Abstract

This paper explains why some employees who favor unionization fail to join, and why others who wish to abandon union membership continue paying dues. Our explanation is based on a model where employees incur switching (search) costs when attempting to abandon (acquire) union membership. Empirical analysis for Britain confirms one of the main predictions from the switching-cost-model that segmentation in the market for unionization persists even when mandatory membership provisions are eliminated and economy-wide density falls. The importance of these and other empirical findings for both theory and policy are discussed.

Acknowledgements

Segmentation, Switching Costs and the Demand for Unionization in Britain

Alex Bryson and Rafael Gomez

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Introduction

Introduction

Union density in Britain has fallen dramatically over the past twenty years (from nearly 60% in the early 1980s, to below 40% by the late 1990s). This period of decline coincided not only with nearly two decades of Tory party rule, but more importantly, with the repeal of mandatory membership and due payment provisions in Britain. Interestingly, though the repeal of mandatory membership seems to have precipitated (or at least coincided with) economy-wide falls in union density, changes in law do not seem to have affected union density differentials across groups of workers. That is, membership rates have continued to differ markedly across age categories (young vs. old), industries (manufacturing vs. services), sectors (public vs. private), occupations (blue collar vs. professionals) and regions (north vs. south). The question is why – if density decline was part of some general trend towards market equilibrium following the outlaw of compulsory membership provisions – did differences in the probability of being a union member between these and other segments remain so substantial? Indeed, why did the abandonment of the closed shop seemingly reduce the overall rate of unionization, but leave untouched differentials that existed prior to the legal changes described above?

We approach these questions from the perspective of consumer choice theory (Lancaster, 1966). In our case, employees choose between union and non-union forms of representation at work. Employees also face switching costs when attempting to relinquish (acquire) union membership status. In conventional product market models, switching costs can explain why consumers delay the purchase of goods with positive net benefits, and likewise, why they fail to stop purchasing technologies which may have grown obsolete (Klemperer, 1995). We argue that these same modelling techniques helps us understand why certain workers fail to join (or leave) a union, despite possessing a latent a willingness to do so. Empirically, the supply and demand framework of Farber and Krueger (1993) is employed to examine whether union density gaps across segments are due to differences in employee demand, or, to some form of switching cost. In short, the framework can explain why density differentials between groups of workers do not dissipate automatically once compulsory membership provisions are eliminated.

The data and methodology extend in four significant respects the supply-and-demand framework developed by Farber and Krueger (1993) and Riddell (1993) to analyse similar North-American differences in union density. First, we note that in the past, the supply-and-

demand framework has been applied to unionization differentials arising either between sectors (public vs. private) or across countries (Canada vs. US). Here we expand the number of segments using a rich set of socio-demographic, occupational, workplace, geographic, and attitudinal characteristics. Second, instead of assuming that all union members have an unobserved desire for unionization which is positive, we assume that some workers prefer to abandon membership, and so we estimate the degree of 'over-supply' of unionization amongst members. Third, we provide a justification for both frustrated demand and over-supply that hinges on the presence of switching costs between union and non-union jobs. The model, therefore, provides a rationale for the observed mismatch between actual and desired membership status on the part of certain employees. Finally, this is the first paper that reports levels of frustrated demand and over-supply outside of North America.

We begin our analysis by discussing the analytical and empirical frameworks employed. This is followed by a presentation of the data drawn from the 1998 British Social Attitudes (BSA) and Workplace Employee Relations (WERS) surveys. We then present our empirical section which answers five pertinent questions. First, we track the observable 'purchase' of unionisation (membership across segments over the period 1983-1998) to establish whether segmentation has risen or declined following the end of the closed shop. As part of this exercise we also measure how many worker segments exist. Second, we estimate different demand schedules for unionization in order to measure the degree of frustrated demand for unionisation within each identifiable segment. Segments with greater levels of frustrated demand are consistent with higher switching-in costs. Third, potential rates of unionisation by segment are measured, based on the extent of over-supply and frustrated demand for union voice. Fourth we identify which segments face the greatest switching-out costs by measuring the degree of union over-supply. Finally, we decompose the largest segment differentials into demand and frustrated demand components in order to determine the causes of segmentation and to identify where employees face the greatest switching costs into and out of membership.

1. Analytical Framework

1.1 Segmenting the market for unionization

It is a well known phenomenon that in market settings with heterogeneous consumers, suppliers prefer to customise and price discriminate in order to capture all potential consumer and producer surplus (Varian, 2001). The problem is that suppliers often lack sufficient information to tailor their marketing efforts on an individual basis, so they aim to discriminate amongst groups of buyers. This is done by examining whether there is one or several sub-populations (segments) of consumers and then measuring the degree of demand heterogeneity between segments. The marketing literature identifies a <u>segment</u> as a significantly distinct group of buyers within a larger market (Lambin, 1997).

If one applies the logic of segmentation to the process by which employees demand (and unions offer) membership status, a natural question is whether a similar kind of heterogeneity exists in the 'market' for membership? In other words, do (or should) unions engage in the same kind of segmentation strategies as do firms operating in heterogeneous product markets? In this paper we are primarily interested in whether the observed demand for unionization across employee segments is heterogeneous, and secondly, whether any existing segmentation is due to demand-side differences or to switching costs engendered by some form of supply-side constraint?

1.2 Identifying market segments for 'union' voice

The process of <u>market segmentation</u> begins with an analysis of the diversity of customer demand. In the marketing literature, groups of consumers are aggregated into segments in such a way that there is a maximum homogeneity of demand within segments and maximum heterogeneity between segments (Jagpal, 1999). In this study, the measures used to capture demand for unionization include (i) the actual 'purchase' of unionization (e.g. observed union membership status) and (ii) several measures of the desire for union voice (which is typically unobserved in the data but where proxies for desired membership and/or representation can be used). These measures are employed to estimate demand differentials across a spectrum of worker segments using the following five variable classifications: (i) socio-demographic

characteristics; (ii) ideological orientation; (iii) occupation/job related characteristics; (iv) workplace/industry; and (v) geographic location. [1]

In order to identify whether segments are internally homogenous, we first look at differences in union density over different time periods. Let $\overline{U}_{jt}^{c}$ be the unconditional mean of union density within segment j (e.g. gender) with c categories a and b (i.e. male, female) at time t. The observed union gap in density for workers i in segment j is:

[1]
$$\Delta U_{ijt}^{c} = \overline{U}_{ijt}^{a} - \overline{U}_{ijt}^{b}$$

A simple comparison of unconditional means allows us to identify whether demand within a given segment is significantly different from the overall average (i.e. the mean for the all-worker population) and hence characteristic of an internally homogeneous segment. [2]

In order to identify whether selected socio-demographic and workplace related segments are heterogeneous with respect to each other, we look at the joint significance of parameter estimates for union membership across segments. This is based on a standard multiple regression framework, which simultaneously controls for all segments and additional regressors capturing the extent of product market competition and managerial orientation to unions among other things.

1.3 Segmentation and the presence of switching costs

The union membership segmentation model can be specified in the following way. Adapting standard notation, let[3]

[2]
$$U_{it} = 1 \begin{cases} \text{if } y*_{it} > \boldsymbol{d}, & \textbf{Satisfied union members} \\ \text{if } \boldsymbol{d} > y*_{it} < \boldsymbol{q}^{w} & \textbf{Unsatisfied union members} \\ 0 \text{ if } \boldsymbol{d} < y*_{it} < \boldsymbol{q}^{e} & \textbf{Frustrated non-union members} \\ 0 \text{ otherwise.} \end{cases}$$

and

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[1] The paper uses only 'naturally occurring' socio-demographic segments rather than those constructed from factor or latent class analysis.

[2] Equation (1) assumes that segments are dichotomous (e.g. gender) but they can be categorical as well, in which case the differences in density are measured against some assigned reference category.

[3] See specifications found in Riddell (1993) and Booth and Arulampalam (2000).

$$y*_{it} = x_{it} \boldsymbol{b}_t + \boldsymbol{e}_{it},$$

where $y*$ denotes the 'typically' unobserved demand for union voice,[4] U is observed membership status, x is an observable vector of characteristics (including all segments j) which influence $y*$, $\boldsymbol{b}$ is the vector of coefficients and $\boldsymbol{e}$ is the unobservable error term.

Most studies assume that membership status for an individual is observed only when the demand for unionization $y*$ crosses a threshold – zero being typically the case (Booth and Arulampalam, 2000; Riddell, 1993). In equation [2], we extend the framework to include the <u>latent desire threshold</u> $\boldsymbol{d}$ and the <u>switching-search cost threshold</u>, $\boldsymbol{q}$ where superscripts w and e denote switching-out and switching-in costs respectively. By designating a dual threshold, we are acknowledging that attempting to acquire or abandon membership is not a costless exercise, and that frustrated demand and over-supply of union membership are possible outcomes. For example, positive membership status $\Pr ob(U=1)$ can co-exist with an unobserved desire to relinquish membership $y* < \boldsymbol{d}$, so long as that desire remains below the switching-out cost incurred if one tries to abandon union membership, $\boldsymbol{d} > y*_{it} < \boldsymbol{q}^w$. Similarly, a positive desire for union voice $y* > \boldsymbol{d}$ may be coincident with non-union membership status $\Pr ob(U=0)$ simply because the costs of becoming a member (i.e. the time to find a job in a unionised workplace, the hurdles imposed by an intransigent employer or even the payment of an initiation fee) are such that they prevent a worker from realizing their preferred (latent) choice, $\boldsymbol{d} < y*_{it} < \boldsymbol{q}^e$.

The coexistence of non-union or union membership in the presence of a latent desire to switch in or out of such status, is akin to the switching costs incurred by consumers in a number of product market settings (Klemperer, 1995). In our case, the switching costs can relate to the effects of institutional regimes where employees are compelled to pay dues irrespective of their desire to be card carrying union members.[5] Or, alternatively, in institutional environments where no one can be forced to pay dues (such as in Britain) the costs relate to employer resistance and to the less often mentioned effects of procrastination (Rabin, 1998), social custom (Booth, 1985) and co-worker conformity (Lazear, 1999).[6]

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[4] We say, 'typically', because until relatively recently data sets where workers were asked their preference for unionisation were unavailable.

[5] Institutional regimes such as quasi-closed shop rules prevalent in most of the US and Canada prohibit individuals from opting out of the payment of union dues and hence ensure (*de facto*) union membership for all employees in unionised workplaces (i.e. no free riding).

[6] Booth and Arulampalm (2000) also provide a list of factors which contribute to the persistence of membership in the absence of formal coercion.

Social custom and conformity impose social sanctions on individuals if they deviate from an agreed upon group norm. Procrastination, on the other hand, can forestall (almost indefinitely) a decision which is beneficial (net of costs) for an individual to take. In short, even when latent desire for unionization is above (below) the typical threshold of those who join a union, both procrastination and conformity can lead (almost indefinitely) to the persistence of non-union (union) membership status.

