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### **Patterns of information disclosure and joint consultation in Great Britain: determinants and outcomes**

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**EMPLOYMENT RELATIONS  
RESEARCH SERIES NO. 73**

Patterns of information  
disclosure and joint  
consultation in Great Britain -  
determinants and outcomes

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KING'S COLLEGE LONDON  
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KING'S COLLEGE LONDON AND  
PAUL WILLMAN, SAID BUSINESS SCHOOL

WERS 2004 GRANTS FUND



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# About EMAR

Employment Market Analysis and Research (EMAR) is as a multidisciplinary team of economists, social researchers and statisticians based in the Employment Relations Directorate of DTI.

Our role is to provide the evidence base for good policy making in employment relations, labour market and discrimination at work. We do this through:

- Conducting periodic socio-economic benchmark surveys.
- Commissioning external research projects and reports.
- Conducting in-house research and analysis.
- Assessing the regulatory impact of proposed employment law.
- Monitoring and evaluating of the impact of government policies

We publicly disseminate results of this research through the DTI Employment Relations Research Series and other publications. For further details of EMAR's work please see our web pages at:

<http://www.dti.gov.uk/employment/research-evaluation>

## About this publication

The project managers for this report were Carmen Alpin, Principal Research Officer, and Harjinder Kaur, Research Officer, both in the Employment Market Analysis and Research branch.

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The views expressed in this publication do not necessarily reflect those of the Department or the Government. We publish it as a contribution towards open debate about how best we can achieve our objectives.

# Foreword

The Department of Trade and Industry's aims are to create the conditions for business success, and help the UK respond to the challenge of globalisation. As part of that objective we want a dynamic labour market that provides full employment, adaptability and choice, underpinned by decent minimum standards. DTI want to encourage high performance workplaces that add value, foster innovation and offer employees skilled and well-paid jobs.

The Department has an ongoing research programme on employment relations and labour market issues, managed by the Employment Market Analysis and Research branch (EMAR).

This is the third of 14 reports commissioned by DTI under the Workplace Employment Relations Survey (WERS) 2004 Grants Fund. The Fund is a Department of Trade and Industry initiative to develop the evidence base in areas of policy interest, raise awareness of this survey and encourage advanced data analysis based on the WERS 2004 datasets

A call for proposals was made in November 2005. Proposals were selected for their contribution to the evidence base and relevance to government policy. The Fund is administered by the EMAR branch and the Management, Leadership and Skills Unit (MLSU). More details on the WERS 2004 Grants Fund can be found here:

<http://www.dti.gov.uk/employment/research-evaluation/grants/wers>

More details on the Workplace Employment Relations Survey are here:

<http://www.dti.gov.uk/employment/research-evaluation/wers-2004>

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**Grant Fitzner**

Director, Employment Market Analysis and Research

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# Executive summary

*This report examined trends in information and consultation of employees at British workplaces between 1990 and 2004, using Workplace Employment Relations Survey panel data.*

*Information disclosure to employees increased significantly between 1990 and 1998, but largely stabilised between 1998 and 2004; notwithstanding that during both periods though there were significant fluctuations across size of workplaces with larger workplaces providing more information.*

*Between 1990 and 1998 the strongest predictors of information disclosure were the initial level of disclosure, the level of managerial sophistication, and the existence of joint consultation. Between 1998 and 2004 they were the initial level of disclosure, and company financial performance.*

*While between 1990 and 1998, information disclosure had a significant positive impact on financial performance, this relationship did not hold between 1998 and 2004. The conundrum is that between 1990 and 1998, disclosure was found to have a positive effect on financial performance, while between 1998 and 2004 the relationship was reversed with financial performance having a positive influence on disclosure.*

## Aims and objectives

The study charts the trends in information and consultation of employees between 1990 and 2004 in Britain. It also investigates the determinants of information disclosure and its outcomes. It explores the importance of voice mechanisms (such as direct participation, indirect participation via joint consultation, and involvement via trade unions) and high performance work practices in explaining information sharing. Finally, it examines whether information and consultation of various kinds have a pay-off in terms of employment relations climate, productivity, and profitability.

## Background

This research is particularly relevant in the context of the recently introduced Information and Consultation of Employees (ICE) Regulations (2004). The research maps the terrain on which the Regulations are being introduced, identifies drivers, and provides a basis for future evaluation of the workings of the regulations and policy assessments.

To date most of the research in this area has been limited by the use of cross-sectional data. This report uses panel data to gain a better

understanding of the causal relationships between the different variables under study.

### Patterns of information disclosure

On average, information provision by management to employees across British establishments increased significantly between 1990 and 1998. By contrast, between 1998 and 2004 information disclosure remained stable, or even fell slightly.

In both time periods there were significant fluctuations in levels of information disclosure across establishments. The very largest workplaces were more likely to provide information. Generally the smaller the workplace, the less likely it was to share information. Between 1990 and 1998, there was an increase in information provision across all size bands; however, the biggest and only significant increase came with smaller workplaces over this period. From 1990 to 2004, middle-sized workplaces (50 – 199) saw a small increase, while all the others experienced a decline, though none of these changes were significant.

### Antecedents of information disclosure

The antecedents of information disclosure differed across the two time periods. In other words, the factors that help to explain variations in information disclosure across establishments between 1990 and 1998 were not the same as those that help to explain variations in disclosure between 1998 and 2004.

Between 1990 and 1998, the strongest predictor of disclosure was the level of disclosure at the beginning of the period, followed by the level of managerial sophistication, and the existence of joint consultation arrangements at the workplace. As hypothesised, all three sets of relationships were positive.

Between 1998 and 2004, the strongest predictor of disclosure was also the level of disclosure at the beginning of the period, followed by the financial performance of the establishment. Both sets of relationships were positive.

### Consequences of information disclosure

The consequences of information disclosure also differed across the two time periods. Between 1990 and 1998, information disclosure had a significant positive impact on establishment financial performance, but not on the climate of employee relations. Between 1998 and 2004, on the other hand, information disclosure was not related either to financial performance or to the employee relations climate at the workplace.

More generally, between 1990 and 1998, information disclosure was found to have a positive effect on establishment financial performance, while between 1998 and 2004 the relationship was reversed with establishment financial performance having a positive influence on disclosure.

## About this project

This research was carried out as part of the Department of Trade and Industry's employment relations research programme, and was funded under the WERS 2004 Grants Fund. Further details on the Fund can be found here:

<http://www.dti.gov.uk/employment/research-evaluation/grants/wers>

The research reported in this report is based on secondary analysis of the 1990-1998 and 1998-2004 Workplace Employment Relations Survey (WERS) panel surveys. WERS is a survey of 2,000 managers responsible for employment relations. Both the 1990 and the 1998 surveys included a panel element. The panel is constructed by revisiting a sample of the workplaces that took part in the previous cross-section survey.

