	
No recognition						0.042 (0.87)	
<i>Union and non-union voice (ref.: no voice)</i>							
Union voice only							-0.112 (1.13)
Union and non-union voice							-0.159 (2.11)*
Non-union voice only							-0.096 (1.35)
Demographics:							
<i>Female</i>	0.074 (2.77)**	0.079 (2.91)**	0.077 (2.84)**	0.081 (2.95)**	0.075 (2.81)**	0.075 (2.80)**	0.078 (2.87)**
<i>Age of respondent (ref.: 30-39)</i>							

Under 20 years	0.114 (1.55)	0.120 (1.64)	0.109 (1.47)	0.108 (1.43)	0.116 (1.59)	0.116 (1.58)	0.135 (1.85)
20-24 years	0.137 (2.97)**	0.142 (3.06)**	0.130 (2.81)**	0.134 (2.87)**	0.138 (3.00)**	0.135 (2.93)**	0.149 (3.22)**
25-29 years	0.052 (1.52)	0.054 (1.54)	0.047 (1.36)	0.052 (1.47)	0.054 (1.56)	0.050 (1.46)	0.045 (1.28)
40-49 years	0.022 (0.90)	0.023 (0.91)	0.020 (0.81)	0.028 (1.10)	0.023 (0.94)	0.022 (0.87)	0.025 (1.01)
50-59 years	0.088 (2.62)**	0.088 (2.61)**	0.083 (2.45)*	0.093 (2.72)**	0.089 (2.66)**	0.086 (2.54)*	0.090 (2.67)**
60+ years	0.470 (8.28)**	0.463 (8.08)**	0.465 (8.13)**	0.479 (8.28)**	0.472 (8.29)**	0.465 (8.23)**	0.464 (8.01)**
<i>Highest educational qualification (ref.: GCSE or equivalent)</i>							
No educational qualifications	0.202 (6.51)**	0.204 (6.51)**	0.206 (6.61)**	0.199 (6.27)**	0.202 (6.50)**	0.203 (6.56)**	0.205 (6.52)**
CSE or equivalent	0.136 (3.56)**	0.138 (3.62)**	0.138 (3.59)**	0.144 (3.71)**	0.136 (3.56)**	0.138 (3.64)**	0.139 (3.65)**
A level or equivalent	-0.051 (1.53)	-0.049 (1.45)	-0.049 (1.44)	-0.044 (1.30)	-0.051 (1.54)	-0.049 (1.47)	-0.043 (1.32)
Degree or equivalent	-0.062 (1.73)	-0.053 (1.44)	-0.062 (1.71)	-0.055 (1.47)	-0.065 (1.78)	-0.059 (1.64)	-0.059 (1.64)
Post-graduate degree	-0.137 (2.84)**	-0.138 (2.79)**	-0.137 (2.80)**	-0.138 (2.81)**	-0.141 (2.89)**	-0.133 (2.75)**	-0.148 (2.98)**
<i>Has vocational qualification</i>							
	-0.035 (1.62)	-0.038 (1.73)	-0.038 (1.73)	-0.042 (1.89)	-0.035 (1.62)	-0.034 (1.55)	-0.038 (1.74)
<i>Member of non-white ethnic minority</i>							
	0.139 (2.32)*	0.149 (2.48)*	0.139 (2.33)*	0.141 (2.29)*	0.138 (2.30)*	0.137 (2.28)*	0.163 (2.73)**
<i>Union membership (ref.: current member)</i>							
Ex-member	0.110 (3.46)**	0.104 (3.22)**	0.100 (3.14)**	0.107 (3.33)**	0.106 (3.29)**	0.109 (3.40)**	0.109 (3.36)**
Never member	0.249 (8.25)**	0.240 (7.80)**	0.239 (7.79)**	0.245 (7.86)**	0.245 (8.01)**	0.249 (8.20)**	0.251 (8.21)**
Job characteristics:							
<i>Occupational classification (ref.: clerical and secretarial)</i>							
Managers/senior administrators	0.258 (5.44)**	0.260 (5.44)**	0.268 (5.65)**	0.251 (5.21)**	0.256 (5.42)**	0.265 (5.60)**	0.266 (5.60)**
Professional	0.008 (0.16)	0.016 (0.33)	0.016 (0.32)	-0.008 (0.15)	0.006 (0.13)	0.012 (0.24)	0.023 (0.46)
Associate professional/technical	-0.003 (0.05)	-0.004 (0.08)	0.010 (0.20)	-0.015 (0.29)	-0.003 (0.06)	-0.005 (0.10)	0.002 (0.05)
Craft and skilled service	-0.166 (3.10)**	-0.162 (3.00)**	-0.159 (2.94)**	-0.165 (2.99)**	-0.165 (3.09)**	-0.167 (3.12)**	-0.164 (3.05)**
Personal and protective service	-0.001 (0.01)	-0.010 (0.19)	0.012 (0.24)	0.003 (0.06)	-0.002 (0.04)	0.004 (0.09)	-0.007 (0.14)
Sales	0.070 (1.10)	0.074 (1.16)	0.075 (1.18)	0.059 (0.92)	0.070 (1.10)	0.070 (1.10)	0.048 (0.82)
Operative and assembly	-0.203 (4.07)**	-0.200 (4.01)**	-0.202 (3.99)**	-0.206 (4.06)**	-0.204 (4.08)**	-0.201 (4.02)**	-0.202 (4.02)**