2. Empirical Framework: the Demand and Supply for Union Membership

The supply and demand framework of collective representation (Farber and Krueger, 1993; Riddell, 1993; Abowd and Farber, 1982) is a useful approach for analysing the sources of union membership differentials between groups – especially when unionization is not a statutory right, but has to be achieved through workplace organising. With the introduction of switching costs into the supply and demand framework, the categories into which union and non-union workers fall into, change slightly. Unionised employees in our formulation are composed of those who prefer to remain union members *plus* those who wish to switch out but do not, simply because the costs associated with abandoning membership are too high. Likewise, non-union workers include those who prefer to remain non-union *plus* those who desire unionisation, but who are unable to switch into a union job because they are either not hired by a union employer, or because they procrastinate and/or conform to the anti-union sentiments of fellow co-workers. Below we measure the proportion of British workers residing in each of these four categories.

2.1 Frustrated demand and over-supply of union voice within segments[7]

The total demand for unionization in any given segment can be defined as the fraction of workers who prefer unionization. This fraction, as stated above, includes union members who wish to remain unionised and non-union workers who desire union voice. One can also think of this as being the potential or <u>equilibrium rate</u> of unionization if latent demand for union membership were realised. Formally a probability statement for total demand $y* = \Pr ob(D = 1)$ is the following:

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[7] The following presentation borrows from Riddell (1993). See Farber (1990) for an earlier treatment.

[3] $\Pr ob(D_{ij} = 1) = \Pr ob(U_{ij} = 1) + [\Pr ob(D_{ij} = 1, U_{ij} = 0) - \Pr ob(D_{ij} = 0, U_{ij} = 1)]$

$\underbrace{}_{\begin{array}{c}\textbf{Observed}\\\textbf{Demand}\end{array}}$ $\underbrace{}_{\begin{array}{c}\textbf{Frustrated}\\\textbf{Demand}\end{array}}$ $\underbrace{}_{\textbf{Oversupply}}$

where

$$D_{ij} = 1 \begin{cases} \text{if } y^* > d > q, & \textbf{Observed demand} \\ \text{if } y^* > d < q^{\,e} & \textbf{Frustrated demand} \\ 0 \text{ if } y^* < d < q^{\,w} & \textbf{Over-supply} \\ 0 \text{ otherwise.} \end{cases}$$

D is a dichotomous measure of the demand for unionization that equals one if worker *i* in segment *j* desires union voice and is zero otherwise. Equation [3] identifies the three broad segments that make up total demand for unionization. The first are employees who 'purchase' union membership willingly. Added to this is the frustrated segment, designated as the fraction of workers who desire unionisation $y^*_{ij} > d$ but who are non-union members because of some positive cost associated with switching into union status. The third and final segment is the unsatisfied union member, designated as the fraction of workers who actually prefer to switch-out of unionization, but who remain unionised simply because the cost associated with abandoning membership, or switching-into a new form of non-union status, is too high. We will refer to these last two terms as <u>frustrated demand</u> and <u>oversupply</u> of unionization.[8]

Note that if we rearrange terms, the probability of any given worker in segment *j* being unionised can be written as:

[4] $\Pr ob(U_{ij} = 1) = \Pr ob(D_{ij} = 1) - [\Pr ob(D_{ij} = 1, U_{ij} = 0) - \Pr ob(D_{ij} = 0, U_{ij} = 1)]$.

The first term on the right-hand-side represents the potential demand for union voice, while the second is the difference between frustrated demand and over-supply of unionization.

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[8] The frustrated demand and oversupply fractions are derived from: $\Pr ob(D_{ij} = 1 | U_{ij} = 0) \cdot \Pr ob(U_{ij} = 0)$ and $\Pr ob(D_{ij} = 0 | U_{ij} = 1) \cdot \Pr ob(U_{ij} = 1)$, respectively.

2.2 Decomposing differences in observed union demand within segments

The demand and supply framework presented above is useful in evaluating competing explanations for differences in unionization rates across segments. Consider the age comparison between youth and adults. One argument for the well known finding of a lower rate of unionization amongst youth, is that young workers are less favourably disposed toward collective action, so that the demand for unionization will be lower amongst youth than adults. An alternative view is that unions have not done a good job of organizing the young, perhaps due to median voter effects, where unions have to cater to the preferences of the median worker who tends to be older. To the extent that these organizing deficits make it more difficult for young workers to acquire union voice, there will be less relative supply and more frustrated demand for union representation amongst youth than adults, even if overall demand is the same for both groups.[9]

Following Farber (1990) and Riddell (1993) we can define the relative supply of union voice within a given segment as $\Pr ob(U = 1 | D = 1)$, which measures the ease of obtaining union voice given that a worker desires unionization. The higher the probability the less support there is for a switching cost explanation of union membership differentials.

General segment differences in the probability of unionization can also be decomposed more formally as follows:

[5]
$$\Delta \Pr ob(U_j^c = 1) = \underbrace{\Delta \Pr ob(D_j^c = 1)}_{? \text{ Demand}} - \underbrace{\Delta \Pr ob(D_j^c = 1, U_j^c = 0)}_{? \text{ Frustrated Demand}}$$

where the subscript j refers to the worker segment and the superscript c refers to mutually exclusive segment categories such as those found within gender and other dichotomous segments.[10] The term in the first brackets measures the difference in demand for unionization between segments of workers, while the term in the second brackets measures differences in frustrated demand between segments.

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[9] See Blanden and Machin (2002) for more on the dynamics of youth-adult union membership.

[10] As in Farber and Krueger (1993) we have dropped the individual i in this probability statement since these probabilities actually represent segment (group) averages. In the case of non-naturally occurring dichotomies we decompose differentials against some obvious reference category.

3. Data and Measures

This paper uses data from the 1998 Workplace Employee Relations Survey (WERS) and the British Social Attitudes Survey Series (BSA) for the period 1983-1998. WERS is a linked employer-employee data set, which when weighted to account for complex survey design, provides a nationally representative sample of individuals employed in workplaces with ten or more employees.[11] Self-completion questionnaires were distributed to a random sample of 25 employees (or all employees in workplaces with 10-24) in the 1880 cases where management permitted it. Of the 44,283 questionnaires distributed, 28,237 (64%) were returned.[12] To these data we match workplace information obtained via management interviews, conducted face-to-face with the most senior employee relations manager. This was supplemented by a pre-interview questionnaire providing workforce data that in some cases involved interrogating records. Interviews were conducted in 2,191 workplaces with a response rate of 80%.

BSA yields a representative sample of adults aged 18+ living in private households.[13] The survey has been conducted annually since 1983 (with exceptions in 1988 and 1992) and achieves a response rate of 60% or more on average. Our full data set comprises almost 17,000 employees. The majority of our BSA analysis is based on the 1998 survey and is restricted to employees working at least ten hours per week. Once weighting to account for complex survey design is undertaken, results can be generalised with confidence to the population of employees in Britain working at least 10 hours per week. Most of the data are collected through face-to-face interviews, supplemented by self-completion questionnaires.

3.1 Measures of observed and desired union status

The BSA – which is one of the longest running surveys tracking unionization in Britain – identifies individual union membership status with the question: 'Are you now a member of a trade union or staff association?' WERS – along with asking a similarly worded membership status question as BSA – also asks all employees: 'Ideally, who do you think would best represent you in dealing with managers here about the following issues….getting increases in

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[11] For further information on the survey's design see Cully *et al* (1999).
[12] 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).
[13] See Jowell *et al* (1999) for details.

my pay?….if I wanted to make a complaint about working here?…if a manager wanted to discipline me?' Respondents are asked to choose between four options: 'myself', 'trade union', 'another employee', 'somebody else'. Where respondents identify the union as their preferred option in one or more cases, we say the employee desires unionization.[14] This, of course, covers but a single attribute of union demand (i.e. desired union representation) and should only be interpreted as an indirect measure of the demand for membership. Despite the fact that desired union representation and desired membership should not be conflated, the two are highly correlated, and in this paper we group them with the understanding that they are similar (though not identical) measures of the desire for unionization.

Table 1 presents data on desire for unionization in 1998 using WERS data. Column 1 of Table 1 shows that half (0.50) of all workers in establishments with 10 or more employees ideally wanted union representation on pay, grievances or disciplinary matters. If the market for union membership was in equilibrium, then membership figures would approximate preferences, such that workers would be getting what they want. In fact, the demand for unionization is 11 percentage points higher than the membership rate of 39% in WERS, indicating a sizeable level of frustrated demand for unionization in Britain. Row 2 also shows the high satisfaction with unionization among existing members (i.e. 87% still desire representation).

A different measure of desired unionization than the one found in WERS 1998 (column 2 Table 1 last row) is based on the BSA, which asks employees in workplaces without a recognised union or staff association: 'If there were a trade union at your workplace, how likely or unlikely do you think you would be to join it?' Answers range from 'very likely' to 'not at all likely'. For non-members in non-unionised workplaces 39% said they would be 'very' or 'fairly' likely to join, including 14% who said 'very likely'. At the end of a sustained period of union decline, the BSA and WERS figures demonstrate the substantial amount of frustrated demand for unionization in Britain (see Charlwood, 2001).

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[14] Where data were missing on one or more of the three items, observations were dropped from analysis.

4. Analysis

4.1 Is the market for unionization segmented?

In order to evaluate heterogeneity in the demand for union voice, we begin with the unconditional difference-in-means approach outlined in equation [1]. Table 2 illustrates the application of this formula to BSA data from 1983 to 1998.[15] It shows that across all segments, a general decline in the observed purchase of union membership occurred between 1983 and 1998. [16] However, substantial segmentation persists.

Most union density differentials ΔU_{jt}^{c} greater than .06 proved significant at the .01 level. Using this criterion, only two segments displayed a convergence in union density rates. These segments – which in the parlance of marketing theory are said to have 'disappeared' – are ethnicity and manual/non-manual workers (see Figure 1a).[17] By way of contrast, across all other segments, the observed purchase of union voice persisted and for certain segments the gap widened.[18] Figure 1b, shows the youth-adult membership differential rising form 0.12 in 1983-85 to 0.18 in 1995-1998.[19] Table 3 highlights, in descending order, the six most segmented categories in 1998 (i.e. where ΔU_{jt}^{c} ranged between 0.57 and 0.16).

In order to confirm the existence of a segmented (heterogeneous) market for union voice, segments were also entered into a multivariate model of union membership determination (available upon request). Over several specifications, gender and ethnicity both proved insignificant as independent segments, and workplace size (which had one of the largest mean differentials) displayed coefficients that were much smaller in the multivariate setting. In general, however, the conditional means are congruent with the findings found in Table 2.

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[15] We have grouped membership rates across segments using three-to-four year averages so as to smooth out year-to-year fluctuations.
[16] For useful summaries of the British over-time theory and evidence see Charlwood (2001); Metcalf (2001); Millward, Bryson and Forth (2000); Disney, Gosling, Machin and McCrae (1998) and Beaumont and Harris (1995).
[17] Both ethnicity and manual-non-manual are broad segments. More desegregated categories based on these segment classifications (as those found in WERS) actually show considerable heterogeneity across ethnic groups and occupations.
[18] The BSA figures for 1989 onwards correspond very closely to those obtained using the Labour Force Survey (Hicks, 2000) although there is small increase in membership in BSA between 1990 and 1991 which is not apparent in the LFS.
[19] A panel approach used by Disney *et al* (1998) corroborates these findings.