Data were collected using face-to-face interviews with around 882 managers in the 1990-1998 panel survey and with 956 managers in the 1998-2004 panel survey.

## About the authors

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## About WERS 2004

The Workplace Employment Relations Survey (WERS 2004) is a nationally representative survey of British workplaces employing five or more employees and covering all sectors of the economy except agriculture, fishing, mining and quarrying. More information on the survey can be found here:

<http://www.dti.gov.uk/employment/research-evaluation/wers-2004/>

The survey is jointly sponsored by the Department of Trade and Industry, the Advisory Conciliation and Arbitration Service (Acas), the Economic and Social Research Council and the Policy Studies Institute. It follows in the acclaimed footsteps of earlier surveys conducted in 1980, 1984, 1990 and 1998.

For further information please refer to the main published outputs from WERS 2004: the first findings booklet (Kersley *et al*, 2005), a report on small and medium-sized enterprises (Forth *et al*, 2006), and the 400-page sourcebook of detailed findings (Kersley *et al*, 2006). The sourcebook is published by Routledge, while the first two reports are available free from DTI: <http://www.dti.gov.uk/publications> Please quote the URN when ordering.

The data from WERS 2004 is now available to users through the UK Data Archive (study number: 5294): <http://www.data-archive.ac.uk>

# 1

## Introduction

Information disclosure by employers to employees varies significantly between workplaces in the UK. It has changed over time, with an apparent increase in provision up to the late 1990s and a levelling off thereafter. In addition, there has been considerable fluctuation over time in the rank ordering of workplaces and no overall convergence in levels of disclosure provision. This requires explanation, because various strands of literature would suggest the likelihood of high and rising levels of disclosure by employers.

Arguments in economics and accounting literatures suggest that firms have an interest in maximum disclosure. Such disclosure reduces uncertainties and opportunism and leads to more efficient outcomes. Constraints on information sharing may be the costs of information processing, the loss of proprietary secrets, and the loss of advantage vis-a-vis other parties (Stigler 1961; Williamson, 1985; Healy and Palepu 2001; Verecchia 2001). However, overall, a strong strand in the economics and accounting literatures suggest that firms have a strong incentive to disclose. Second, several strands of Human Resource Management (HRM) and Industrial Relations (IR) literatures also see firms as having an incentive to disclose, again subject to cost constraints, but with benefits outweighing costs (Walton and McKersie 1965; Aoki 1988; Pfeffer 1998). Third, there is a body of legal-institutional analysis that builds on the fact that the state has intervened and mandated disclosure by employers to employees. In the UK there has been a steady build-up in such legal requirements over time (Gospel, Lockwood, and Willman, 2003; Gospel and Willman, 2005). Such legal requirements are likely to increase levels of information disclosure and may increase uniformity in information provision. Thus, economic, institutional, and legal arguments suggest higher levels, some increase in disclosure over time, and some upward convergence between firms. Yet, as stated, a more complex pattern is observed in the UK.

To date, research on information provision has been limited and restricted to a small number of countries. On determinants, early US research showed that more information is disclosed and there is more uniformity in its content where there is a trade union (Kleiner & Bouillon, 1988). Later, Japanese research suggests that more information is provided by firms in Japan than in the US. Also, in Japan, trade unions, and especially unions perceived by management to be cooperative, have a positive effect on disclosure. Joint consultative committees alone, without a union presence, elicit less information and the content of information is of a more operational and less strategic kind (Morishima,

1989; 1991). The latter author suggests that differences may be related to national culture. Equally, they may reflect different 'games' – in cooperative games more is disclosed than in conflictual games. For the UK, recent work by Peccei *et al.* (2006) shows that disclosure is positively associated with the level of information possessed by management, the extent to which management perceives the workforce shares their values, and the degree of financial difficulty experienced by the workplace. It is also associated with the existence of voice mechanisms, with direct participation, trade unions, and joint consultative committees having a positive effect in that order of significance. However, increasing the number of voice mechanisms does not increase the amount of information provided.

On outcomes, the US work by Kleiner and Bouillon (1988) suggested that information provision was positively related to wage levels, but unrelated to productivity, in both union and non-union settings. However, later US research (Lawler *et al.* 1998, 2001; Benson and Lawler, 2003) suggests that information sharing is positively related to both quality effects and financial performance. Japanese research (Morishima 1989, 1991) shows both "process benefits" for the firm in terms of shorter and smoother wage negotiations with unions and also "outcome benefits" in the form of lower labour costs and higher productivity and profitability. Again, this may reflect different national and institutional contexts and different underlying games. For the UK, recent work by Peccei *et al.* (2005) suggests that greater disclosure can have a positive effect on performance. However, the story is complex in that there is only a small direct impact and the main effect depends on contingent factors, especially the type of information provided and the level of employee commitment.

Though suggestive, to date most of this work has been limited by the use of cross-sectional data. This poses problems with the establishment of causality and the exploration of non-recursive relationships. In this report, the 1990-98 and the 1998-2004 Workplace Employment Relations Survey (WERS) panel surveys are used to explore trends in information disclosure and outcomes. Specifically, we articulate hypotheses concerning determinants and outcomes of information provision, using a set of management practices, voice arrangements, and shock effects. These are then tested on the WERS panel data. The article is organised as follows. Chapter 2 outlines the main trends in information provision. Chapter 3 develops the main hypotheses concerning outcomes and determinants of information sharing to be tested in the study. Chapter 4 outlines the data set and the methods used in the analysis. Chapter 5 presents the key findings. Finally, Chapter 6 discusses the results more broadly and considers theoretical and policy implications.

## 2

# Patterns of information disclosure: 1990-1998 and 1998-2004

In order to develop testable hypotheses, the broad pattern of information disclosure must be outlined. Tables A1a and A1b in Appendix A use the WERS panel surveys for 1990-98 and 1998-2004. They provide data on three items of information provision (investment plans, staffing plans, and the financial position of the enterprise). An index of the three is also constructed. The different figures in the two columns for 1998 reflect differences between the panel covering the years 1990-98 and 1998-2004.

Table A1a reveals the following patterns. First, there are substantial differences in the proportion of workplaces providing information on different topics. Thus, the largest proportion of workplaces provided information on the financial position of the establishment. This was followed by information on staffing plans. Perhaps not surprisingly, the lowest proportion of managements shared information on investment plans.