Other occupation	-0.167 (3.08)**	-0.163 (3.00)**	-0.161 (3.01)**	-0.162 (2.96)**	-0.168 (3.11)**	-0.157 (2.94)**	-0.159 (2.96)**
<i>Workplace tenure (ref.: 10+ years)</i>							
Less than one year	0.466 (12.19)**	0.470 (12.12)**	0.467 (12.13)**	0.467 (12.01)**	0.466 (12.21)**	0.465 (12.16)**	0.470 (12.11)**
1, <2 years	0.211 (5.27)**	0.211 (5.21)**	0.214 (5.27)**	0.209 (5.12)**	0.210 (5.26)**	0.211 (5.26)**	0.202 (5.03)**
2, <5 years	0.105 (3.64)**	0.105 (3.65)**	0.109 (3.77)**	0.117 (4.10)**	0.103 (3.61)**	0.103 (3.61)**	0.105 (3.64)**
5, <10 years	0.035 (1.15)	0.037 (1.21)	0.033 (1.07)	0.035 (1.13)	0.033 (1.10)	0.033 (1.10)	0.036 (1.18)
<i>Permanent employment contract</i>							
	0.029 (0.69)	0.019 (0.45)	0.032 (0.74)	0.026 (0.59)	0.031 (0.72)	0.030 (0.69)	0.017 (0.38)
<i>Usual weekly hours (ref.: <10)</i>							
10, <29 hours	-0.085 (1.15)	-0.069 (0.91)	-0.090 (1.22)	-0.090 (1.19)	-0.083 (1.14)	-0.086 (1.18)	-0.075 (0.98)
30+ hours	-0.165 (2.01)*	-0.145 (1.71)	-0.169 (2.04)*	-0.179 (2.11)*	-0.165 (2.02)*	-0.168 (2.05)*	-0.155 (1.82)
<i>Gross weekly wage (ref.: £141-180)</i>							
£50 or less	0.176 (2.13)*	0.182 (0.320)	0.171 (2.06)*	0.162 (1.92)	0.177 (2.14)*	0.178 (0.340)	0.182 (2.14)*

£51-80	0.061 (0.99)	0.050 (0.81)	0.060 (0.98)	0.047 (0.77)	0.061 (0.99)	0.058 (0.95)	0.062 (0.99)
£81-140	0.076 (1.64)	0.073 (1.57)	0.078 (1.66)	0.074 (1.56)	0.075 (1.62)	0.076 (1.64)	0.077 (1.65)
£181-220	0.047 (1.12)	0.042 (0.99)	0.048 (1.13)	0.043 (1.01)	0.047 (1.12)	0.051 (1.22)	0.046 (1.08)
£221-260	0.013 (0.29)	0.008 (0.17)	0.014 (0.32)	0.007 (0.16)	0.014 (0.32)	0.017 (0.39)	0.008 (0.17)
£261-310	0.074 (1.66)	0.074 (1.63)	0.079 (1.72)	0.075 (1.63)	0.078 (1.73)	0.080 (1.78)	0.077 (1.70)
£311-360	0.118 (2.18)*	0.117 (2.12)*	0.119 (2.19)*	0.133 (2.39)*	0.123 (2.27)*	0.119 (2.19)*	0.113 (2.07)*
£361-430	0.138 (2.81)**	0.147 (2.95)**	0.133 (2.69)**	0.156 (3.14)**	0.144 (2.93)**	0.139 (2.85)**	0.146 (2.93)**
£431-540	0.178 (3.04)**	0.173 (2.90)**	0.184 (3.11)**	0.183 (3.09)**	0.182 (3.12)**	0.178 (3.04)**	0.179 (3.01)**
£541-680	0.342 (5.26)**	0.342 (4.86)**	0.321 (4.95)**	0.349 (5.31)**	0.345 (5.30)**	0.345 (5.27)**	0.338 (5.23)**
£681 or more	0.487 (6.22)**	0.472 (5.97)**	0.476 (6.04)**	0.503 (6.35)**	0.493 (6.31)**	0.492 (6.29)**	0.483 (6.09)**
Workforce composition:							
<i>Number of employees at workplace (ref.: 100-199)</i>							
10-24	0.222 (3.08)**	0.194 (2.61)**	0.220 (3.09)**	0.215 (2.91)**	0.218 (3.02)**	0.218 (3.05)**	0.222 (3.05)**
25-49	0.047 (0.82)	0.012 (0.20)	0.042 (0.74)	0.056 (0.95)	0.039 (0.68)	0.040 (0.69)	0.043 (0.73)
50-99	0.111 (2.23)*	0.087 (1.72)	0.113 (2.26)*	0.127 (2.49)*	0.105 (2.12)*	0.104 (2.09)*	0.107 (2.13)*
200-499	0.020 (0.43)	0.012 (0.27)	0.015 (0.33)	0.025 (0.53)	0.015 (0.33)	0.009 (0.20)	0.020 (0.44)
500 or more	0.050 (1.20)	0.058 (1.39)	0.060 (1.44)	0.057 (1.36)	0.058 (1.42)	0.040 (0.98)	0.038 (0.91)
<i>Number of occupations</i>	-0.004 (0.36)	-0.003 (0.26)	-0.006 (0.56)	-0.008 (0.82)	-0.003 (0.25)	-0.003 (0.31)	-0.004 (0.39)
<i>% managers who are women (ref.: under 50%)</i>							
None	-0.055 (1.34)	-0.058 (1.41)	-0.045 (1.10)	-0.068 (1.66)	-0.054 (1.31)	-0.051 (1.26)	-0.055 (1.32)
50-99%	-0.002 (0.06)	0.007 (0.16)	0.005 (0.12)	-0.004 (0.10)	0.000 (0.01)	-0.002 (0.05)	-0.012 (0.28)