In summary, Tables 2 and 3 show that despite the outlawing of compulsory union membership and a 20 year decline in economy-wide union density, substantial segmentation in the market for unionisation still exists. In particular, the observed 'purchase' of unionisation was found to be segmented by age, education, earnings, tenure, part-time/fulltime status, sector (public/private), workplace union recognition, manufacturing/non-manufacturing, workplace size, region, and ideological orientation. Below we move to the determination of these differentials, as viewed from the perspective of the supply-demand framework and our switching cost approach.

4.2 Where is potential demand for unionization greatest?

Appendix Table A1 displays observed and desired unionization rates drawn from WERS for all observed segments of the population of British workers employed in establishments with 10 or more employees. The WERS segments – which conform as much as possible to the BSA segments in Table 2 – display a pattern similar to that of the 1998 BSA, but with some significant differences in segments such as gender.[20] Table A1 essentially answers most of the questions posed in our empirical framework (Section 2), beginning with the most important from a union organizing point of view: 'where is total (or potential) demand for unionization greatest?'[21]

The answer is summarised in Table 4. The table confirms that demand is highest within traditional zones of union strength such as the public sector, amongst highly experienced workers and within large establishments. Changes to the law during the early 1980s and early 1990s prohibiting mandatory membership and due payments, do not seem to have lowered switching-out costs enough so as to erode the strength of demand in these segments. This could also indicate that unions have done a good job of attracting workers into these segments (perhaps by providing the optimal level of benefits) and 'locking-them-in' once they have joined (perhaps by making the switch out of membership rather costly).

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[20] In order to be confident that our estimates can be generalised to the entire population of British workers employed in establishments with greater than 10 employees, 1998 WERS data was compared to Autumn 1997 Labour Force Survey (LFS) data (Sept 97-Nov 98). The comparison of union membership rates with LFS data was undertaken for employees in similarly-defined workplaces (11 or more employees) and they coincide with the patterns shown in the WERS98 data.

[21] Table A1 shows observed unionization rates (column 1), total demand (column 2), satisfied demand (column 3), unmet demand (column 4), relative supply (column 5), frustrated demand (column 6), and over-supply of unionization (column 7) across segments.

4.3 Where is frustrated demand for unionization greatest and why?

A key variable to compare between segments is the fraction of non-union members who desire union voice $\Pr ob(D_j^c = 1, U_j^c = 0)$, which is denoted as frustrated demand. This fraction is the product of unmet demand multiplied by the proportion of non-union workers, $\Pr ob(D_{ij} = 1 | U_{ij} = 0) \cdot \Pr ob(U_{ij} = 0)$. Figure 2 (panels a and b) demonstrates the largest within segment differentials in frustrated demand found in Table A1 column 6. The panels show that low-pay and low-tenure worker segments have the greatest levels of frustrated demand (0.23 and 0.21 respectively), as compared to their high pay/high tenure counterparts (0.04 and 0.09). The panels can be interpreted in another way as well. Switching costs out of non-union status (or into membership) are higher amongst the most disadvantaged segments of the workforce. Those in the upper tails of the distribution are able to sort themselves into or out of membership with little apparent difficulty, as evidenced by the relatively low levels of frustrated demand − $\Pr ob(D_j^c = 1, U_j^c = 0)$ − in these segments.

In Tables 5a and 5b, we split the unmet and frustrated demand components amongst individual and workplace segments with the highest levels of unmet demand, $\Pr ob(D_{ij} = 1 | U_{ij} = 0)$. Comparing the two tables, one notices that dispersion (see σ in last row) in unionization and unmet demand (columns 1 and 2) is greater across workplace segments as compared to individual segments, whereas the variance in frustrated demand (column 3) is much less than that of individual segments ($\sigma_w < \sigma_I$). The reason for this can be seen by looking across columns 1 and 2 in Tables 5a and 5b. At the workplace level, where non-union membership is high the desire for unionization is low; both are inversely related and therefore offset each other and produce roughly equal levels of frustrated demand.

Several potential explanations for this inverse relationship are plausible. First, a mixture of bandwagon effects and co-worker sanctions may be operative at the workplace level. Second, since the benefits derived from union voice rise with bargaining power, unionization can be said to display the features of a network-good with positive externalities. This also confirms that non-union members value union voice more highly where they see benefits accruing to co-workers, so that in workplaces where there is high density and

recognition, one would also predict an 'easier' (albeit lower) organizing potential for unions (Metcalf, 2001).[22]

What applications might these findings have? At the level of union organizing, the implications are somewhat equivocal. If one focuses on individual segments in Table 5a, the question is whether unions should target segments with the highest levels of frustrated demand such as youth and minorities. Big gains appear possible, but at what cost since it appears that switching out of non-union status is hard in these individual segments? Segmentation on the basis of workplace characteristics raises a similar dilemma. There appear to be sizable pockets of unmet demand, but where this demand among non-union members is still in the minority (such as in wholesale/retail trade) should a union risk costly organizing efforts if the likelihood of meeting employer and anti-union co-worker resistance is high? Perhaps, unions would be better off directing their membership activity to segments where rates are already high, and hence where the likelihood of encountering workers with high switching costs out of non-union status would be low. According to Metcalf if unions were to go down this so-called 'in-fill' route, their membership roles could potentially rise by some 2.2 million workers.

4.4 Where is the relative supply of union membership greatest?

Three columns in Table A1 are relevant when discussing the relative supply of unionization. First, column 3 shows the degree of satisfaction with union voice amongst members. Column 5 shows the probability of being unionised conditional on desiring union voice. Column 7, is the inverse of column 3, and thus can be interpreted as the extent of over-representation of unionization.

Following Farber (1990), one interpretation of relative supply, $\Pr ob(U = 1 | D = 1)$ in column 5, is that this represents the 'ease' of acquiring union voice given that a worker desires such voice. The overall ease of gaining membership is 0.69. Segments displaying a higher than average supply of union voice (or in our framework, segments displaying the lowest switching costs *into* membership) seem to be those where workers have relatively more bargaining power. These segments include (1) high pay workers; (2) professional

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[22] Although this does not offer an explanation for the inverse relationship between non-unionization and desire, the segment with the largest level of frustrated demand is wholesale and retail trade. This was one of the fastest growing industries over the past decade, implying that industry growth is perhaps an important underlying variable influencing the degree of frustrated demand for unionization across industries.

workers; (3) craft and skilled workers; (4) adult workers; and (5) workers in the public sector (where presumably labour supply is keen input in the provision of public services).

4.5 Where is the oversupply of unionization highest?

Columns 3 and 7 of Table A1 display the high levels of overall satisfaction with unionisation amongst members. There are very few segments with less than 0.75 of union members wishing to remain unionised. Table 6 column 1 displays segments with above average levels of member dissatisfaction with union voice. These can be interpreted, in our case, as segments where switching costs *out* of membership are highest. Interestingly, as can be seen if we compare column 2 in Table 6 to Tables 5a and 5b, many of the segments with high levels of frustrated demand also display high levels of over-supply. It appears that among the least powerful labour market segments, unions have not been able to keep existing members satisfied, nor have they done a good job recruiting non-members desiring union voice. These findings are indicative of a 'standardized' counter-segmentation strategy employed by unions to attract members, whereby organized labour – because of its collective and democratic traditions – is still providing a collective service which is tailored to the 'median' union voter (who is often in a more privileged labour market position), rather than to the disadvantaged 'tails' of the distribution.

4.6 Decomposing observed union membership differentials

Differentials in observed union membership status within segment categories can be decomposed using equation [5]. In Table 7 we decompose the largest union membership differentials identified in Table 2. For illustrative purposes, we show how this decomposition was conducted for the age segment, thus allowing readers to do the same for any other 'differential' of interest. In 1998 the difference in union density between adults and youths employed in workplaces with 10 or more employees (Table A1 column 1) was 28 points (= 43% - 15%).[23]

If we take our adult estimate of unmet demand at face value, then $\mathrm{Pr}\,ob(D_{age}^{25+} = 1, U_{age}^{25+} = 0) = 0.25$ (1 - 0.43) = 0.14. The corresponding figure for young workers

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[23] This differential is almost identical to the LFS gap. The LFS density rates are lower than those reported in WERS because the LFS is representative of all employees including those in establishments with less than 10 workers where the density rate is lowest.

is $\text{Pr} \, ob(D_{age}^{<25} = 1, U_{age}^{<25} = 0) = 0.26 \, (1 - 0.15) = 0.22.$ This tells us that roughly 8 points of the 28 point youth-adult gap is attributable to differences in frustrated demand, perhaps due to the difficulty unions have in organizing the young and the malleability of youth when confronted by managers and co-workers with anti-union biases. The remaining 20 points are attributable to greater adult worker demand for unionization. In other words, 29 percent of the adult-youth gap in the observed purchase of union voice is attributable to switching costs (supply-side constraints) and 71 percent is attributable to demand-side differences.

5. Conclusion

This paper borrows concepts from the theory of consumer choice in order to model segmentation and the desire for unionization. In the model, employees incur costs when attempting to switch into or out of union membership status, just as they would in certain product market settings when switching between particular brands or goods involves risk and potential loss of quality. Switching costs can explain why some employees favor unionization but fail to become members, and why some individuals continue to pay their dues even though they wish to relinquish their membership. The switching cost model also predicts that differences in union membership between segments will persist even when obligatory membership provisions are eliminated and overall density declines.

In keeping with these predictions, we find that density differentials in Britain have persisted (and in some cases widened) across most segments even as overall membership rates have fallen, with convergence only occurring in two segments (manual/non-manual and ethnicity). We also find that total demand for unionization is highest (and oversupply lowest) in segments of traditional union strength such as among high tenure and public sector workers and in certain geographical centres, suggesting that differentials across these segments are due to preferences rather than to switching costs.

In decomposing the causes for the gap between desired and actual unionization by segment, we found that frustrated demand for unionization plays an important (though not a majority) role and that 'oversupply' of unionization to members was much less apparent. For the economy as a whole, when one factors the proportion of both frustrated and oversupplied workers, the potential rate of unionization in Britain is 11 percentage points higher than is currently observed.

The results illustrate the degree to which labour markets may be under-supplying union voice to workers in Britain, not only because of employer opposition, but because of more general switching costs associated with social custom, conformity and procrastination. Though the declines in union density seen since the early 1980s may very well have been caused by shifts in employee demand, the fact that half of all current workers in Britain say that they prefer unionisation over other forms of representation, indicates that observable membership rates are 'underreporting' the extent to which workers would choose membership if they were able to organize workplaces free of the costs imposed by switching status or the social pressures encountered from co-workers and managers.

Table 1: Proportion of Workers Who Desire Union Membership in Britain

Measures	WERS 1998	BSA 1998
	[1]	[2]
All Workers		
Prob[U=1]	0.39	-
Prob[D=1]	0.50	-
Union Members		
Prob[D=1|U=1]	0.87	-
Non Members		
Prob[D=1| U=0]	0.25	0.39

Notes: D=desired unionisation; U=union status; [1] Derived variable based on the desire for union representation (see Section 3.1). [2] Based on the question "Would you join a union?"