Second, information provision increased significantly over the period 1990 to 1998. By contrast, from 1998 to 2004, information disclosure fell slightly. The table also shows that, whereas the proportion of workplaces where there was no change in the amount of information provided remained roughly stable at just over one third, there were considerably more workplaces showing an increase in the first period than in the latter when substantially more workplaces showed a decrease. In sum, over time, there is an inverted L-shape or hinge-like pattern of information provision.

Third, the table provides correlations between levels of information disclosure in the two time periods. It shows significant, but still relatively low, correlations between levels of disclosure in both the 1990-98 and the 1998-2004 periods. This suggests substantial volatility or churning in the position of establishments. The table also provides a measure of variance that shows a small decrease in both time periods. However, this is not sufficient to suggest an overall compression or convergence in levels of information disclosure across establishments in either time period.

Finally, Table A1b provides data for the information disclosure index, by workplace size. This suggests that the largest workplaces (500 or more) were more likely to provide information. The smaller the workplace, the less likely it is to share information. Between 1990 and 1998, there was an increase in information provision across all size bands; however, the biggest and only significant increase came with smaller workplaces over this period. For 1990 to 2004, middle sized workplaces (50 – 199) saw a small increase, while all the others experienced a decline, though none of these changes was significant.

There are various sets of phenomena to be explored. First, it is necessary to explain the increase in information provision between 1990 and 1998 and then the levelling out between 1998 and 2004. Second, it is necessary to explain the variance or churning in workplaces in terms of information provision. There is also the question as to whether the drivers of information disclosure are the same or different for the two time periods. Third, there is the question of whether information provision has any effect on outcomes.

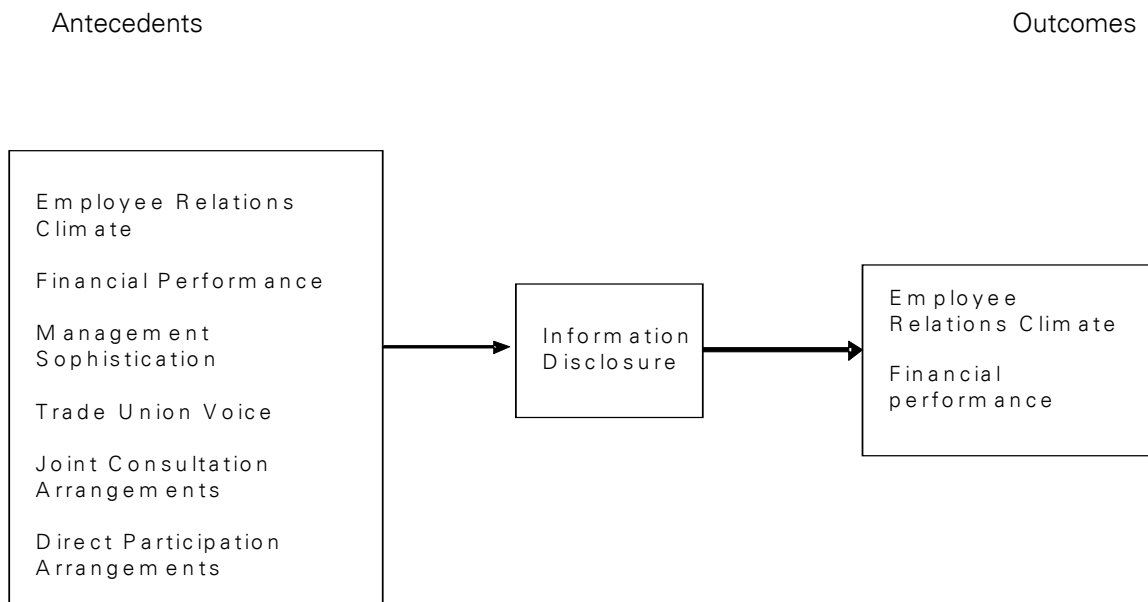
We turn now to the literature and to perspectives on information disclosure to develop the hypotheses that will be tested in the rest of the report.

# 3

## Research hypotheses

The basic explanatory framework underpinning the research is shown schematically in Figure 1. Elements of this framework will be extended and refined as we present the main hypotheses, which are listed in Table A2 in Appendix A.

**Figure 1. Basic research framework**



### Outcomes of information disclosure

The focus of the report is on two key outcomes that have received considerable attention in the literature and for which data are available for both the 1990-98 and the 1998-2004 WERS panels. These are the state of employee-management relations, or the employee relations (ER) climate at the workplace, and the financial performance (FP) of the establishment. Drawing on Peccei *et al.* (2005), the report focuses on a number of specific arguments linked to broad theoretical perspectives about the relationship between information disclosure, ER climate and financial performance.

As noted by Peccei *et al.* (2005), central to one perspective, as articulated in some of the contemporary HRM literature, is the idea that information disclosure by management to employees is good practice and is likely to have a consistently positive effect on various aspects of organisational performance. Specifically, existing theoretical and empirical work in the field of HRM suggests that the sharing of information with employees,



either alone or in combination with other 'progressive' human resource (HR) practices, has a positive effect on performance outcomes (Appelbaum *et al.*, 2000; Guest *et al.*, 2000; Ichniowski *et al.*, 1996; Lawler *et al.*, 1998, 2001).

A number of possible explanations have been proposed. The most common argument is goal alignment, where disclosure operates to bring the parties closer together on the basis of shared understanding and information in what one might broadly characterize as integrative bargaining. This can take a variety of forms (Peccei *et al.*, 2005), but, broadly speaking, information sharing is seen to contribute to organisational performance by helping to align individual and organisational goals, thereby enhancing employee commitment and integration at work. This, in turn, can be expected to enhance the type of cooperative and discretionary forms of employee behaviour that, in the aggregate, can significantly contribute to the overall performance of the organisation (McElroy, 2001; Meyer and Allen, 1997; Organ, 1988; Pfeffer and Veiga, 1999). Similar arguments in the industrial relations and bargaining literatures suggest that more open communication between management and unions is likely to lead to an alignment of the goals of employees and unions with the firm which, in turn, should help to lower opportunism and ultimately lead to better performance outcomes (Walton and McKersie, 1965; Aoki, 1988).