100%	0.054 (0.78)	0.054 (0.76)	0.066 (0.94)	0.067 (0.95)	0.058 (0.84)	0.061 (0.89)	0.054 (0.76)
No managers at workplace	0.004 (0.06)	-0.021 (0.30)	0.008 (0.12)	-0.007 (0.10)	0.007 (0.10)	0.004 (0.06)	-0.047 (0.68)
<i>% employees who are women</i>	0.002 (2.17)*	0.002 (1.82)	0.002 (2.05)*	0.002 (1.88)	0.002 (2.02)*	0.002 (2.10)*	0.002 (2.07)*
<i>% employees working part-time (ref.: under 10%)</i>							
None	-0.082 (1.49)	-0.079 (1.44)	-0.099 (1.83)	-0.055 (0.99)	-0.082 (1.50)	-0.075 (1.39)	-0.085 (1.56)
10-24%	-0.048 (0.97)	-0.043 (0.87)	-0.055 (1.12)	-0.057 (1.14)	-0.048 (0.97)	-0.034 (0.71)	-0.053 (1.06)
25-49%	0.009 (0.15)	0.005 (0.08)	0.003 (0.05)	0.012 (0.20)	0.008 (0.13)	0.012 (0.20)	-0.006 (0.11)
50-74%	0.024 (0.36)	0.019 (0.28)	0.011 (0.16)	0.018 (0.26)	0.021 (0.31)	0.032 (0.47)	0.012 (0.17)
75% or more	0.078 (0.92)	0.075 (0.88)	0.055 (0.65)	0.063 (0.73)	0.078 (0.91)	0.090 (1.06)	0.078 (0.91)
<i>% employees who are non-white (ref.: none)</i>							
Under 5%	-0.084 (2.47)*	-0.096 (2.79)**	-0.086 (2.49)*	-0.075 (2.14)*	-0.081 (2.38)*	-0.073 (2.16)*	-0.092 (2.65)**
5-10%	-0.131 (2.34)*	-0.138 (2.43)*	-0.138 (2.44)*	-0.121 (2.09)*	-0.130 (2.30)*	-0.117 (2.08)*	-0.148 (2.64)**
11-19%	-0.178 (3.22)**	-0.210 (3.67)**	-0.183 (3.31)**	-0.183 (3.28)**	-0.175 (3.18)**	-0.183 (3.31)**	-0.190 (3.42)**
20% or more	-0.217 (2.64)**	-0.246 (3.05)**	-0.213 (2.57)*	-0.172 (2.18)*	-0.210 (2.56)*	-0.214 (2.61)**	-0.249 (3.12)**
Workplace characteristics:							
<i>Public sector</i>	-0.005 (0.10)	-0.002 (0.04)	0.000 (0.00)	-0.042 (0.71)	0.008 (0.14)	-0.007 (0.13)	0.003 (0.05)

<i>Country of ownership (ref.: 100% UK)</i>							
Foreign-owned	0.042 (0.86)	0.041 (0.84)	0.047 (0.96)	0.064 (1.32)	0.047 (0.96)	0.046 (0.96)	0.031 (0.64)
50/50	0.207 (1.91)	0.208 (1.91)	0.206 (1.88)	0.226 (2.24)*	0.215 (1.97)*	0.207 (1.94)	0.217 (1.90)
<i>Single independent workplace</i>	0.012 (0.30)	0.010 (0.25)	0.006 (0.14)	0.019 (0.46)	0.015 (0.36)	0.019 (0.45)	0.011 (0.26)
<i>Standard industrial classification (ref.: manufacturing)</i>							
Electricity, gas and water	0.074 (1.07)	0.094 (1.34)	0.081 (1.13)	0.070 (0.98)	0.097 (1.38)	0.047 (0.67)	0.070 (1.00)
Construction	0.171 (2.20)*	0.157 (2.00)*	0.147 (1.85)	0.170 (2.06)*	0.171 (2.20)*	0.154 (1.99)*	0.161 (2.08)*
Wholesale and retail distribution	-0.131 (1.78)	-0.131 (1.78)	-0.142 (1.88)	-0.122 (1.68)	-0.131 (1.77)	-0.145 (1.98)*	-0.121 (1.66)
Hotels and restaurants	0.133 (1.50)	0.134 (1.51)	0.111 (1.21)	0.107 (1.24)	0.137 (1.53)	0.117 (1.32)	0.138 (1.55)
Transport and communication	-0.069 (1.06)	-0.065 (1.00)	-0.063 (0.97)	-0.080 (1.21)	-0.066 (1.02)	-0.054 (0.86)	-0.067 (1.03)
Financial services	0.058 (0.79)	0.053 (0.72)	0.051 (0.69)	0.034 (0.45)	0.054 (0.73)	0.044 (0.60)	0.067 (0.90)
Other business services	0.098 (1.48)	0.104 (1.58)	0.082 (1.19)	0.091 (1.38)	0.099 (1.48)	0.085 (1.27)	0.091 (1.39)
Public administration	0.102 (1.34)	0.114 (1.49)	0.085 (1.12)	0.083 (1.04)	0.107 (1.40)	0.126 (1.65)	0.102 (1.32)
Education	0.190 (2.30)*	0.182 (2.16)*	0.198 (2.41)*	0.204 (2.40)*	0.193 (2.34)*	0.180 (2.19)*	0.184 (2.21)*
Health	0.024 (0.29)	0.038 (0.45)	0.018 (0.22)	0.019 (0.23)	0.035 (0.42)	0.010 (0.11)	0.041 (0.49)
Other community services	0.114 (1.12)	0.107 (1.03)	0.117 (1.12)	0.117 (1.13)	0.115 (1.12)	0.093 (0.91)	0.115 (1.13)
<i>Workplace activity (ref.: produces goods/services for customers)</i>							