**Table 2: Union Membership and Differentials as a Proportion
of the Workforce Across Segments**[*]

Segment	Segment Category	1983-85	1986-89	1990-94	1995-98[†]
		[1]	[2]	[3]	[4]
	All Workers	0.48	0.45	0.41	0.35
Gender	Male	0.52	0.49	0.45	0.38
	Female	0.42	0.40	0.37	0.32
	Δ	0.10	0.09	0.08	0.06***
Ethnicity	White	0.48	0.45	0.40	0.35
	Non-white	0.50	0.43	0.43	0.39
	Δ	-0.02	0.02	-0.03	-0.04
Age	Adult (age 25+)	0.50	0.48	0.43	0.37
	Youth (< 25 age)	0.38	0.34	0.27	0.19
	Δ	0.12	0.14	0.16	0.18***
Education	1.Higher education	0.48	0.49	0.50	0.43
	2.Middle education	0.44	0.43	0.37	0.30
	3.Low education	0.49	0.45	0.37	0.30
	Δ [1]-[2]	0.04	0.07	0.12	0.13***
	Δ [1]-[3]	-0.01	0.05	0.13	0.13***
Occupation	Non-manual	0.43	0.41	0.39	0.34
	Manual	0.54	0.51	0.44	0.36
	Δ	-0.11	-0.10	-0.05	-0.02
Earnings	1.Low earner	0.36	0.34	0.28	0.22
	2.Middle earner	0.57	0.52	0.49	0.39
	3.High earner	0.55	0.54	0.51	0.45
	Δ [1]-[2]	-0.21	-0.18	-0.21	-0.17***
	Δ [1]-[3]	-0.19	-0.19	-0.23	-0.23***
Tenure	Job tenure > 5	N/A	N/A	0.53	0.47
	Job tenure < 5	N/A	N/A	0.28	0.21
	Δ	N/A	N/A	0.25	0.27***
Employment Status	Part time	0.27	0.32	0.28	0.26
	Full time	0.52	0.48	0.44	0.37
	Δ	-0.25	-0.16	-0.16	-0.12***
Sector	1. Private	0.30	0.31	0.28	0.23
	2. Public	0.77	0.73	0.68	0.62
	3. Other	0.27	0.36	0.35	0.26
	Δ [1]-[2]	-0.47	-0.41	-0.40	-0.39***
	Δ [1]-[3]	0.03	-0.05	-0.07	-0.04
Industry (Private)	Non-manufacturing	0.21	0.22	0.22	0.18
	Manufacturing	0.42	0.46	0.40	0.33
	Δ	-0.21	-0.24	-0.18	-0.15***
Union Recognition	No union recognised	0.05	0.04	0.05	0.06
	Union recognition	0.72	0.72	0.69	0.63
	Δ	-0.66	-0.67	-0.64	-0.57***
Workplace Size	1. Under 10 employees	0.17	0.21	0.15	0.13
	2. 10 to 24 empl.	0.32	0.35	0.30	0.27
	3. 25 to 99 empl.	0.48	0.42	0.43	0.33
	4. 100 to 499 empl.	0.59	0.56	0.50	0.43
	5. 500 + empl.	0.69	0.68	0.61	0.51
	Δ [5]-[1]	0.52	0.47	0.46	0.38***
	Δ [5]-[2]	0.37	0.33	0.31	0.24***
	Δ [5]-[3]	0.21	0.26	0.18	0.18***
	Δ [5]-[4]	0.10	0.11	0.11	0.08**
Region	1.Scotland and Wales	0.59	0.57	0.49	0.45
	2. North and Midlands	0.54	0.50	0.46	0.38
	3. South	0.39	0.36	0.34	0.29
	Δ [1]-[2]	0.05	0.07	0.03	0.07**
	Δ [1]-[3]	0.20	0.21	0.15	0.16***
Ideological Orientation	1. Left of centre	0.53	0.53	0.48	0.44
	2. Moderate	N/A	0.49	0.43	0.37
	3. Right of centre	0.42	0.36	0.35	0.28
	Δ [1-2]	N/A	0.04	0.05	0.07
	Δ [1-3]	0.11	0.18	0.13	0.16***

*Notes: Based on samples derived from various waves of BSA 1983-1998. Samples include individuals who are not self-employed and who worked more than 10hrs on average in the week prior to the survey. † End of period (1995-98) union membership differentials significant at 0.01 at 0.05 levels denoted by *** and ** respectively.

Table 3: Largest Within-Segment Union Membership Differentials in Britain: 1995-98

Segment Category	Observed Demand $Pr(U^a=1)$ [1]	Observed Demand $Pr(U^b=1)$ [2]	Unionization Differential $\Delta U=1$ [3]
1. Recognised [a] vs. non-recognised [b]	0.63	0.06	0.57
2. Large [a] vs. small workplaces [b]	0.51	0.13	0.38
3. Long [a] vs. short tenure [b]	0.47	0.21	0.26
4. High [a] vs. low earners [b]	0.45	0.22	0.23
5. Adult [a] vs. youth [b]	0.37	0.19	0.18
6. Scotland/Wales [a] vs. South [b]	0.45	0.29	0.16

Note: Superscripts *a* and *b* denote segment categories.

Source: BSA 1995-1998. See Table 1 for underlying data.

Table 4: Segments With the Greatest Total Demand for Unionization in Britain: 1998

Segment Category	Total Demand Pr(D=1)	Observed Demand Pr(U=1)
	[1]	[2]
All Workers	0.50	0.39
1. Electricity, gas and water	0.75	0.72
2. Public Sector	0.72	0.62
3. Transport and communication	0.69	0.62
4. Large workplace (500+ emp.)	0.67	0.57
5. Operative and Assembly	0.66	0.55
6. Northern Britain	0.65	0.57
7. Health	0.60	0.48
8. Scotland	0.59	0.48
9. Wales	0.59	0.45
10. Age of establishment (20+ yr)	0.57	0.48
11. Ethnic (Non-White)	0.57	0.42
12. Middle wage earners	0.57	0.47
13. Age (40-49 yrs)	0.56	0.48
14. Job tenure (5+ yrs)	0.55	0.46

Note: See Table A1 for underlying data.

Source: WERS 1998. See Table A1 for underlying data.

Table 5a: Unmet and Frustrated Demand for Unionization in Individual Segments

Segment	Segment Category	Non-union Pr(U=0) [1]	Unmet demand Pr(D=1 | U=0) [2]	Frustrated demand Pr(D=1,U=0) [3]
	All workers	.61	.25	.15
Age	25+	.57	.25	.14
	<25	.85	.26	.22
Ethnicity	White	.61	.25	.15
	Non-white	.58	.35	.20
Occupation	Manager	.74	.11	.08
	Sales	.82	.29	.24
Pay level	Low pay (<£181pw)	.80	.28	.22
	High pay (£361pw+)	.55	.13	.07
Tenure	<2yrs	.79	.26	.21
	10+yrs	.40	.22	.09
	Standard Dev. (σ_i)	$\sigma = 0.15$	$\sigma = 0.07$	$\sigma = 0.06$

Note: Category proportions may not necessarily represent the weighted all-worker total because these are selected from the total category segments found in Table A1.Column [3]=[1]x[2].

Source: WERS 1998. See Table A1 for underlying data.

Table 5b: Unmet and Frustrated Demand for Unionization in Workplace Segments

Segment	Segment Category	Non-union Pr(U=0) [1]	Unmet demand Pr(D=1 | U=0) [2]	Frustrated demand Pr(D=1,U=0) [3]
	All workers	.61	.25	.15
Type	Non-independent	.56	.28	.16
	Independent	.80	.18	.14
Size	10-24 employees	.78	.18	.14
	500+ employees	.43	.34	.15
Sector	Private	.71	.21	.15
	Public	.38	.42	.16
Industry	Elec/Gas/Water	.28	.37	.10
	Wholesale/Retail	.83	.26	.22
Unionization	No recognition	.91	.18	.16
	Union recognition	.39	.37	.14
	Standard Dev. (σ_w)	$\sigma = 0.21$	$\sigma = 0.09$	$\sigma = 0.03$

Note: Category proportions may not necessarily represent the weighted all-worker total because these are selected from the total category segments found in Table A1. Column [3]=[1]x[2].

Source: WERS 1998. See Table A1 for underlying data.

Table 6: 'Over-Supply' of Unionization by Segment: Britain 1998

Segment Category	Over-representation Pr(D=0|U=1) [1]	Oversupply Pr(D=0, U=1) [2]
All Workers	0.13	0.05
1. Hotel and Restaurant	0.34	0.03
2. Low Pay (<£50pw)	0.34	0.03
3. High Pay (£681+pw)	0.29	0.08
4. Managers	0.24	0.06
5. Single Ind. Workplace	0.24	0.05
6. Small Workplaces	0.20	0.04
7. Youth	0.19	0.03
8. Low tenure	0.18	0.04

Note: Column 2 is calculated by the following formula from Table A1: Column [7] multiplied by [1 –[1]].

Source: WERS 1998. See Table A1 for underlying data.

Table 7: Decomposing Largest Union Membership Differentials in Britain: 1998

Segment Category	Unionisation Differential	Total Demand Component	Frustrated Demand Component
	$\Delta U=1$	$Pr(D=1)$	$Pr(D=1,U=0)$
Electricity/Gas/Water vs. Wholesale Retail	0.55	0.43	0.12
	(100)	(81)	(19)
Recognised vs. non-recognised	0.52	0.50	0.02
	(100)	(96)	(4)
Long vs. short tenure	0.39	0.27	0.12
	(100)	(69)	(21)
Large vs. small workplaces	0.35	0.36	-0.01
	(100)	(100)	(0)
Adult vs. youth	0.28	0.20	0.08
	(100)	(71)	(29)
High vs. low earners	0.25	0.10	0.15
	(100)	(40)	(60)
Scotland/Wales vs. South East*	0.22	0.21	0.01
	(100)	(95)	(5)

Note: Representative of all workplaces with 10+ employees. Proportion of total differential in ( ). * Not including London.

Source: WERS 1998. See Table A1 for underlying data.