Unlike the 1998 and 2004 WERS cross-section surveys, the WERS panel surveys do not include any direct information on goal alignment or on employee commitment. However, to the extent that information disclosure does indeed lead to greater goal alignment and, hence, to greater employee integration, lower opportunism, and more cooperative forms of behaviour, we would expect such disclosure to be associated with a more positive ER climate. In the present study, therefore, the state of employee-management relations is used as an indicator of goal alignment and, based on the arguments outlined above, the following outcome-related hypothesis is proposed:

*Hypothesis 1 (H1): Information disclosure will have an indirect positive effect on establishment financial performance through its positive impact on the climate of employee relations at the workplace.*

The above hypothesis explicitly theorises ER climate as an intervening variable mediating the relationship between disclosure and financial performance. As such, the hypothesis presupposes two sequential causal links – one between information disclosure and employee relations climate (ID-ERC), and then a subsequent link between employee relations climate and financial performance (ERC-FP). To test such a causal chain requires longitudinal panel data covering a minimum of three, and preferably four, waves of measurement. The WERS panel data are not of this kind, since, as explained more fully below, they consist of two separate panels, one for 1990-98 and the other for 1998-2004, each covering two separate waves of measurement at the beginning and end of the respective time periods. As a result we were unable to formally

test hypothesis 1. However, the hypothesis was tested indirectly by looking at the ID-ERC and the ERC-FP links separately in each of the two time periods. Failure of either of these two links to attain significance would provide *prima facie* evidence that ER climate is unlikely to mediate the relationship between disclosure and performance.

As noted by Peccei *et al.* (2005), there are other factors that may help to account for the positive performance effects of information disclosure. Disclosure may, for example, contribute to performance by enhancing employee motivation and in-role behaviour (Hackman and Oldham, 1980), or by helping to focus employee effort at work (Locke and Latham, 1990). To the extent that these alternative mechanisms are operative and effective, disclosure can be expected to have a separate additional direct effect on performance, above and beyond any effect that it may have through its impact on goal alignment and the climate of employee relations at the workplace. This possibility is captured in the second outcome-related hypothesis:

*Hypothesis 2 (H2): Information disclosure will have a direct positive effect on establishment financial performance, above and beyond any indirect effect through the climate of employee relations at the workplace.*

Future work might be carried out involving a more contingency type explanation. In other words, the impact of information disclosure on performance might vary depending on a series of other factors that affect and moderate the relationship between disclosure and the outcomes of interest (Peccei *et al.* 2005).

#### Antecedents of information disclosure

Up to now the paper has focused on the impact of information disclosure on ER climate and financial performance. In so doing, we have assumed that the relationship between disclosure and the other two variables is recursive and unidirectional. In other words, the assumption has been that disclosure influences performance and ER climate but not the reverse. As discussed more fully below, existing theory and research suggests, however, that the causal ordering between these variables may well be in the opposite direction, with establishment financial performance and ER climate influencing information disclosure rather than the other way around. Or, at the very least, it suggests that, over time, these variables are likely mutually to influence each other so that performance and ER climate may well be antecedents, as well as outcomes, of disclosure. Hence the decision to include these two variables as both antecedents and outcomes of information disclosure in the research framework presented in Figure 1. An important aim of the present study, in fact, is to use the WERS panel data to gain a better understanding of the causal ordering between these variables.

A number of studies have considered the causal links between information-sharing and performance (Cressey *et al.*, 1985, Lawler *et al.* 1998; Pfeffer 1998). Most recently, Peccei *et al.* (2006) have suggested

that the financial position of the workplace may well have a significant influence on information disclosure by management. Specifically, drawing on Cressey, *et al.* (1985), they argue that, in order to obtain concessions and forestall negative action, management is likely to share more information with employees in bad times. They also suggest that management is more likely to share information when it trusts the workforce and perceives that employees are committed to the values of the organisation. Using the 1998 WERS cross-section, Peccei *et al.* (2006) found support for the idea that management is more likely to share information with employees when the financial performance of the establishment is poor and when it perceives a greater degree of goal alignment amongst the workforce. Based on these arguments and results, an alternative set of antecedent-related hypotheses in which performance and ER climate are explicitly treated as predictors of disclosure are proposed:

*Hypothesis 3 (H3): Management will be more likely to disclose information in workplaces characterised by a more positive climate of employee relations.*

*Hypothesis 4 (H4): Management will be more likely to disclose information when the financial performance of the establishment is poor.*

Apart from organisational performance and the state of employee-management relations, there are a number of other factors that are likely to affect information disclosure. The report focuses on five additional factors that have been identified as potentially important antecedents of disclosure in previous studies and for which data are available in both WERS panels.

The first factor is managerial sophistication (competent and confident), which can be expected to have a positive effect on disclosure for several reasons. First, more sophisticated managements are likely to be more confident than less sophisticated ones and, therefore, more open to the idea of sharing information with employees. Second, sophisticated managements are likely to be under greater normative pressure to share information since information-sharing is, in itself, likely to be a highly visible indicator and symbol of the sophistication and progressiveness of management. Third, the notion of managerial sophistication is similar to the management capacity variable that, in the 1998 WERS cross-section, Peccei *et al.* (2006) found to be a significant antecedent of the disclosure of general information in UK establishments.

The next set of antecedents to be considered includes the three voice mechanisms shown in Figure 1. In line with previous research, all three mechanisms can be expected to be associated with higher levels of information-sharing (Lawler, 1989; Cully *et al.*, 1999; Millward *et al.*, 2000). For example, using the 1998 WERS cross-section, Peccei *et al.* (2006) found all three mechanisms had a positive impact on the disclosure of general information at establishment level. The recognition of a trade union for collective bargaining had the strongest effect,

followed by the existence of direct participation arrangements, and then the presence at the establishment of joint consultation arrangements.

The last potential antecedent of information disclosure is the level of disclosure in the previous time period. The argument here is that once management shares information with employees, it may be more difficult not to continue to do so since the act of disclosure may create expectations amongst the workforce for management to do more of the same in the future. This type of lock-in or path dependency argument suggests that disclosure at one point in time will exert some positive causal influence on disclosure at a future date.

Based on the above arguments and evidence, the following additional set of antecedent-related hypotheses are suggested:

*Hypothesis 5 (H5): Management will be more likely to disclose information where its level of sophistication is higher.*

*Hypothesis 6 (H6): Management will be more likely to disclose information where it recognises a trade union for collective bargaining.*

*Hypothesis 7 (H7): Management will be more likely to disclose information where there are joint consultation arrangements in place in the workplace.*

*Hypothesis 8 (H8): Management will be more likely to disclose information where there are direct participation arrangements in place in the workplace.*

*Hypothesis 9 (H9): Management will be more likely to disclose information when disclosure was higher in the previous time period.*

Future work might be carried out involving a more contingency type explanation. In other words, the antecedents of information disclosure may vary depending on a series of other factors that affect and moderate the relationship between various antecedents and disclosure.