Supplier to other companies	-0.046 (1.07)	-0.052 (1.21)	-0.057 (1.35)	-0.053 (1.20)	-0.049 (1.15)	-0.052 (1.22)	-0.052 (1.22)
Supplier to other parts of the organisation	-0.006 (0.11)	-0.016 (0.29)	0.005 (0.09)	-0.017 (0.30)	0.000 (0.01)	0.005 (0.09)	-0.005 (0.09)
Does not produce for the open market	0.043 (1.04)	0.031 (0.71)	0.052 (1.23)	0.031 (0.73)	0.044 (1.06)	0.036 (0.86)	0.035 (0.83)
Administrative office only	0.068 (0.96)	0.064 (0.91)	0.058 (0.82)	0.057 (0.79)	0.068 (0.96)	0.068 (0.96)	0.060 (0.85)
<i>Age of workplace at current address (ref.: more than 20 yrs)</i>							
Under 3 years	-0.111 (1.60)	-0.117 (1.69)	-0.118 (1.74)	-0.110 (1.58)	-0.114 (1.64)	-0.115 (1.72)	-0.121 (1.72)
Between 3 and 20 years	0.038 (1.15)	0.029 (0.87)	0.040 (1.20)	0.041 (1.24)	0.034 (1.02)	0.034 (1.04)	0.031 (0.93)
<i>Respondent to managerial interview is an ER specialist</i>							
	-0.102 (2.91)**	-0.102 (2.89)**	-0.104 (2.93)**	-0.104 (2.92)**	-0.099 (2.82)**	-0.104 (2.92)**	-0.102 (2.88)**
<i>HRM score</i>							
	0.009 (1.03)	0.008 (0.96)	0.008 (0.90)	0.009 (0.99)	0.009 (1.06)	0.010 (1.16)	0.009 (1.04)
<i>Number of direct voice channels</i>							
	0.022 (1.32)	0.019 (1.18)	0.020 (1.19)	0.016 (0.95)	0.022 (1.35)	0.020 (1.22)	0.038 (2.02)*
<i>liP award</i>							
	0.094 (3.32)**	0.092 (3.24)**	0.110 (3.79)**	0.099 (3.50)**	0.093 (3.30)**	0.094 (3.35)**	0.089 (3.11)**
<i>Region (ref.: rest of South East)</i>							
East Anglia	0.025 (0.38)	0.008 (0.12)	0.037 (0.40)	0.015 (0.025)	0.023 (0.023)	0.047 (0.68)	0.019 (0.002)
East Midlands	0.122 (2.11)*	0.120 (2.04)*	0.134 (2.30)*	0.088 (1.48)	0.122 (2.09)*	0.145 (2.50)*	0.130 (2.20)*
London	0.112 (1.82)	0.113 (1.82)	0.120 (1.94)	0.093 (1.54)	0.113 (1.84)	0.130 (2.15)*	0.126 (2.05)*
North	0.059 (0.91)	0.051 (0.80)	0.099 (1.44)	0.050 (0.77)	0.068 (1.05)	0.066 (1.01)	0.061 (0.93)
North West	0.100 (1.84)	0.093 (1.67)	0.119 (2.18)*	0.085 (1.48)	0.105 (1.95)	0.106 (1.95)	0.105 (1.92)
Scotland	-0.022 (0.36)	-0.025 (0.41)	-0.004 (0.07)	-0.041 (0.67)	-0.016 (0.26)	-0.016 (0.27)	-0.019 (0.31)
South West	0.172 (2.75)**	0.176 (2.79)**	0.182 (2.93)**	0.151 (2.42)*	0.176 (2.81)**	0.169 (2.71)**	0.178 (2.84)**

Wales	0.172 (2.49)*	0.147 (2.10)*	0.191 (2.71)**	0.149 (2.07)*	0.177 (2.55)*	0.173 (2.52)*	0.145 (2.03)*
West Midlands	0.110 (1.90)	0.107 (1.82)	0.117 (1.98)*	0.114 (1.93)	0.112 (1.94)	0.110 (1.90)	0.122 (2.07)*
Yorkshire and Humberside	0.020 (0.33)	0.008 (0.13)	(0.57) (0.66)	(0.23) (0.41)	(0.35) (0.38)	0.027 (0.45)	(0.29) (0.03)
cut1:Constant	-1.119 (6.60)**	-1.055 (6.21)**	-1.162 (6.62)**	-1.180 (6.83)**	-1.118 (6.60)**	-1.075 (6.36)**	-1.200 (6.76)**
cut2:Constant	-0.410 (2.43)*	-0.344 (2.03)*	-0.458 (2.62)**	-0.468 (2.73)**	-0.408 (2.42)*	-0.363 (2.15)*	-0.489 (2.76)**
cut3:Constant	0.443 (2.63)**	0.509 (3.02)**	0.397 (2.28)*	0.384 (2.24)*	0.444 (2.64)**	0.490 (2.91)**	0.363 (2.06)*
cut4:Constant	1.717 (10.24)**	1.784 (10.60)**	1.667 (9.61)**	1.658 (9.72)**	1.718 (10.26)**	1.764 (10.47)**	1.641 (9.35)**
Observations	22451	21911	22147	21688	22451	22451	21954
F	98,1414 =16.37	99,1374 =15.76	103,1392 =15.81	103,1355 =16.17	100,1412 =16.18	102,1410 =16.02	100,1375 =15.76

Notes: (1) absolute value of t-statistics in parentheses (2) * is significant at 95 per cent ** is significant at 99 per cent.