Figure 1: Examples of Convergence and Divergence in Unionization Across Segments

a. Manual vs. Non-manual
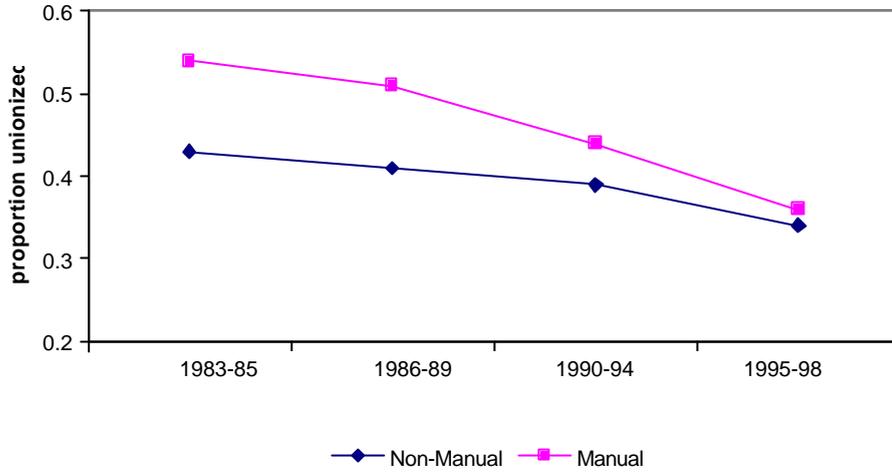
b. Youth vs. Adult
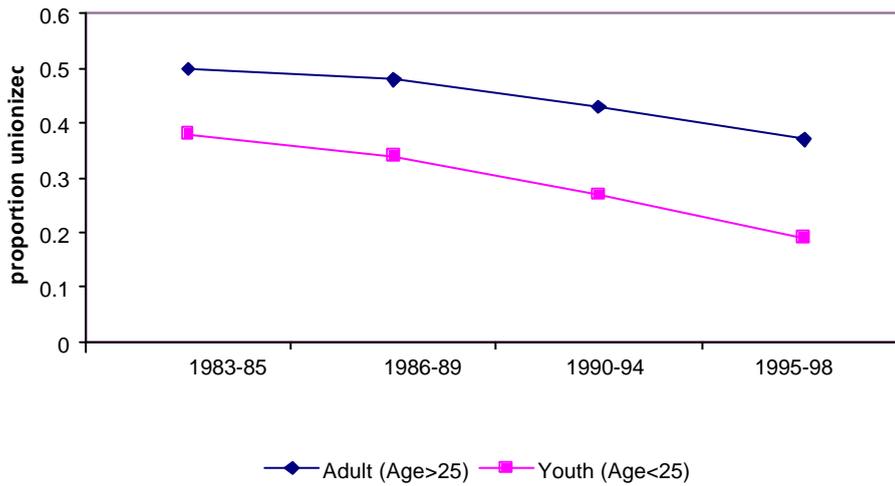
Notes: See Table 2 for underlying data.

Figure 2: Largest Differentials in Frustrated Demand Across Segments

Figure 2a: Frustrated Demand by Segment (Income)

Income Segments (Weekly Earnings)

Figure 2b: Frustrated Demand by Segment (Tenure)

Segmentation by Tenure (yrs)

Notes: See Table A1 column 6 for underlying data.

Table A1: Relative Supply and Frustrated Demand for Unionization in Britain 1998

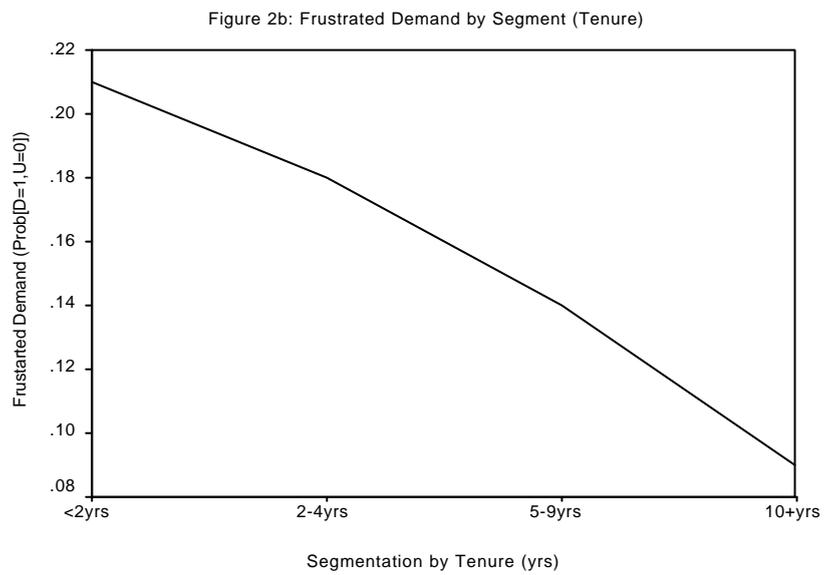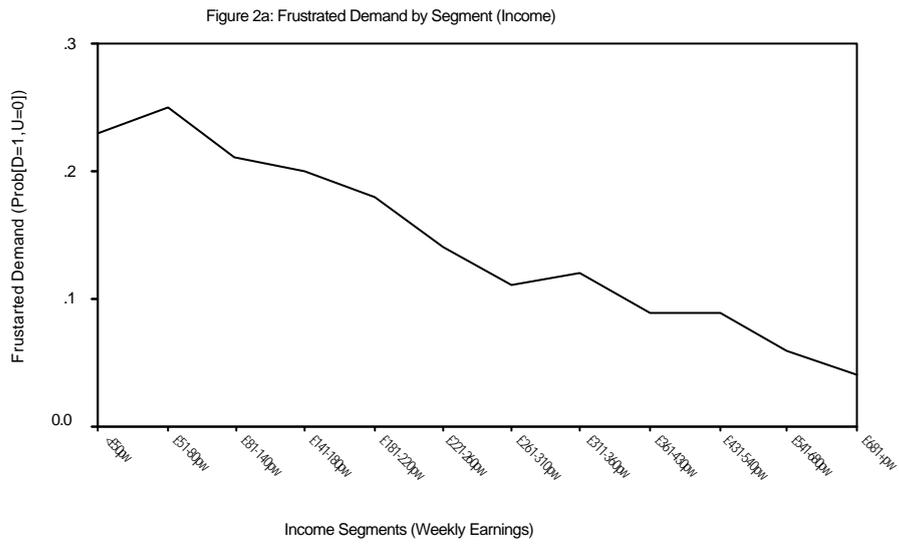|	U=1	D=1	D=1 | U=1	D=1 | U=0	U=1| D=1	D=1,U=0	D=0 | U=1
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
All workers	0.39	0.50	0.87	0.25	0.69	0.15	0.13
1. Socio-Demographic							
Male	0.45	0.53	0.89	0.23	0.76	0.13	0.11
Female	0.33	0.46	0.85	0.27	0.62	0.18	0.15
White	0.39	0.49	0.87	0.25	0.70	0.15	0.13
Non-White/Ethnic	0.42	0.57	0.90	0.35	0.64	0.20	0.10
Age <25	0.15	0.34	0.81	0.26	0.35	0.22	0.19
Age 25-29	0.33	0.45	0.87	0.25	0.63	0.17	0.13
Age 30-39	0.43	0.53	0.88	0.26	0.72	0.15	0.12
Age 40-49	0.48	0.56	0.88	0.25	0.77	0.13	0.12
Age 50-59	0.43	0.52	0.87	0.24	0.75	0.14	0.13
6.00 60+	0.33	0.44	0.88	0.22	0.67	0.15	0.12
Age 25+	0.43	0.52	0.88	0.25	0.73	0.14	0.12
Age < 25	0.15	0.34	0.81	0.26	0.35	0.22	0.19
No education	0.42	0.52	0.90	0.24	0.74	0.14	0.10
Middle education	0.35	0.49	0.88	0.27	0.64	0.18	0.12
High education	0.41	0.47	0.83	0.23	0.72	0.14	0.17
2. Occupational & Job Related							
Managers & sen．admin.	0.26	0.28	0.76	0.11	0.70	0.08	0.24
Professionals	0.51	0.54	0.84	0.24	0.78	0.12	0.16
Associate prof and tech	0.52	0.57	0.86	0.25	0.79	0.12	0.14
Clerical and secretarial	0.31	0.45	0.88	0.26	0.61	0.18	0.12
Craft and skilled service	0.50	0.57	0.91	0.23	0.80	0.12	0.09
Personal and protect ive service	0.36	0.49	0.87	0.27	0.65	0.17	0.13
Sales	0.18	0.38	0.80	0.29	0.37	0.24	0.10
Operative and assembly	0.55	0.66	0.92	0.32	0.79	0.14	0.08
Other occupations	0.33	0.49	0.89	0.29	0.61	0.19	0.11
< £50 pw	0.10	0.30	0.66	0.26	0.23	0.23	0.34
£51-80 pw	0.18	0.39	0.82	0.30	0.37	0.25	0.18
£81-140 pw	0.26	0.43	0.86	0.28	0.53	0.21	0.14
£141-180 pw	0.32	0.49	0.88	0.30	0.59	0.20	0.12
£181-220 pw	0.43	0.57	0.91	0.31	0.69	0.18	0.09
£221-260 pw	0.45	0.55	0.91	0.26	0.74	0.14	0.09
£261-310 pw	0.51	0.56	0.88	0.23	0.80	0.11	0.12
£311-360 pw	0.54	0.60	0.89	0.26	0.80	0.12	0.11
£361-430 pw	0.60	0.63	0.91	0.22	0.86	0.09	0.09
£431-540 pw	0.51	0.52	0.83	0.19	0.83	0.09	0.17
£541-680 pw	0.45	0.44	0.83	0.11	0.86	0.06	0.17
£681+ pw	0.29	0.25	0.71	0.06	0.83	0.04	0.29
Pay low	0.20	0.39	0.82	0.28	0.43	0.22	0.18
Pay mid	0.47	0.57	0.90	0.27	0.75	0.14	0.10
Pay high	0.45	0.44	0.81	0.13	0.83	0.07	0.19
WP tenure <2 yrs	0.21	0.38	0.82	0.26	0.47	0.21	0.18
WP tenure 2 <5	0.33	0.47	0.86	0.27	0.62	0.18	0.14
WP tenure 5 <10	0.44	0.53	0.88	0.25	0.73	0.14	0.12
WP tenure 10+	0.60	0.63	0.90	0.22	0.86	0.09	0.10
WP tenure > 5 yrs	0.46	0.55	0.88	0.25	0.76	0.14	0.12
WP tenure <5yrs	0.21	0.38	0.82	0.26	0.47	0.21	0.18
[cont'd]	U=1	D=1	D=1 | U=1	D=1 | U=0	U=1| D=1	D=1,U=0	D=0 | U=1
< 10 hrs	0.16	0.37	0.81	0.28	0.36	0.24	0.19
10-29 hrs	0.27	0.44	0.84	0.29	0.52	0.21	0.16
30-39 hrs	0.49	0.59	0.90	0.30	0.74	0.15	0.10