# 4

## Data and method

### Data

The present research is based on a multivariate analysis of two of the panel surveys from the Workplace Employment Relations Survey (WERS) series. The WERS series consists of five surveys, conducted in 1980, 1984, 1990, 1998 and 2004. The first three surveys were representative of the population of British workplaces with 25 or more employees, but in 1998 the size threshold was reduced to include workplaces with ten or more employees, and in 2004, the threshold was further lowered to include workplaces with between five and nine employees. The WERS datasets comprise both panel and cross-section elements. The panel is constructed by revisiting a sample of the workplaces which took part in the previous cross-section survey. The manager responsible for employment relations at these continuing workplaces is asked a subset of the questions from the previous cross-section survey, as well as additional questions on changes which have occurred at the workplace since the last interview.

The two panel surveys used in this paper are those for the periods 1990 to 1998, and 1998 to 2004. In total 882 workplaces took part in the 1990 to 1998 panel, and 956 in the 1998 to 2004 panel. Owing to the extension of the cross-section survey to workplaces with ten or more employees in 1998, the 1998 to 2004 panel was nationally representative of workplaces with ten or more employees, whilst the 1990 to 1998 panel was representative of workplaces with 25 or more employees.

Although the follow-up interview for the panel survey mostly asked managers identical questions to the earlier cross-section survey, some of the questions asked on the cross-section surveys have changed over time. As a result of this there are differences in the questions used to measure some items reported in this paper between the two panel surveys. These differences will be highlighted in the following description of variables. Descriptive statistics for the dependent, independent and control variables are given in Table A1a (see Chapter 2) and Table A3 in Appendix A.

### *Dependent variables*

The disclosure of information by managers to employees was measured by a three-item scale which reflected whether the workplace provided employees with information on internal investment, staffing plans, and the financial position of the establishment at the time of the follow-up survey i.e. in 1998 for the 1990 to 1998 panel, and in 2004 for the 1998 to 2004 panel. There was a difference between the two panel surveys in the

way this information was collected. In the 1990 to 1998 panel, managers were asked whether management gave employees or their representatives 'a lot', 'a little' or 'no' information about internal investment plans, the financial position of the establishment, or staffing or manpower plans before implementing any changes in them.

By contrast, in the 1998 to 2004 panel survey managers were asked whether they regularly gave employees or their representatives any information on internal investment plans, the financial position of the establishment, and staffing plans. In order to aid comparison between the two panel surveys, the information on the amount of information provided on each of the three topics available in the 1990 to 1998 panel was collapsed into a dichotomous measure of whether managers provided any information on each of the topics. It was not possible to address the fact that the 1990 to 1998 panel did not ask whether information was provided on a regular basis. A three-item scale was constructed for each panel survey, showing the number of topics on which managers provided information to employees. Table A1a shows the proportion of workplaces which disclosed information on each of the three items and the mean score of the indices constructed for both panel surveys.

#### *Independent variables*

The performance of the workplace was assessed by managers' ratings of the financial performance of the establishment relative to the industry average. Managers were asked to rate the financial performance of the workplace as a 'lot' or a 'little' above or below average or about average compared to other establishments within the same industry. This scale was collapsed into a dichotomous variable indicating whether performance was assessed as above average, average, or below average in order to aid interpretation (Table A3).

The climate of employee relations was determined by managers' ratings of the relationship between management and employees at the workplace. The 1990-1998 panel survey asked managers to rate relations on a seven-item scale, ranging from 'very good' to 'very poor', whilst the scale was compressed to five-items in the 1998-2004 panel. As with the measure of financial performance, these scales were compressed into a dichotomous variable which identified workplaces where the relationship was rated as good, or better than good, rather than where the relationship between managers and employees was viewed less positively (Table A3).

The independent variables fell into two categories; those which were observed at the first point in time, and those which measured change between the first and second interviews. Measures of information disclosure and the indicators of financial performance and climate at the time of the first survey were constructed in the same way as the three related items based on the follow-up survey (described in the section on dependent variables). A three-item index of management sophistication indicated whether the employer used a high (defined as above-average)

number of communication methods, kept records on a high number of items, or whether there was a personnel representative on the board, or governing body of the establishment. A slightly different measure of management sophistication was developed for the 1998 to 2004 panel to reflect differences in the available items between the two panels. This alternative measure again took into account whether managers used a high number of communication methods, but substituted managerial target-setting for record keeping, and took whether the workplace had a strategic plan which covered employee development as an indicator of management sophistication rather than the presence of a personnel specialist on the governing body.

Three voice mechanisms were included as independent variables, although a workplace could potentially have any combination of these practices. An establishment was said to engage in direct participation in the period from 1990 to 1998 where it made use of quality circles or problem solving groups or held regular briefings among work groups or teams at least once a month as a matter of policy.

The measures available in the 1998 to 2004 panel were rather different, as the frequency of such activities was not considered. In both panel surveys a Joint Consultative Committee (JCC) was said to exist where there was a committee of managers and employees which discussed a range of topics, but which engaged in consultation rather than negotiation. Finally, union recognition was defined as recognising a union for the purposes of negotiating pay and conditions for a section of the workforce at the establishment. As an alternative to these voice measures, changes in the use of these measures between 1998 and 2004 were also used as independent variables.

### *Control variables*

Only a limited range of control variables available on the two panel surveys remained consistent over time. However, by carrying out a multivariate analysis it was possible to take out the impact of the size of the workplace, whether it was a single independent establishment or part of a larger organisation, the sector of ownership (public or private sector), and the gender composition of the workforce, making it possible to observe the true relationship between the dependent and independent variables.

In addition, both panel surveys contained information on important changes which had occurred at the workplace over the period since the first survey. The list of possible changes ranged from those which were likely to have a relatively minor impact on the workplace, such as a change of name, to more severe shocks, such as a change of ownership. An index of shocks was constructed and included in all analyses as a control. The index ranged from zero to seven to indicate the number of changes that occurred at the workplace over the period of the panel survey.

## Method

Where the amount of information disclosed was used as the dependent variable, the multivariate analysis was carried out using ordered probit regressions, appropriate where the dependent variable is ordinal. Where financial performance or the climate of employee relations at the workplace was the dependent variable, probit regressions were used as these measures were dichotomous.

Stata 9.2 SE was used to apply probability weights to the data, making the findings representative of the population of British workplaces with 25 or more employees which continued in existence over the period from 1990 to 1998 and of workplaces with ten or more employees which survived from 1998 to 2004. As the multivariate analysis controlled for workplace size, the fact that the 1998 to 2004 panel contained workplaces with ten to 24 employees does not affect the comparability of the findings between the two panel surveys.

### Analysis procedures

All study hypotheses were tested using lagged effect estimation models. In a lagged effect model using two-wave panel data, the value of the dependent variable at the second wave of measurement (T2) is assumed to be a function of the value of the dependent variable and of the hypothesised independent variable at the first wave of measurement (T1). For example, in terms of hypothesis 9 that predicts that the financial performance of the establishment will affect information disclosure by management, a lagged effect model specification would stipulate that for the 1990-98 period, information disclosure in 1998 is a function of disclosure in 1990 and of financial performance in 1990.