Appendix Table 6: Employees' Perceptions of Climate: Managerial Support for Unions and Union Effectiveness

	(1)	(2)	(3)	(4)	(5)	(6)
Union measures:						
<i>Managerial endorsement of union membership (ref.: no union recognition)</i>						
Recognition, no management recommendation of membership, no closed shop	-0.071 (1.79)					
Recognition, management strongly recommends membership	0.071 (1.13)					
Recognition, closed shop	-0.053 (0.29)					
<i>Union recognition</i>		-0.289 (7.02)**	-0.060 (1.43)	-0.043 (1.05)	-0.072 (1.84)	-0.068 (1.69)
<i>Employee perceptions of management attitudes to union membership (ref.: neutral)</i>						
In favour		0.417 (13.14)**				
Not in favour		-0.610 (22.14)**				
Other answer		0.027 (0.18)				
<i>Union takes notice of members' problems and complaints (ref.: neither agree nor disagree)</i>						
Not applicable, no members						0.038 (0.62)
Members, but respondent not aware of them						0.057 (1.28)
Strongly agree						0.204 (3.07)**
Agree						0.129 (3.46)**
Disagree						-0.466 (7.90)**
Strongly disagree						-0.934 (7.02)**
Other answer						-0.154 (0.91)
<i>Union taken seriously by management (ref.: neither agree nor disagree)</i>						
Not applicable, no members					0.080 (1.37)	
Members, but respondent not aware of them					0.100 (2.56)*	
Strongly agree					0.643 (7.81)**	
Agree					0.348 (9.55)**	
Disagree					-0.514 (13.00)**	
Strongly disagree					-1.285 (15.77)**	
Other answer					-0.133 (0.81)	
<i>Employer would rather consult directly with employees than with unions (ref.: neither agree nor disagree)</i>						
Strongly agree				0.107 (2.20)*		
Agree				-0.017 (0.40)		
Disagree				-0.013 (0.31)		
Strongly disagree				-0.015 (0.22)		
<i>Management attitudes to union membership (ref.: neutral)</i>						
In favour of membership			0.023 (0.64)			

Not in favour			0.080 (1.50)			
Not an issue			0.377 (3.15)**			
Other answers			0.155 (1.46)			
Demographics:						
<i>Female</i>	0.072 (2.68)**	0.071 (2.48)*	0.073 (2.72)**	0.074 (2.76)**	0.052 (1.90)	0.076 (2.86)**
<i>Age of respondent (ref.: 30-39)</i>						
Under 20 years	0.114 (1.55)	0.042 (0.57)	0.111 (1.51)	0.110 (1.51)	0.075 (1.01)	0.100 (1.36)
20-24 years	0.141 (3.05)**	0.071 (1.46)	0.132 (2.86)**	0.135 (2.93)**	0.109 (2.36)*	0.133 (2.89)**
25-29 years	0.051 (1.48)	0.008 (0.21)	0.049 (1.43)	0.053 (1.55)	0.018 (0.49)	0.041 (1.18)
40-49 years	0.021 (0.83)	-0.004 (0.16)	0.023 (0.91)	0.023 (0.91)	0.022 (0.90)	0.010 (0.40)
50-59 years	0.084 (2.50)*	0.058 (1.79)	0.084 (2.51)*	0.090 (2.69)**	0.071 (2.19)*	0.078 (2.32)*
60+ years	0.468 (8.23)**	0.365 (5.69)**	0.465 (8.14)**	0.469 (8.26)**	0.442 (7.98)**	0.446 (7.72)**
<i>Highest educational qualification (ref.: GCSE or equivalent)</i>						
No educational qualifications	0.203 (6.52)**	0.199 (5.83)**	0.201 (6.48)**	0.203 (6.54)**	0.196 (6.25)**	0.202 (6.41)**
CSE or equivalent	0.135 (3.51)**	0.142 (3.46)**	0.133 (3.48)**	0.139 (3.64)**	0.141 (3.58)**	0.143 (3.75)**
A level or equivalent	-0.052 (1.54)	-0.059 (1.62)	-0.051 (1.52)	-0.051 (1.54)	-0.037 (1.10)	-0.043 (1.30)
Degree or equivalent	-0.069 (1.94)	-0.067 (1.76)	-0.063 (1.75)	-0.059 (1.63)	-0.061 (1.68)	-0.058 (1.56)
Post-graduate degree	-0.150 (3.21)**	-0.114 (2.25)*	-0.144 (3.01)**	-0.129 (2.67)**	-0.136 (2.83)**	-0.136 (2.80)**
<i>Has vocational qualification</i>	-0.035 (1.63)	-0.018 (0.78)	-0.034 (1.57)	-0.035 (1.60)	-0.025 (1.12)	-0.035 (1.61)