40-47 hrs	0.41	0.48	0.88	0.21	0.75	0.12	0.12
> 48 hrs	0.42	0.47	0.85	0.19	0.77	0.11	0.15
Part time	0.38	0.52	0.88	0.29	0.65	0.18	0.12
Full time	0.41	0.48	0.87	0.20	0.75	0.12	0.13
3. Workplace and Industry							
Non-independent workplace	0.44	0.55	0.89	0.28	0.72	0.16	0.11
Single-ind workplace	0.20	0.30	0.76	0.18	0.53	0.14	0.24
10 - 24 employees	0.22	0.32	0.80	0.18	0.57	0.14	0.20
25 - 49 employees	0.23	0.35	0.82	0.21	0.54	0.16	0.18
50 - 99 employees	0.30	0.42	0.87	0.22	0.63	0.15	0.13
100 - 199 employees	0.39	0.49	0.87	0.25	0.69	0.15	0.13
200 - 499 employees	0.47	0.58	0.88	0.32	0.71	0.17	0.12
500 >	0.57	0.67	0.91	0.34	0.79	0.15	0.09
Private sector	0.29	0.40	0.86	0.21	0.62	0.15	0.14
Public sector	0.62	0.72	0.89	0.42	0.78	0.16	0.11
No union present	0.09	0.22	0.65	0.18	0.26	0.16	0.35
Union present	0.61	0.69	0.90	0.37	0.79	0.14	0.10
Age of Establishment							
< 3 yrs	0.28	0.39	0.87	0.21	0.61	0.15	0.13
3 - 4 yrs	0.34	0.48	0.88	0.27	0.64	0.18	0.12
5 - 9 yrs	0.24	0.38	0.84	0.24	0.52	0.18	0.16
10 - 20 yrs	0.31	0.43	0.85	0.24	0.62	0.17	0.15
> 20yrs	0.48	0.57	0.88	0.27	0.76	0.14	0.12
Industry							
Manufacturing	0.45	0.52	0.90	0.21	0.78	0.12	0.10
Electricity, gas and water	0.72	0.75	0.89	0.37	0.86	0.10	0.11
Construction	0.34	0.41	0.84	0.19	0.70	0.13	0.16
Wholesale and retail	0.17	0.35	0.81	0.26	0.39	0.22	0.19
Hotels and restaurants	0.10	0.24	0.66	0.19	0.28	0.17	0.34
Transport and communication	0.62	0.69	0.93	0.29	0.84	0.11	0.07
Financial services	0.40	0.50	0.84	0.27	0.67	0.16	0.16
Other business services	0.11	0.22	0.81	0.15	0.40	0.13	0.19
Public administration	0.67	0.75	0.88	0.49	0.79	0.16	0.12
Education	0.45	0.54	0.84	0.28	0.72	0.15	0.16
Health	0.48	0.60	0.88	0.34	0.72	0.18	0.12
Other comm. services	0.28	0.42	0.85	0.24	0.58	0.17	0.15
4. Geographical Segments							
East Anglia	0.32	0.46	0.84	0.27	0.61	0.18	0.16
East Midlands	0.36	0.46	0.87	0.23	0.69	0.15	0.13
London	0.35	0.45	0.85	0.23	0.67	0.15	0.15
North	0.57	0.65	0.90	0.32	0.79	0.14	0.10
North West	0.47	0.56	0.87	0.27	0.74	0.14	0.13
Scotland	0.48	0.59	0.90	0.29	0.75	0.15	0.10
Rest of the South East	0.26	0.38	0.83	0.22	0.58	0.16	0.17
South West	0.37	0.49	0.88	0.26	0.67	0.16	0.12
Wales	0.45	0.59	0.87	0.35	0.68	0.19	0.13
West Midlands	0.43	0.52	0.87	0.25	0.72	0.14	0.13
Yorkshire & Humberside	0.38	0.49	0.90	0.24	0.70	0.15	0.10

Note: See text for formulas. Based on samples derived from WERS 1998. Samples are representative of individuals employed in workplaces with 10+ employees in Britain.

Table: Union Membership Models Conditional on All Segments and Other Controls

	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
			Dependent variable: Union Membership Status				
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[Male]							
Female	0.49	-0.02 (-1.02)	-0.1 (−0.62)	-0.02 (−1.08)	-0.02 (−1.19)	-0.13 (−0.91)	-0.02 (−1.03)
[Age <25]							
Age 25-29	0.13	0.05 (2.38)	0.07 (2.54)	0.05 (2.28)	0.06 (2.55)	0.06 (2.37)	0.05 (2.34)
Age 30-39	0.27	0.09 (4.06)	0.11 (4.30)	0.09 (4.13)	0.10 (4.44)	0.10 (4.35)	0.09 (4.08)
Age 40-49	0.25	0.10 (4.52)	0.12 (4.48)	0.10 (4.40)	0.11 (4.73)	0.11 (4.75)	0.11 (4.54)
Age 50-59	0.18	0.06 (2.52)	0.06 (2.07)	0.06 (2.46)	0.07 (2.92)	0.07 (2.88)	0.06 (2.51)
Age 60+	0.04	0.01 (0.17)	0.00 (−0.05)	0.01 (0.20)	0.02 (0.57)	0.02 (0.60)	0.01 (0.21)
[Low education]							
Middle education	0.41	-0.04 (−3.18)	-0.06 (−3.51)	-0.04 (−3.17)	-0.05 (−3.24)	-0.04 (−2.99)	-0.04 (−3.14)
High education	0.21	-0.03 (−1.37)	-0.05 (−1.78)	-0.03 (−1.30)	-0.03 (−1.40)	-0.03 (−1.14)	-0.03 (−1.36)
[White]							
Ethnic	0.40	0.03 (1.14)	0.05 (1.67)	0.04 (1.26)	0.03 (1.13)	0.04 (1.18)	0.03 (1.00)
Manager	0.09	-0.43 (−11.87)	-0.48 (−12.14)	-0.43 (−11.92)	-0.43 (−11.21)	-0.43 (−11.96)	-0.43 (−11.87)
Prof.	0.11	-0.21 (−6.08)	-0.23 (−5.98)	-0.21 (−6.04)	-0.21 (−5.82)	-0.21 (−6.00)	-0.21 (−6.12)
Asst. Prof.	0.08	-0.21 (−6.55)	-0.23 (−6.33)	-0.21 (−6.43)	-0.20 (−6.12)	-0.21 (−6.53)	-0.21 (−6.60)
Clerical	0.18	-0.34 (−11.23)	-0.37 (−11.07)	-0.34 (−11.25)	-0.33 (−10.79)	-0.34 (−11.44)	-0.34 (−11.20)
Craft	0.10	-0.07 (−2.65)	-0.07 (−2.44)	-0.07 (−2.70)	-0.06 (−2.53)	-0.06 (−2.53)	-0.07 (−2.67)
Personal	0.12	-0.23 (−6.52)	-0.24 (−6.16)	-0.23 (−6.58)	-0.23 (−6.54)	-0.23 (−6.35)	-0.23 (−6.55)
Sales	0.09	-0.14 (−4.12)	-0.15 (−4.19)	-0.13 (−4.07)	-0.14 (−4.12)	-0.14 (−4.17)	-0.14 (−4.14)
[Operative]							
Other Occup.	0.10	-0.14 (−5.38)	-0.15 (−4.89)	-0.14 (−5.13)	-0.14 (−5.43)	-0.14 (−5.32)	-0.14 (−5.38)
[WP ten. < 2]							
WP ten. 2-4	0.23	0.07 (4.64)	0.07 (4.13)	0.07 (4.80)	0.06 (4.31)	0.07 (4.76)	0.07 (4.67)
WP ten. 5-9	0.22	0.14 (8.63)	0.15 (7.90)	0.14 (8.59)	0.14 (8.36)	0.15 (8.76)	0.14 (8.63)
WP ten. > 10	0.26	0.24 (14.06)	0.26 (13.66)	0.24 (14.12)	0.24 (13.65)	0.24 (14.12)	0.24 (14.05)
Hrs. < 10	0.05	-0.01 (−0.12)	0.01 (0.08)	-0.01 (−0.21)	0.00 (−0.02)	0.00 (0.05)	-0.01 (−0.11)
Hrs. 10-29	0.22	0.03 (1.51)	0.02 (0.88)	0.03 (1.31)	0.03 (1.44)	0.03 (1.32)	0.04 (1.59)
[Hrs. 30-39]							
Hrs. 40-47	0.27	-0.06 (−3.64)	-0.06 (−3.53)	-0.05 (−3.39)	-0.05 (−3.29)	-0.06 (−3.57)	-0.06 (−3.69)
Hrs. > 47	0.15	-0.03 (−1.34)	-0.04 (−1.31)	-0.03 (−1.27)	-0.03 (−1.35)	-0.03 (−1.10)	-0.03 (−1.33)
GW < 50	0.08	-0.36 (−7.72)	-0.34 (−6.90)	-0.36 (−7.99)	-0.35 (−7.37)	-0.34 (−7.43)	-0.36 (−7.72)
GW 51-80	0.07	-0.23 (−5.81)	-0.22 (−5.08)	-0.23 (−5.79)	-0.22 (−5.62)	-0.23 (−5.69)	-0.23 (−5.86)
GW 81-140	0.13	-0.15 (−6.93)	-0.15 (−6.08)	-0.15 (−6.94)	-0.14 (−6.45)	-0.15 (−6.82)	-0.15 (−7.20)
[GW 140-220]							
GW 221-260	0.10	0.05 (2.63)	0.06 (2.77)	0.05 (2.63)	0.05 (2.47)	0.04 (2.37)	0.05 (2.58)
GW 261-310	0.10	0.11 (5.50)	0.12 (5.25)	0.12 (5.58)	0.11 (5.41)	0.10 (5.11)	0.11 (5.42)
GW 311-360	0.08	0.15 (5.90)	0.15 (5.68)	0.15 (5.99)	0.15 (5.86)	0.14 (5.45)	0.15 (5.76)
GW 361-430	0.10	0.20 (6.60)	0.21 (6.08)	0.20 (6.83)	0.19 (6.80)	0.19 (6.50)	0.20 (7.00)
GW 431-540	0.07	0.16 (5.07)	0.16 (4.83)	0.16 (5.11)	0.15 (5.00)	0.14 (4.62)	0.15 (5.05)
GW 541-680	0.04	0.19 (5.04)	0.19 (4.51)	0.19 (5.00)	0.18 (4.93)	0.17 (4.55)	0.19 (5.01)
GW >681	0.03	0.10 (2.13)	0.12 (2.42)	0.10 (2.22)	0.09 (2.03)	0.08 (1.75)	0.09 (2.13)
[Size < 10]							
Size 10-24	0.13	0.06 (1.36)	0.06 (1.34)	0.06 (1.62)	0.07 (1.68)	0.06 (1.47)	0.07 (1.75)
Size 25-49	0.14	-0.06 (−2.28)	-0.06 (−2.24)	-0.05 (−1.73)	-0.05 (−1.97)	-0.07 (−2.41)	-0.05 (−1.81)
Size 50-99	0.15	-0.01 (−0.45)	-0.01 (−0.48)	0.00 (0.11)	-0.01 (−0.23)	-0.02 (−0.74)	0.00 (−0.10)
Size 100-199	0.15	-0.02 (−0.81)	-0.02 (−0.63)	-0.01 (−0.41)	-0.03 (−1.06)	-0.02 (−0.79)	-0.02 (−0.58)
Size 200-499	0.20	0.05 (1.78)	0.05 (1.95)	0.06 (2.24)	0.04 (1.81)	0.04 (1.51)	0.05 (1.91)
[Part of larger org.]							
Single	0.22	-0.11 (−5.01)	-0.11 (−4.96)	-0.09 (−4.25)	-0.08 (−3.48)	-0.11 (−5.20)	-0.10 (−4.83)
[Private/other]							
Public	0.31	0.16 (5.65)	0.15 (5.25)	0.14 (4.69)	0.14 (5.06)	0.16 (5.57)	0.16 (5.64)
[Manufactu ring]							
Utility	0.01	0.22 (5.23)	0.24 (5.65)	0.21 (4.77)	0.21 (4.72)	0.22 (5.05)	0.23 (5.29)
Construction	0.03	-0.05 (−1.15)	-0.04 (−0.94)	-0.04 (−0.90)	-0.02 (−0.52)	-0.05 (−1.11)	-0.04 (−1.08)