In other words, a lagged effect model essentially posits that financial performance in 1990 (the independent variable at time 1), has an effect on disclosure in 1998 (the dependent variable at time 2), controlling for the effect of disclosure in 1990 (the dependent variable at time 1) on disclosure in 1998. By controlling for the value of the dependent variable at time 1, such a lagged structure provides an effective way of estimating the causal effect from the independent variable at time 1 on the dependent variable at time 2 (Finkel, 1995) and, therefore, of testing for the hypothesised causal links between study variables.

Because of the length of the time lag involved in both the 1990-98 and the 1998-2004 panels, future work could test the study hypotheses using alternative mixed instantaneous and lagged effect estimation models.



These mixed models stipulate that the value of a dependent variable at time 2 is a function of the value of the dependent variable at time 1 and of the value of the independent variable at both time 1 and time 2 (Finkel, 1995). In essence, mixed models of this kind enable one to examine the extent to which the value of a dependent variable at time 2, controlling for its value at time 1, is a function not simply of the value of the independent variable at time 1, but also of any change in the value of the independent variable between the two time periods. This report is restricted to the results of the lagged effect estimation analysis outlined above.

# 5

## Results

### Outcomes of information disclosure

The results on the impact of information disclosure on the climate of employee relations and the financial performance of the establishment (Hypotheses 1 and 2) are reported in Table A4 in Appendix A. Equations 1 and 2 show the results for the 1990-98 panel using ER climate and financial performance, respectively, as the dependent variables in the analysis. Equations 3 and 4 show the parallel set of results for ER climate and financial performance for the 1998-2004 panel. It is worth noting, however, that while establishment size was found to be positively related to the dependent disclosure variable in all the analyses, none of the other controls attained significance in any of the regressions.

As can be seen from equation 1, contrary to hypothesis 1, information disclosure in 1990 was not significantly related to the climate of employee relations in 1998, controlling for ER climate in 1990. Moreover, contrary to hypothesis 1, ER climate in 1990 also failed to show a significant relation to financial performance in 1998, controlling for performance in 1990. In contrast, equation 2 shows that, in line with hypothesis 2, information disclosure in 1990 had a significant positive effect (at the ten per cent level) on establishment financial performance in 1998, controlling for financial performance in 1990. Taken together, these results suggest that ER climate is unlikely to mediate the relationship between disclosure and performance. At the same time, however, they suggest that information disclosure has a direct (lagged) positive effect on subsequent levels of performance. As such, the results for the 1990-98 panel provide support for the direct effect hypothesis (H1), over the mediation one (H2).

Equations 3 and 4 show that the results obtained for the 1998-2004 panel were substantially different in that none of the relevant lagged relationships attained significance in this second time period. In other words, the 1998-2004 panel data failed to provide support to either of our outcome-related hypotheses (H1 and H2), thereby suggesting that, contrary to expectations, information disclosure in this time period did not have a significant (lagged) influence either on the ER climate at the workplace, or on the financial performance of the establishment.

### Antecedents of information disclosure

The results on the antecedents of information disclosure (Hypotheses 3 to 9) are reported in Table A5 in Appendix A. Equation 1 shows the results for the 1990-98 panel, while equation 2 shows the parallel results for the 1998-2004 panel.

For the 1990-98 data, equation 1 shows that three of the seven potential antecedents included in the analysis had a significant impact on information disclosure. Specifically, in line with hypothesis 5, managerial sophistication in 1990 was found to be significantly positively related to information disclosure in 1998, controlling for information disclosure in 1990. In line with hypothesis 7, the existence of joint consultation arrangements in 1990 also had a significant positive effect on information disclosure in 1998, once again controlling for disclosure in 1990. In accordance with the path dependency hypothesis (H9), the level of information disclosure in 1990 was found to have a strong significant positive effect on the level of disclosure in 1998. All the other hypothesised antecedents of disclosure, namely employee relations climate, establishment financial performance, trade union voice, and direct participation arrangements, failed to attain significance in the 1990-98 analysis, thereby failing to provide support for hypotheses 3, 4, 6 and 8.

The non-significant results for ER climate and financial performance are of particular interest, especially when viewed in conjunction with the previous set of results relating to the outcomes of information disclosure. As mentioned earlier, disclosure in 1990 had a significant positive (lagged) effect on financial performance in 1998, controlling for performance in 1990.

The reverse, however, was not the case. In other words, financial performance in 1990 did not have a significant (lagged) effect on information disclosure in 1998, controlling for disclosure in 1990. This unbalanced pattern of cross-lagged effects suggest that, at least in the 1990-98 period, the causal ordering between the two variables is from disclosure to performance rather than the other way around. In other words, the 1990-98 results suggest that it is disclosure that influences performance rather than the reverse and that performance, therefore, is best thought of as an outcome rather than as an antecedent of disclosure.

In contrast, disclosure in 1990, as shown earlier, did not have a significant (lagged) influence on ER climate in 1998, controlling for ER climate in 1990. However, ER climate in 1990 also did not have a significant (lagged) influence on disclosure in 1998, controlling for disclosure in 1990. These non-significant cross-lagged effects suggest that, at least in terms of 1990-98, disclosure and ER climate are not causally related and that climate, therefore, is neither a significant antecedent, nor a significant outcome, of information disclosure.

As equation 2 shows, once again, the antecedent results for the 1998-2004 period are substantially different. In this case, only two of the hypothesised antecedents of disclosure emerged as significant in the analysis. Specifically, information disclosure in 1998 had a strong significant positive impact on disclosure in 2004. This is in line with the path dependency hypothesis (H9) and parallels the results obtained for the 1990-98 period. Unlike in 1990-98, however, the only other

antecedent that attained significance in 1998-2004 was the financial performance variable. In line with hypothesis 4, financial performance in 1998 was significantly positively related (at the ten per cent level) to information disclosure in 2004, controlling for disclosure in 1998. None of the other antecedent hypotheses (H3, H5, H6, H7 and H8) received support in the 1998-2004 data.

In light of the previous results relating to the outcomes of information disclosure for 1998-2004, once again, the antecedent results for ER climate and financial performance in equation 2 are of particular interest. The lack of any significant cross-lagged effects either between disclosure in 1998 and ER climate in 2004, or between climate in 1998 and disclosure in 2004, confirms the 1990-98 results and suggests the absence of any clear causal link between these two variables. In contrast, the pattern of cross-lagged effects between disclosure and financial performance is directly opposite to that found for the 1990-98 period.