<i>Member of non-white ethnic minority</i>	0.138 (2.30)*	0.176 (3.03)**	0.135 (2.25)*	0.139 (2.33)*	0.144 (2.33)*	0.138 (2.27)*
<i>Union membership (ref.: current member)</i>						
Ex-member	0.117 (3.68)**	0.188 (5.70)**	0.112 (3.47)**	0.109 (3.42)**	0.134 (4.12)**	0.150 (4.60)**
Never member	0.258 (8.54)**	0.323 (10.15)**	0.247 (8.23)**	0.247 (8.07)**	0.263 (9.01)**	0.273 (9.12)**
Job characteristics:						
<i>Occupational classification (ref.: clerical and secretarial)</i>						
Managers/senior administrators	0.256 (5.43)**	0.235 (4.68)**	0.258 (5.46)**	0.258 (5.45)**	0.251 (5.24)**	0.267 (5.51)**
Professional	0.015 (0.32)	0.015 (0.30)	0.001 (0.01)	0.005 (0.10)	0.053 (1.12)	0.023 (0.47)
Associate professional/technical	-0.001 (0.02)	0.005 (0.11)	0.000 (0.00)	-0.006 (0.12)	0.004 (0.07)	0.000 (0.01)
Craft and skilled service	-0.166 (3.10)**	-0.153 (2.64)**	-0.164 (3.04)**	-0.169 (3.17)**	-0.154 (2.68)**	-0.158 (2.94)**
Personal and protective service	0.003 (0.07)	0.049 (0.93)	0.000 (0.01)	-0.005 (0.11)	0.028 (0.57)	0.009 (0.18)
Sales	0.072 (1.13)	0.045 (0.75)	0.084 (1.32)	0.071 (1.11)	0.080 (1.23)	0.088 (1.39)
Operative and assembly	-0.202 (4.04)**	-0.210 (4.05)**	-0.197 (3.94)**	-0.205 (4.13)**	-0.166 (3.22)**	-0.191 (3.83)**
Other occupation	-0.161 (2.98)**	-0.128 (2.27)*	-0.161 (2.97)**	-0.172 (3.17)**	-0.141 (2.66)**	-0.138 (2.55)*
<i>Workplace tenure (ref.: 10+ years)</i>						
Less than one year	0.460 (12.04)**	0.365 (9.08)**	0.463 (12.14)**	0.466 (12.24)**	0.429 (11.21)**	0.450 (11.68)**
1, <2 years	0.209 (5.22)**	0.150 (3.59)**	0.209 (5.21)**	0.209 (5.24)**	0.180 (4.33)**	0.197 (4.81)**
2, <5 years	0.104 (3.64)**	0.065 (2.19)*	0.103 (3.56)**	0.104 (3.64)**	0.083 (2.89)**	0.098 (3.37)**
5, <10 years	0.034 (1.12)	0.014 (0.46)	0.033 (1.11)	0.034 (1.15)	0.033 (1.10)	0.035 (1.14)
<i>Permanent employment contract</i>	0.025 (0.57)	0.017 (0.35)	0.027 (0.62)	0.030 (0.70)	0.040 (0.92)	0.038 (0.88)

<i>Usual weekly hours (ref.: <10)</i>						
10, <29 hours	-0.094 (1.29)	-0.093 (1.13)	-0.082 (1.11)	-0.083 (1.15)	-0.092 (1.21)	-0.089 (1.21)
30+ hours	-0.180 (2.23)*	-0.174 (1.88)	-0.162 (1.98)*	-0.167 (2.05)*	-0.157 (1.85)	-0.167 (2.05)*
<i>Gross weekly wage (ref.: £141-180)</i>						
£50 or less	0.165 (2.00)*	0.190 (2.278)	0.179 (0.351)	0.175 (2.13)*	0.188 (0.291)	0.171 (0.325)
£51-80	0.056 (0.91)	0.056 (0.83)	0.061 (1.00)	0.061 (1.00)	0.059 (0.95)	0.043 (0.70)
£81-140	0.074 (1.60)	0.083 (1.64)	0.078 (1.68)	0.078 (1.68)	0.071 (1.54)	0.074 (1.59)
£181-220	0.047 (1.12)	0.056 (1.28)	0.048 (1.14)	0.048 (1.15)	0.038 (0.91)	0.041 (0.96)
£221-260	0.012 (0.27)	0.018 (0.38)	0.009 (0.20)	0.016 (0.37)	0.020 (0.45)	0.015 (0.34)
£261-310	0.072 (1.61)	0.062 (1.33)	0.075 (1.65)	0.077 (1.72)	0.060 (1.33)	0.066 (1.46)
£311-360	0.117 (2.17)*	0.072 (1.30)	0.119 (2.20)*	0.120 (2.20)*	0.091 (1.67)	0.106 (1.95)
£361-430	0.143 (2.93)**	0.081 (1.63)	0.139 (2.83)**	0.144 (2.95)**	0.096 (1.93)	0.117 (2.39)*
£431-540	0.177 (3.07)**	0.152 (2.58)*	0.188 (3.23)**	0.179 (3.07)**	0.144 (2.47)*	0.168 (2.89)**
£541-680	0.350 (5.50)**	(2.19)* (4.28)**	(2.15)* (5.48)**	0.336 (5.22)**	(2.26)* (4.55)**	(2.09)* (5.06)**
£681 or more	0.506 (6.74)**	0.478 (5.81)**	0.486 (6.23)**	0.482 (6.21)**	0.439 (5.71)**	0.473 (6.03)**
Workforce composition:						
<i>Number of employees at workplace (ref.: 100-199)</i>						