[cont'd]	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Distribution	0.15	0.05 (1.49)	0.05 (1.34)	0.04 (1.24)	0.03 (0.86)	0.04 (1.18)	0.06 (1.61)
Hotel / Res.	0.04	0.06 (0.98)	0.06 (0.95)	0.07 (1.06)	0.04 (0.67)	0.05 (0.81)	0.07 (1.01)
Trans / Comm.	0.06	0.23 (6.41)	0.25 (6.51)	0.23 (6.16)	0.22 (6.08)	0.23 (6.32)	0.24 (6.38)
Fin. Services	0.04	0.23 (4.83)	0.24 (5.01)	0.23 (4.87)	0.18 (3.83)	0.23 (4.84)	0.22 (4.57)
Bus. Services	0.08	-0.07 (−1.71)	-0.06 (−1.40)	-0.07 (−1.72)	-0.08 (−1.90)	-0.07 (−1.67)	-0.06 (−1.55)
Public Adm.	0.09	0.12 (2.87)	0.13 (2.98)	0.11 (2.55)	0.12 (2.74)	0.14 (3.15)	0.13 (2.91)
Education	0.10	0.12 (2.87)	0.14 (3.00)	0.10 (2.28)	0.11 (2.50)	0.11 (2.64)	0.13 (2.89)
Health	0.13	0.14 (3.41)	0.15 (3.42)	0.13 (3.01)	0.13 (3.34)	0.14 (3.40)	0.14 (3.44)
Other Service	0.03	0.05 (1.10)	0.04 (0.83)	0.04 (0.87)	0.05 (1.03)	0.04 (0.96)	0.05 (1.19)
Workplace < 3 yrs	0.08	-0.06 (−1.66)	-0.06 (−1.67)	-0.05 (−1.68)	-0.05 (−1.59)	-0.06 (−1.62)	-0.05 (−1.59)
Workplace 3-4 yrs	0.07	0.00 (0.03)	-0.01 (−0.32)	0.00 (0.04)	0.00 (−0.07)	0.03 (0.74)	0.00 (0.10)
Workplace 5-9 yrs	0.14	-0.02 (−0.68)	-0.03 (−0.88)	-0.01 (−0.39)	-0.02 (−0.75)	-0.02 (−0.62)	-0.01 (−0.47)
W'place 10-20 yrs	0.20	-0.05 (−2.26)	-0.05 (−2.25)	-0.05 (−2.23)	-0.04 (−2.06)	-0.05 (−2.31)	-0.04 (−2.06)
[W'place>20 yrs]							
E. Anglia	0.05	0.01 (0.20)	0.01 (0.20)	0.01 (0.17)	0.00 (−0.06)	0.04 (0.61)	0.02 (0.25)
E. Midlands	0.09	0.10 (3.22)	0.10 (3.17)	0.11 (3.58)	0.08 (2.75)	0.09 (3.10)	0.10 (3.21)
London	0.10	0.06 (2.24)	0.07 (2.55)	0.06 (2.35)	0.06 (2.27)	0.07 (2.52)	0.06 (2.29)
[Rest of SE]							
North	0.07	0.18 (4.71)	0.20 (4.57)	0.17 (4.80)	0.18 (4.89)	0.20 (5.26)	0.17 (4.43)
Northwest	0.10	0.17 (5.23)	0.17 (4.79)	0.17 (5.03)	0.17 (4.90)	0.17 (5.25)	0.17 (5.13)
Scotland	0.10	0.08 (3.00)	0.08 (2.75)	0.07 (2.61)	0.09 (3.11)	0.09 (3.30)	0.08 (3.10)
Southwest	0.08	0.08 (2.03)	0.07 (1.93)	0.08 (2.14)	0.07 (1.97)	0.08 (2.03)	0.08 (2.02)
Wales	0.04	0.09 (1.89)	0.10 (1.92)	0.10 (2.28)	0.09 (2.00)	0.08 (1.76)	0.09 (1.93)
West Midlands	0.10	0.09 (2.58)	0.09 (2.33)	0.10 (2.81)	0.08 (2.47)	0.09 (2.58)	0.09 (2.68)
Yorks/Humber.	0.08	0.12 (3.83)	0.12 (3.48)	0.11 (3.40)	0.13 (4.01)	0.12 (3.72)	0.12 (3.78)
[No recog. Union]							
Union Recog.	0.58	0.40 (17.22)	0.40 (16.38)	0.35 (13.72)	0.39 (16.94)	0.39 (17.19)	0.40 (17.04)
[No strategic plan]							
Strategy	0.85				-0.01 (−0.33)		
[Not IiP accredited]							
Award	0.35				0.07 (3.90)		
[No written equal ops policy]							
Written Policy	0.81				0.07 (2.59)		
[No griev. Proc.]							
Grievance Proc.	0.96				0.10 (1.65)		
In favour	0.18		0.17 (11.01)				
[Neutral]							
Not in favour	0.28		-0.04 (−2.65)				
Other	0.01		-0.21 (−2.16)				
In favour	0.38			0.22 (5.31)			
[Not in favour]							
Neutral	0.49			0.12 (3.22)			
Not at issue	0.02			-0.12 (−0.84)			
Other	0.00						
[Low HRM score]							
HRM High	0.50					-0.01 (−0.66)	
[No quality circle]							
Quality circle	.051					0.01 (0.72)	
[No team briefing]							
Team briefing	.054					0.04 (2.43)	
[No reg. Meeting]							
Reg. Meetings	.035					0.01 (0.65)	
[No non-union collective. Rep.]							
Non-union collective representation	.043						0.02 (1.16)
[No Euro WC in UK]							
Euro WC in UK	.009						0.04 (0.96)

Notes: Based on data derived from WERS 1998. Coefficients are marginal effects at means
of independent variables in the estimation sample. T-stats in parentheses.

Table: Models of Desired Union Voice in WERS 1998

	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
		Dependent variable: Desired Union Membership						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[Male]								
Female	0.49	-0.03 (-2.09)	-0.02 (-1.27)	-0.04 (-2.19)	-0.03 (-2.00)	-0.04 (-2.22)	-0.03 (-2.08)	-0.03 (-1.91)
[Age <25]								
Age 25-29	0.13	-0.02 (-0.71)	-0.01 (-0.54)	-0.02 (-0.78)	-0.02 (-0.79)	-0.02 (-0.91)	-0.02 (-0.73)	-0.02 (-0.82)
Age 30-39	0.27	-0.03 (-1.42)	-0.03 (-1.22)	-0.03 (-1.48)	-0.04 (-1.69)	-0.04 (-1.50)	-0.03 (-1.44)	-0.04 (-1.60)
Age 40-49	0.25	-0.04 (-1.50)	-0.03 (-1.30)	-0.04 (-1.58)	-0.04 (-1.61)	-0.04 (1.48)	-0.04 (-1.49)	-0.04 (-1.57)
Age 50-59	0.18	-0.07 (-2.60)	-0.07 (-2.39)	-0.07 (-2.66)	-0.07 (-2.70)	-0.07 (-2.51)	-0.07 (-2.60)	-0.07 (-2.66)
Age 60+	0.04	-0.13 (-3.41)	-0.11 (-2.97)	-0.13 (-3.52)	-0.13 (-3.38)	-0.13 (-3.40)	-0.13 (-3.39)	-0.12 (-3.24)
[Quality low]								
Quality mid	0.41	0.05 (3.29)	0.05 (3.36)	0.05 (3.37)	0.04 (2.79)	0.05 (3.06)	0.05 (3.29)	0.05 (3.46)
Quality high	0.21	0.07 (3.23)	0.08 (3.63)	0.07 (3.29)	0.07 (2.91)	0.07 (3.07)	0.07 (3.21)	0.08 (3.49)
[White]								
Ethnic	0.04	0.09 (2.82)	0.10 (2.60)	0.10 (2.85)	0.09 (2.68)	0.09 (2.74)	0.10 (2.91)	0.09 (2.57)
[Never Memb]								
Ex Member	0.18	0.18 (12.74)	0.16 (11.18)	0.18 (12.41)	0.18 (12.44)	0.18 (12.63)	0.18 (12.74)	0.18 (12.17)
Member	0.39	0.60 (40.19)	0.58 (37.53)	0.59 (39.58)	0.59 (39.10)	0.59 (39.66)	0.60 (40.17)	0.58 (37.12)
Manager	0.09	-0.31 (-9.34)	-0.33 (-9.94)	-0.31 (-9.36)	-0.32 (-9.31)	-0.31 (-9.34)	-0.31 (-9.29)	-0.33 (-9.46)
Prof.	0.11	-0.19 (-5.00)	-0.21 (-5.74)	-0.19 (-5.00)	-0.20 (-5.05)	-5.12 (-0.20)	-0.19 (-4.99)	-0.20 (-5.04)
Asst. Prof.	0.08	-0.25 (-7.08)	-0.25 (-7.15)	-0.24 (-7.07)	-0.25 (-6.96)	-0.24 (-6.97)	-0.25 (-7.03)	-0.26 (-7.18)
Clerical	0.18	-0.20 (-7.28)	-0.22 (-7.83)	-0.20 (-7.31)	-0.20 (-7.14)	-0.20 (-7.20)	-0.20 (-7.29)	-0.21 (-7.47)
Craft	0.10	-0.07 (-2.43)	-0.07 (-2.50)	-0.07 (-2.47)	-0.07 (-2.47)	-0.07 (-2.37)	-0.07 (-2.50)	-0.07 (-2.56)
Personal	0.12	-0.16 (-4.33)	-0.16 (-4.28)	-0.16 (-4.39)	-0.17 (-4.57)	-0.16 (-4.25)	-0.16 (-4.30)	-0.16 (-4.48)
Sales	0.09	-0.08 (-2.48)	-0.09 (-2.71)	-0.08 (-2.53)	-0.10 (-2.93)	-0.09 (-2.57)	-0.08 (-2.48)	-0.09 (-2.57)
Other Occup.	0.10	-0.10 (-3.27)	-0.09 (-3.10)	-0.10 (-3.26)	-0.10 (-3.29)	-0.11 (-3.50)	-0.10 (-3.28)	-0.11 (-3.48)
[WP ten. <2]								
WP ten. 2-4	0.23	0.02 (1.12)	0.01 (0.79)	0.02 (1.22)	0.01 (0.58)	0.02 (1.23)	0.02 (1.16)	0.02 (1.29)
WP ten. 5-9	0.22	0.02 (0.98)	0.01 (0.77)	0.02 (0.96)	0.01 (0.59)	0.02 (1.12)	0.02 (0.95)	0.02 (1.08)
WP ten. >10	0.26	0.02 (0.74)	0.01 (0.50)	0.02 (0.77)	0.01 (0.36)	0.02 (0.78)	0.01 (0.71)	0.02 (0.90)
Hrs. <10	0.05	0.01 (0.28)	0.01 (0.11)	0.01 (0.17)	0.02 (0.33)	0.01 (0.29)	0.01 (0.28)	0.01 (0.19)
Hrs. 10-29	0.22	-0.02 (-0.92)	-0.04 (-1.72)	-0.02 (-1.00)	-0.02 (-0.78)	-0.03 (-1.11)	-0.02 (-0.91)	-0.02 (-1.03)
[Hrs. 30-39]								
Hrs. 40-47	0.27	-0.05 (-3.12)	-0.05 (-3.15)	-0.05 (-2.95)	-0.04 (-2.83)	-0.05 (-3.22)	-0.05 (-3.04)	-0.05 (-2.93)
Hrs. >47	0.15	-0.05 (-2.49)	-0.06 (-2.60)	-0.05 (-2.47)	-0.05 (-2.43)	-0.05 (-2.50)	-0.05 (-2.43)	-0.05 (-2.32)
GW < 50	0.08	-0.07 (-1.62)	-0.03 (-0.67)	-0.07 (-1.72)	-0.07 (-1.76)	-0.06 (-1.43)	-0.07 (-1.61)	-0.07 (-1.64)
GW 51-80	0.07	-0.01 (-0.40)	0.00 (-0.11)	-0.01 (-0.34)	-0.03 (-0.69)	-0.02 (-0.51)	-0.01 (-0.40)	-0.02 (-0.42)
GW 81-140	0.13	-0.04 (-1.57)	-0.03 (-1.38)	-0.04 (-1.60)	-0.04 (-1.71)	-0.03 (-1.48)	-0.04 (-1.56)	-0.04 (-1.50)
[GW 140-220]								
GW 221-260	0.10	-0.04 (-1.91)	-0.03 (-1.56)	-0.04 (-1.88)	-0.04 (-1.98)	-0.04 (-2.09)	-0.04 (-1.92)	-0.05 (-2.21)
GW 261-310	0.10	-0.07 (-3.15)	-0.08 (-3.31)	-0.07 (-3.09)	-0.06 (-2.90)	-0.07 (-3.01)	-0.07 (-3.21)	-0.08 (-3.38)
GW 311-360	0.08	-0.04 (-1.23)	-0.03 (-1.00)	-0.04 (-1.25)	-0.03 (-1.00)	-0.03 (-1.14)	-0.04 (-1.27)	-0.03 (-1.15)
GW 361-430	0.10	-0.04 (-1.37)	-0.04 (-1.48)	-0.04 (-1.37)	-0.03 (-1.02)	-0.04 (-1.33)	-0.04 (-1.44)	-0.04 (-1.37)
GW 431-540	0.07	-0.14 (-4.39)	-0.14 (-4.60)	-0.13 (-4.30)	-0.13 (-4.04)	-0.13 (-4.20)	-0.14 (-4.40)	-0.15 (-4.55)
GW 541-680	0.04	-0.16 (-4.16)	-0.17 (-4.27)	-0.16 (-4.26)	-0.15 (-4.02)	-0.16 (-4.12)	-0.16 (-4.30)	-0.17 (-4.25)
GW >681	0.03	-0.32 (-5.92)	-0.31 (-5.61)	-0.31 (-5.92)	-0.31 (-5.80)	-0.32 (-5.87)	-0.32 (-6.02)	-0.32 (-5.88)
[Size < 10]								
Size 10-24	0.13	-0.14 (-4.40)	-0.15 (-4.53)	-0.14 (-4.36)	-0.12 (-3.63)	-0.13 (-3.96)	-0.14 (-4.14)	-0.13 (-4.00)
Size 25-49	0.14	-0.12 (-4.22)	-0.13 (-4.43)	-0.11 (-4.04)	-0.10 (-3.35)	-0.12 (-4.02)	-0.11 (-3.94)	-0.11 (-3.73)
Size 50-99	0.15	-0.09 (-3.19)	-0.09 (-3.21)	-0.08 (-3.03)	-0.07 (-2.81)	-0.08 (-2.93)	-0.08 (-3.03)	-0.08 (-2.87)
Size 100-199	0.15	-0.09 (-3.46)	-0.09 (-3.50)	-0.08 (-3.27)	-0.09 (-3.62)	-0.08 (-3.18)	-0.08 (-3.28)	-0.07 (-2.82)
Size 200-499	0.20	-0.02 (-0.64)	-0.02 (-0.91)	-0.01 (-0.38)	-0.01 (-0.45)	-0.01 (-0.38)	-0.02 (-0.61)	-0.02 (-0.52)
[Non-single]								
Single workpl.	0.22	-0.10 (-5.20)	-0.10 (-5.16)	-0.09 (-4.93)	-0.06 (-3.15)	-0.10 (-5.09)	-0.10 (-5.04)	-0.09 (-4.66)
[Private]								
Public	0.31	0.14 (5.05)	0.13 (4.82)	0.12 (4.55)	0.13 (4.91)	0.13 (4.86)	0.14 (5.00)	0.12 (4.39)
[Manufacturing								
Utility	0.01	0.11 (3.51)	0.11 (3.76)	0.10 (3.23)	0.10 (3.04)	0.12 (3.57)	0.11 (3.50)	0.11 (3.29)
Construction	0.03	-0.05 (-1.05)	-0.04 (-0.94)	-0.04 (-1.00)	-0.04 (-0.90)	-0.04 (-0.97)	-0.04 (-1.01)	-0.03 (-0.74)
Distribution	0.15	0.05 (1.69)	0.04 (1.52)	0.05 (1.72)	0.04 (1.39)	0.05 (1.88)	0.05 (1.70)	0.06 (2.17)