Specifically, as can be seen from Tables A4 and A5, the 1998-2004 pattern of cross-lagged effects suggests that, unlike in 1990-98, the causal ordering between the two variables is from performance to disclosure rather than the other way around. Unlike the 1990-98 results, therefore, the 1998-2004 results suggest that it is performance that influences disclosure rather than the reverse. For the second time period, therefore, performance is best thought of as an antecedent rather than as an outcome of disclosure.

### Summary

Overall, the tests of the outcome and antecedent hypotheses presented above produced a rather mixed set of results. Five points stand out in particular.

First, the results for 1990-98 tend, on the whole, to be slightly stronger than those for 1998-2004. By and large, the effects observed for the 1998-2004 panel, whether in relation to outcomes or antecedents, tended to be weaker than those observed for the 1990-98 panel.

Second, our results show that by far the strongest predictor of information disclosure in both time periods is the level of disclosure in the previous period, thereby providing clear support for path dependency arguments in this area.

Third, apart from the level of disclosure in the previous time period, none of the factors that emerged as significant in either the outcome or the antecedent analysis were the same across the two time periods. In other words, our results suggest that both the antecedents and outcomes of information disclosure are different in the two time periods.

Fourth, and contrary to expectations, we found no clear causal link between disclosure and the climate of employee relations at the workplace. Moreover, this applied across both time periods.

Finally, our results show that the causal ordering between disclosure and establishment financial performance varied across the two time periods. In 1990-98 performance was found to have a lagged influence on disclosure, while in 1998-2004 the relationship was reversed and it was disclosure that had a lagged influence on performance.

# 6

## Discussion

Further analysis will be required to interpret these results more fully. In particular, it would be useful to test some less universalistic and more contingent hypotheses, introducing more complex interaction between variables.

For the present, we find that the antecedents of information disclosure and the outcomes differ across the two time periods. The most stable finding is the path dependency one, specifically that the strongest predictor of information disclosure in a given time period is the level of disclosure in the previous period. The aggregate finding, that information disclosure rose between 1990 and 1998 but stabilised between 1998 and 2004, provides context.

The finding on path dependency implies that information disclosure may be part of an overall management employee relations policy, rather than a response to a specific set of circumstances such as financial distress. However, given our previous finding that financial distress is associated with increased disclosure (Peccei *et al.* 2006), there may be important triggers to disclosure followed by ratchet effects sustaining it.

With regards to aggregate trends, it is not clear why the period 1990-8 should be associated with a rise in disclosure; there are no obvious legislative triggers, except the slow and small build-up of legislative requirements for information provision in specific circumstances such as collective redundancies and transfer of undertakings. Nor is it clear why disclosure stagnated between 1998-2004. It is not, given the levels of disclosure shown in Table A1a, a saturation effect and there remains substantial scope for increases in disclosure given a legislative trigger. With only two panels, one cannot say which of the two time periods provides the more curious pattern. Future research needs to address this issue.

The inconsistency of relationships with antecedents and outcomes across the two periods implies disclosure is a complicated phenomenon. In previous work (Peccei *et al.* 2005 and Peccei *et al.* 2006) we have speculated that disclosure of information might be part of very different distributive or integrative bargaining 'games' played between management and employees. Moreover, these games work differently under different sets of representative and participative arrangements. Again, further work on the dynamics of disclosure at establishment level is necessary.

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# Appendix A:

## Supplementary tables

**Table A1a. Information disclosure 1990-2004: Descriptive statistics**

Variable description	1990-1998 panel		1998-2004 panel	
	1990	1998	1998	2004
Provide information on:				
Investment plans	43% (2.8)	59%*** (2.8)	55% (3.6)	51% (3.7)
Financial position of workplace	63% (2.7)	78%*** (2.4)	69% (3.3)	64% (3.5)
Staffing plans	64% (2.7)	73%*** (2.4)	63% (3.6)	64% (3.6)
Disclosure index (average of 3 items)	1.70 (0.06)	2.11*** (0.05)	1.87 (0.08)	1.78 (0.07)
Change in means:				
Investment plans		15.98***		-3.4
Financial position of workplace		14.7***		-5.1
Staffing plans		9.8***		0.70
Index (3 items)		0.41***		-0.09
Change in information provision:				
Increase		45%		28%
Decrease		19%		34%
No change		37%		37%
Correlations:				
Investment plans		0.18***		0.12
Financial position of workplace		0.26***		0.37***
Staffing plans		0.26***		0.24***
Index (3 items)		0.34***		0.37***
Variance (standard error):				
Information disclosure				
Investment plans	2.8	2.8	3.6	3.7
Financial position of workplace	2.7	2.4	3.3	3.5
Staffing plans	2.7	2.4	3.6	3.6
Index	0.06	0.05	0.08	0.07

Source: WERS 1990-1998 and 1998-2004 panel surveys. Base: Workplaces with 25 or more employees for 1990-1998 panel, and with 10 or more employees for the 1998-2004 panel. Figures are weighted and based on responses from at least 818 managers for the 1990-1998 panel and on at least 923 managers for the 1998-2004 panel. Standard errors are in parentheses. The picture of stability in information disclosure over the period from 1998 to 2004 was also observed when the sample was restricted to workplaces with 25 or more employees. \*\*\*indicates difference between the two observations significant at the 1 per cent level; \*\*difference significant at the 5 per cent level; \* difference significant at the 10 per cent level.

**Table A1b. Information disclosure index by workplace size, 1990-2004**

Variable description	1990-1998 panel		1998-2004 panel	
	1990	1998	1998	2004
Workplace size:				
10-24	-	-	1.82 (0.15)	1.55 (0.15)
25-49	1.71 (0.11)	2.13*** (0.10)	1.89 (0.10)	1.87 (0.08)
50-99	1.63 (0.10)	2.02*** (0.10)	1.87 (0.09)	2.02 (0.12)
100-199	1.61 (0.10)	2.20*** (0.09)	1.95 (0.09)	2.03 (0.11)
200-499	1.96 (0.09)	2.07 (0.10)	2.17 (0.08)	1.95 (0.13)
500 or more	2.13 (0.13)	2.25 (0.10)	2.19 (0.11)	2.16 (0.11)

Source: WERS 1990-1998 and 1998-2004 panel surveys. Base: Workplaces with 25 or more employees for 1990-1998 panel, and with 10 or more employees for the 1998-2004 panel. Figures are weighted and based on responses from at least 818 managers for the 1990-1998 panel and on at least 923 managers for the 1998-2004 panel. Workplace size relates to the point of data collection, and so workplaces could move from one size category to another between the first and second points in time \*\*\*indicates difference between the two observations significant at the 1 per cent level; \*\*difference significant at the 5 per cent level; \* difference significant at the 10 per cent level.