10-24	0.221 (3.07)**	0.195 (2.69)**	0.224 (3.09)**	0.219 (3.04)**	0.193 (2.69)**	0.222 (3.11)**
25-49	0.041 (0.72)	0.051 (0.87)	0.030 (0.52)	0.040 (0.69)	0.030 (0.52)	0.048 (0.83)
50-99	0.103 (2.09)*	0.123 (2.50)*	0.103 (2.12)*	0.110 (2.25)*	0.104 (2.10)*	0.113 (2.24)*
200-499	0.013 (0.28)	0.019 (0.41)	0.013 (0.30)	0.016 (0.34)	0.000 (0.01)	0.017 (0.37)
500 or more	0.044 (1.07)	0.038 (0.90)	0.046 (1.12)	0.052 (1.26)	0.050 (1.20)	0.046 (1.10)
<i>Number of occupations</i>	-0.006 (0.60)	-0.003 (0.24)	-0.003 (0.29)	-0.003 (0.34)	-0.008 (0.77)	-0.004 (0.44)
<i>% managers who are women (ref.: under 50%)</i>						
None	-0.058 (1.45)	-0.050 (1.24)	-0.057 (1.40)	-0.050 (1.22)	-0.039 (0.98)	-0.053 (1.30)
50-99%	-0.007 (0.17)	-0.016 (0.39)	-0.006 (0.15)	0.001 (0.01)	-0.001 (0.01)	-0.005 (0.12)
100%	0.055 (0.81)	-0.002 (0.03)	0.050 (0.72)	0.039 (0.56)	0.049 (0.70)	0.044 (0.63)
No managers at workplace	-0.021 (0.30)	0.010 (0.14)	0.029 (0.43)	0.011 (0.16)	-0.010 (0.16)	-0.002 (0.03)
<i>% employees who are women</i>	0.002 (2.05)*	0.003 (2.81)**	0.002 (2.34)*	0.002 (2.13)*	0.002 (2.56)*	0.002 (2.41)*
<i>% employees working part-time (ref.: under 10%)</i>						
None	-0.087 (1.62)	-0.089 (1.64)	-0.089 (1.61)	-0.078 (1.42)	-0.087 (1.64)	-0.088 (1.61)
10-24%	-0.049 (0.96)	-0.089 (1.80)	-0.032 (0.64)	-0.044 (0.90)	-0.053 (1.07)	-0.049 (0.98)
25-49%	0.008 (0.13)	-0.028 (0.47)	0.023 (0.38)	0.017 (0.29)	-0.013 (0.22)	0.004 (0.07)
50-74%	0.022 (0.33)	-0.048 (0.69)	0.039 (0.58)	0.016 (0.23)	0.012 (0.17)	0.021 (0.31)
75% or more	0.075 (0.88)	-0.043 (0.46)	0.096 (1.12)	0.090 (1.07)	0.055 (0.65)	0.071 (0.83)
<i>% employees who are non-white (ref.: none)</i>						
Under 5%	-0.085 (2.51)*	-0.080 (2.28)*	-0.075 (2.20)*	-0.090 (2.63)**	-0.089 (2.56)*	-0.091 (2.66)**
5-10%	-0.120 (2.16)*	-0.132 (2.29)*	-0.119 (2.14)*	-0.137 (2.47)*	-0.141 (2.50)*	-0.144 (2.57)*

11-19%	-0.174 (3.19)**	-0.147 (2.64)**	-0.166 (2.93)**	-0.183 (3.29)**	-0.201 (3.52)**	-0.196 (3.53)**
20% or more	-0.227 (2.80)**	-0.202 (2.31)*	-0.207 (2.55)*	-0.220 (2.66)**	-0.226 (2.79)**	-0.232 (2.84)**
Workplace characteristics:						
<i>Public sector</i>	-0.017 (0.30)	-0.053 (0.94)	-0.016 (0.29)	-0.001 (0.02)	-0.041 (0.73)	-0.005 (0.08)
<i>Country of ownership (ref.: 100% UK)</i>						
Foreign-owned	0.032 (0.66)	0.031 (0.64)	0.031 (0.62)	0.044 (0.91)	0.029 (0.60)	0.035 (0.73)
50/50	0.196 (1.86)	0.175 (1.81)	0.138 (1.68)	0.247 (2.23)*	0.221 (1.94)	0.219 (2.02)*
<i>Single independent workplace</i>	0.019 (0.47)	0.023 (0.56)	-0.009 (0.21)	0.004 (0.09)	0.011 (0.27)	0.005 (0.11)
<i>Standard industrial classification (ref.: manufacturing)</i>						
Electricity, gas and water	0.067 (0.97)	0.038 (0.56)	0.079 (1.15)	0.084 (1.23)	0.085 (1.24)	0.080 (1.16)
Construction	0.170 (2.19)*	0.128 (1.65)	0.178 (2.31)*	0.180 (2.28)*	0.162 (2.01)*	0.174 (2.18)*
Wholesale and retail distribution	-0.135 (1.82)	-0.126 (1.66)	-0.149 (2.06)*	-0.117 (1.57)	-0.123 (1.60)	-0.136 (1.80)
Hotels and restaurants	0.136 (1.53)	0.056 (0.63)	0.140 (1.58)	0.158 (1.78)	0.171 (1.88)	0.149 (1.67)
Transport and communication	-0.072 (1.10)	-0.083 (1.33)	-0.072 (1.12)	-0.064 (1.00)	-0.060 (0.94)	-0.065 (1.01)
Financial services	0.055 (0.74)	0.073 (0.99)	0.050 (0.68)	0.068 (0.94)	0.090 (1.19)	0.047 (0.64)
Other business services	0.096 (1.44)	0.052 (0.78)	0.097 (1.47)	0.104 (1.58)	0.114 (1.61)	0.096 (1.39)