	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Hotel / Res.	0.04	0.02 (0.40)	0.02 (0.40)	0.02 (0.44)	0.01 (0.15)	0.02 (0.50)	0.01 (0.33)	0.04 (1.02)
Trans / Comm.	0.06	0.09 (2.56)	0.11 (3.04)	0.10 (2.49)	0.09 (2.65)	0.10 (2.63)	0.09 (2.54)	0.09 (2.31)
Fin. Services	0.04	0.08 (2.70)	0.09 (3.03)	0.09 (2.84)	0.07 (2.10)	0.10 (2.96)	0.08 (2.64)	0.09 (2.57)
[cont'd]	Mean	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Bus. Services	0.08	-0.02 (−0.65)	-0.01 (−0.46)	-0.02 (−0.54)	-0.03 (−1.06)	-0.02 (−0.51)	-0.02 (−0.64)	0.00 (−0.04)
Public Adm.	0.09	0.05 (1.24)	0.05 (1.17)	0.04 (1.12)	0.03 (0.79)	0.05 (1.21)	0.05 (1.24)	0.06 (1.46)
Education	0.10	0.00 (0.06)	0.01 (0.24)	-0.01 (−0.21)	-0.02 (−0.52)	0.01 (0.16)	0.00 (0.04)	-0.01 (−0.18)
Health	0.13	0.09 (2.34)	0.10 (2.71)	0.08 (2.16)	0.07 (1.80)	0.09 (2.31)	0.09 (2.33)	0.09 (2.44)
Other Service	0.03	0.06 (1.42)	0.06 (1.55)	0.06 (1.45)	0.05 (1.27)	0.05 (1.32)	0.06 (1.42)	0.08 (1.97)
AGWP < 3	0.08	-0.02 (−0.80)	-0.01 (−0.41)	-0.02 (−0.70)	-0.02 (−0.77)	-0.01 (−0.42)	-0.02 (−0.79)	0.00 (0.01)
AGWP 3-4	0.07	0.02 (0.66)	0.03 (0.79)	0.03 (0.74)	0.03 (0.80)	0.00 (0.06)	0.02 (0.62)	0.04 (1.15)
AGWP 5-9	0.14	0.03 (1.49)	0.04 (1.89)	0.03 (1.71)	0.03 (1.34)	0.03 (1.49)	0.03 (1.53)	0.04 (1.93)
AGWP 10-20	0.20	-0.01 (−0.66)	-0.01 (−0.45)	-0.01 (−0.53)	-0.01 (−0.66)	-0.01 (−0.47)	-0.01 (−0.66)	-0.01 (−0.54)
[AGWP >20]								
E. Anglia	0.05	0.04 (1.27)	0.03 (0.93)	0.05 (1.35)	-0.06 (1.50)	0.03 (0.76)	0.04 (1.24)	0.04 (1.21)
E. Midlands	0.09	0.00 (0.13)	-0.01 (−0.40)	0.01 (0.36)	0.01 (0.17)	0.00 (−0.11)	0.01 (0.17)	0.00 (−0.06)
London	0.10	0.04 (1.38)	0.03 (0.95)	0.04 (1.48)	0.04 (1.51)	0.05 (1.77)	0.04 (1.39)	0.05 (1.99)
North	0.07	0.05 (1.54)	0.04 (1.01)	0.05 (1.49)	0.06 (1.78)	0.04 (1.37)	0.05 (1.52)	0.06 (1.85)
Northwest	0.10	0.04 (1.76)	0.04 (1.42)	0.05 (1.89)	0.04 (1.50)	0.04 (1.58)	0.04 (1.71)	0.04 (1.32)
Scotland	0.10	0.03 (0.94)	0.01 (0.35)	0.02 (0.80)	0.02 (0.85)	0.03 (1.07)	0.03 (0.97)	0.02 (0.70)
Southwest	0.08	0.06 (1.88)	0.04 (1.31)	0.07 (2.01)	0.06 (1.88)	0.06 (1.89)	0.06 (1.87)	0.05 (1.60)
Wales	0.04	0.06 (1.78)	0.03 (1.10)	0.06 (2.02)	0.06 (2.02)	0.06 (1.80)	0.06 (1.81)	0.06 (1.83)
West Midlands	0.10	0.04 (1.16)	0.02 (0.75)	0.04 (1.27)	0.04 (1.39)	0.05 (1.42)	0.04 (1.16)	0.04 (1.22)
Yorkshire / Humberside	0.08	0.06 (2.38)	0.05 (1.87)	0.06 (2.25)	0.08 (2.89)	0.07 (2.56)	0.06 (2.37)	0.06 (2.11)
Strategy	0.85				0.00 (−0.15)			
Award	0.35				0.03 (1.78)			
Written Policy	0.81				0.06 (2.50)			
Grievance Proc.	0.96				0.16 (3.74)			
Union Recog.	0.58	0.17 (9.39)	0.16 (8.53)	0.14 (7.31)	0.16 (8.55)	0.18 (9.70)	0.17 (9.36)	0.11 (3.81)
Ic4__1	0.18		0.15 (7.95)					
[Ic4__2]								
Ic4__3	0.28		0.04 (2.26)					
Ic4__7	0.01		-0.24 (−2.57)					
Eview__1	0.38			0.10 (3.41)				
[Eview__2]								
Eview__3	0.49			0.04 (1.62)				
Eview__5	0.02			-0.10 (−1.01)				
Eview__6	0.00							
HRM High	0.50					-0.01 (−0.45)		
Q Circles	0.51					-0.01 (−0.38)		
T Brief 3	0.54					0.02 (1.13)		
Reg. Meetings	0.35					0.02 (1.19)		
NONUCOLR	0.43						0.01 (0.43)	
Euro WCUK	0.09						0.01 (0.41)	
[30%+density]								
0%								-0.13 (−4.09)
1-9%								-0.11 (−3.59)
10-29%								-0.06 (−2.76)

Notes: Based on data derived from WERS 1998. Coefficients are marginal effects at means of independent variables in the estimation sample. T-stats in parentheses.

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