**Table A2. Summary of study hypotheses***Outcome-related hypotheses:*

H1: Information disclosure will have an indirect positive effect on establishment financial performance through its positive impact on the climate of employee relations at the workplace.

H2: Information disclosure will have a direct positive effect on establishment financial performance, above and beyond any indirect effect through the climate of employee relations at the workplace.

*Antecedent-related hypotheses:*

H3: Management will be more likely to disclose information in workplaces characterised by a more positive climate of employee relations.

H4: Management will be more likely to disclose information when the financial performance of the establishment is poor.

H5: Management will be more likely to disclose information where its level of sophistication is higher.

H6: Management will be more likely to disclose information where it recognises a trade union for collective bargaining.

H7: Management will be more likely to disclose information where there are joint consultation arrangements in place in the workplace.

H8: Management will be more likely to disclose information where there are direct participation arrangements in place in the workplace.

H9: Management will be more likely to disclose information when disclosure was higher in the previous time period.

**Table A3. Independent and control variables: Descriptive statistics**

Variable description	1990-1998 panel		1998-2004 panel	
	1990	1998	1998	2004
<i>Independent variables:</i>				
Above-average financial performance	60% (3.8)	51%* (3.9)	62% (3.9)	42%*** (4.1)
Above-average climate	53% (2.8)	61%*** (2.6)	92% (2.0)	94% (1.2)
Management sophistication index (average of 3 items)	1.78 (0.07)	1.94* (0.07)	1.54 (0.08)	1.60 (0.07)
Direct participation	63% (2.7)	72% (2.5)	60% (3.7)	71%** (3.3)
Joint consultative committee	34% (2.6)	39% (2.7)	20% (2.2)	23% (2.5)
Union recognition	56% (2.8)	55% (2.8)	37% (3.4)	43%*** (3.5)
<i>Control variables:</i>				
Shocks index (average of 7 items)		1.38 (0.07)		1.46 (0.09)
Single independent establishment	19% (2.3)	20% (2.3)	30% (3.4)	28% (3.5)
Private sector	62% (2.8)	64%** (2.8)	74% (2.8)	76%** (2.7)
Proportion of workforce female	49% (2.0)	49% (2.0)	55% (2.0)	55% (2.1)
Workplace size (employees):				
10-24	-	-	52% (3.5)	42%*** (3.9)
25-49	47% (2.9)	43%* (2.9)	22% (2.4)	28%** (2.9)
50-99	28% (2.3)	30% (2.5)	15% (1.5)	15% (1.8)
100-199	15% (1.4)	15% (1.5)	7% (0.7)	9% (1.4)
200-499	7% (0.7)	11%*** (1.2)	3% (0.4)	4%* (0.6)
500 or more	3% (0.3)	3% (0.4)	1% (0.1)	2%*** (0.2)

Source: WERS 1990-1998 and 1998-2004 panel surveys. Base: Workplaces with 25 or more employees for 1990-1998 panel, and with 10 or more employees for the 1998-2004 panel. Figures are weighted and based on responses from at least 387 managers for the 1990-1998 panel and on at least 737 managers for the 1998-2004 panel. Standard errors in parentheses. The picture of stability in information disclosure over the period from 1998 to 2004 was also observed when the sample was restricted to workplaces with 25 or more employees. \*\*\*indicates difference between the two observations significant at the 1 per cent level; \*\*difference significant at the 5 per cent level; \* difference significant at the 10 per cent level.

**Table A4. Outcomes of information disclosure: Regression results for 1990-1998 and 1998-2004**

Independent variables	Dependent variables			
	1990-1998 panel		1998-2004 panel*	
	1 ER climate 1998	2 Financial performance 1998	3 ER climate 2004	4 Financial performance 2004
Information disclosure 1990	0.022	0.204 <sup>†</sup>		
ER Climate 1990	0.779 <sup>***</sup>	0.033		
Financial Performance 1990	-0.109	0.495 <sup>*</sup>		
Management Sophistication 1990	-0.012	-0.041		
Trade Union Recognition 1990	0.034	-0.354		
Joint Consultation 1990	0.126	0.060		
Direct Participation 1990	-0.033	0.118		
Number of cases	391	338		
Information disclosure 1998			0.105	0.138
ER Climate 1998			0.070	-0.223
Financial Performance 1998			0.012	-0.304
Management Sophistication 1998			-0.084	0.004
Trade Union Recognition 1998			0.159	-0.449 <sup>†</sup>
Joint Consultation 1998			-0.076	0.057
Direct Participation 1998			0.045	-0.084
Number of cases			782	719

Source: WERS 1990-1998 and 1998-2004 panel surveys. Base: Workplaces with 25 or more employees for 1990-1998 panel, and with 10 or more employees for the 1998-2004 panel. Figures are weighted and based on responses from at least 338 managers for the 1990-1998 panel and on at least 719 managers for the 1998-2004 panel. Figures in table are unstandardised beta coefficients. \*\*\* significant at the 0.1 per cent level; \*\* significant at the 1 per cent level; \* significant at the 5 per cent level; + significant at the 10 per cent level.

Note: For ease of presentation, only the unstandardised beta coefficients for the relevant independent variables are shown in the table.

**Table A5. Antecedents of information disclosure: Regression results for 1990-1998 and 1998-2004**

Independent variables	Dependent variables	
	1990-1998 panel	1998-2004 panel
	1 Information Disclosure 1998	2 Information Disclosure 2004
Information disclosure 1990	0.332***	
ER Climate 1990	0.075	
Financial Performance 1990	-0.163	
Management Sophistication 1990	0.261*	
Trade Union Recognition 1990	-0.125	
Joint Consultation 1990	0.453*	
Direct Participation 1990	0.059	
Number of cases	388	
Information disclosure 1998		0.219**
ER Climate 1998		-0.174
Financial Performance 1998		0.266 <sup>†</sup>
Management Sophistication 1998		0.100
Trade Union Recognition 1998		0.094
Joint Consultation 1998		0.091
Direct Participation 1998		0.122
Number of cases		771

Source: WERS 1990-1998 and 1998-2004 panel surveys. Base: Workplaces with 25 or more employees for 1990-1998 panel, and with 10 or more employees for the 1998-2004 panel. Figures are weighted and based on responses from at least 388 managers for the 1990-1998 panel and on at least 771 managers for the 1998-2004 panel. Figures in table are unstandardised beta coefficients. \*\*\* significant at the 0.1 per cent level; \*\* significant at the 1 per cent level; \* significant at the 5 per cent level; <sup>†</sup> significant at the 10 per cent level.

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