Public administration	0.118 (1.54)	0.060 (0.78)	0.108 (1.41)	0.118 (1.53)	0.153 (1.95)	0.100 (1.29)
Education	0.171 (2.03)*	0.081 (0.97)	0.199 (2.41)*	0.197 (2.37)*	0.189 (2.28)*	0.167 (2.01)*
Health	0.012 (0.14)	-0.032 (0.37)	0.022 (0.26)	0.045 (0.53)	0.037 (0.43)	0.023 (0.28)
Other community services	0.111 (1.08)	0.086 (0.81)	0.111 (1.06)	0.143 (1.40)	0.148 (1.41)	0.113 (1.10)
<i>Workplace activity (ref.: produces goods/services for customers)</i>						
Supplier to other companies	-0.046 (1.07)	-0.021 (0.49)	-0.037 (0.87)	-0.044 (1.04)	-0.030 (0.70)	-0.037 (0.86)
Supplier to other parts of the organisation	-0.012 (0.22)	-0.027 (0.49)	-0.004 (0.07)	-0.002 (0.03)	-0.042 (0.81)	-0.011 (0.20)
Does not produce for the open market	0.051 (1.25)	0.048 (1.09)	0.039 (0.94)	0.041 (0.98)	0.056 (1.36)	0.049 (1.18)
Administrative office only	0.065 (0.93)	0.069 (0.89)	0.063 (0.91)	0.072 (1.03)	0.056 (0.79)	0.060 (0.83)
<i>Age of workplace at current address (ref.: more than 20 yrs)</i>						
Under 3 years	-0.087 (1.26)	-0.067 (0.98)	-0.104 (1.51)	-0.110 (1.60)	-0.095 (1.41)	-0.109 (1.59)
Between 3 and 20 years	0.044 (1.37)	0.051 (1.56)	0.040 (1.22)	0.034 (1.04)	0.042 (1.31)	0.033 (1.00)
<i>Respondent to managerial interview is an ER specialist</i>						
	-0.092 (2.62)**	-0.107 (3.08)**	-0.109 (3.14)**	-0.100 (2.88)**	-0.089 (2.57)*	-0.094 (2.66)**
<i>HRM score</i>	0.009 (1.01)	0.010 (1.18)	0.008 (0.88)	0.009 (1.06)	0.013 (1.46)	0.008 (0.98)
<i>Number of direct voice channels</i>	0.020 (1.25)	0.030 (1.81)	0.020 (1.22)	0.021 (1.28)	0.019 (1.15)	0.023 (1.40)
<i>IiP award</i>	0.097 (3.47)**	0.047 (1.63)	0.091 (3.24)**	0.096 (3.41)**	0.082 (2.92)**	0.091 (3.25)**
<i>Region (ref.: rest of South East)</i>						
East Anglia	0.030 (0.46)	0.052 (0.77)	0.025 (0.38)	0.025 (0.20)	0.049 (0.75)	0.030 (0.46)
East Midlands	0.121 (2.11)*	0.093 (1.60)	0.134 (2.30)*	0.127 (2.21)*	0.103 (1.77)	0.118 (2.04)*
London	0.127 (2.09)*	0.117 (1.95)	0.111 (1.83)	0.114 (1.84)	0.149 (2.47)*	0.121 (1.98)*
North	0.063 (0.99)	0.059 (0.85)	0.064 (0.98)	0.071 (1.09)	0.064 (0.91)	0.063 (0.98)

North West	0.097 (1.79)	0.097 (1.83)	0.096 (1.75)	0.099 (1.83)	0.090 (1.69)	0.101 (1.84)
Scotland	-0.020 (0.33)	-0.051 (0.86)	-0.014 (0.23)	-0.020 (0.34)	-0.031 (0.52)	-0.026 (0.43)
South West	0.174 (2.83)**	0.146 (2.33)*	0.186 (3.02)**	0.169 (2.73)**	0.164 (2.66)**	0.159 (2.54)*
Wales	0.168 (2.46)*	0.188 (2.64)**	0.175 (2.50)*	0.168 (2.36)*	0.163 (2.35)*	0.172 (2.45)*
West Midlands	0.104 (1.78)	0.113 (1.95)	0.111 (1.93)	0.109 (1.91)	0.104 (1.74)	0.109 (1.86)
Yorkshire and Humberside	0.019 (0.32)	-0.020 (0.32)	0.027 (0.46)	(0.38) (0.33)	-0.001 (0.02)	0.009 (0.15)
cut1:Constant	-1.153 (6.74)**	-1.509 (8.55)**	-1.095 (6.44)**	-1.080 (6.26)**	-1.111 (6.33)**	-1.085 (6.23)**
cut2:Constant	-0.443 (2.60)**	-0.751 (4.27)**	-0.385 (2.28)*	-0.369 (2.15)*	-0.354 (2.03)*	-0.362 (2.10)*
cut3:Constant	0.411 (2.42)*	0.149 (0.84)	0.467 (2.77)**	0.485 (2.83)**	0.537 (3.08)**	0.501 (2.91)**
cut4:Constant	1.686 (9.97)**	1.471 (8.37)**	1.743 (10.37)**	1.759 (10.30)**	1.838 (10.55)**	1.780 (10.36)**
Observations	22419	20567	22386	22451	22323	22321
F	100,1410 = 16.62	101, 1407 = 28.67	102,1404 = 16.89	102,1410 = 16.01	105,1407 = 26.96	105,1407 = 19.76

Notes: (1) absolute value of t-statistics in parentheses (2) * is significant at 95 per cent ** is significant at 99 per cent.

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