

Research Paper

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SME attitudes towards workplace mediation: the role of experience

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Foreword

Acas was fortunate in hosting Dr Paul Latreille as an ESRC Research Fellow during 2009. The focus of Dr Latreille's study was mediation as a mechanism for addressing individualised conflict at work – an issue of considerable interest to Acas in its pursuit of early and effective means for resolving workplace disputes.

This paper is one of a series produced by Dr Latreille as a result of his fellowship. It uses data on the use and experience of mediation in small and medium sized enterprises (SMEs). The SME survey was one element of a small programme of work undertaken jointly with the CIPD. The findings informed a joint Acas/CIPD publication 'Employers Guide to Mediation'. (<http://www.acas.org.uk/index.aspx?articleid=1680>).

Dr Latreille's programme of work on mediation amounts to a significant contribution to the evidence base on this issue. Acas is grateful to him for his work, and to the ESRC and CIPD for their financial contribution to the Research Fellowship.

Keith Mizon,
Director of Individual Dispute Resolution
Acas

Abstract

The issue of workplace mediation is high on the GB policy agenda. To date however, despite growing awareness, organisational experience in GB remains limited and the evidence base accordingly underdeveloped. This paper contributes to the debate by undertaking secondary, quantitative analysis of an Acas Omnibus Poll of 500 SMEs. Two substantive issues are explored: the characteristics associated with previous experience of mediation in resolving workplace conflict; and the extent to which prior knowledge and experience of mediation in this context impact on a range of attitudinal variables. In respect of the former we find firm size to be important, while for the latter the data suggest attitudes are typically more positive among those with experience. This is most notably true in relation to the perceived suitability of mediation for smaller firms and to cost, both of which are crucial drivers of the uptake of mediation among smaller organisations.

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Thanks are also extended to staff in the Research and Evaluation section at Acas for their support, and in particular to Gill Dix for many helpful conversations and perceptive comments on earlier drafts. The paper has also benefited from the insights of participants at the CELMAR PhD conference at the University of Aberdeen and a research seminar at the University of Central Lancashire. All views expressed are those of the authors and do not necessarily reflect those of the Acas Council, the ESRC or CIPD. Any errors of omission or commission are also the authors'.

1. Introduction

Prompted in part by the Gibbons Review (Gibbons, 2007), the use of mediation as a means of resolving workplace disputes is now high on both the research and policy agendas in the UK. In recognition of the potential savings in terms of management time, lower productivity from absence, turnover and stress/health problems, as well as the transactions and other costs to organisations, individuals and the public purse of any resulting claims to Employment Tribunals (Acas/CIPD, 2008), Gibbons sought “to identify options for simplifying and improving all aspects of employment dispute resolution, [and] to make the system work better for employers and employees” (p. 7). Crucially he emphasised the merits of early dispute resolution, and mediation in particular, highlighting the positive experiences in New Zealand and the US.

Although there is growing awareness in the GB employment context following Gibbons, of mediation and its potential benefits, its use to date remains modest. For example, a survey of Small and Medium-Sized Enterprises (SMEs) commissioned by the Advisory, Conciliation and Arbitration Service (Acas) revealed that while 64 per cent had heard of mediation as a means of resolving workplace disputes, just 7 per cent of such firms had used it (Johnston, 2008). Even in the survey underpinning the Chartered Institute of Personnel and Development (CIPD) *Workplace Mediation: How Employers Do It* report, which includes larger organisations, only 43 per cent said they had experience of using mediation to deal with issues affecting individual employees¹. This situation is however, changing rapidly, with the new Acas *Code of Practice on Discipline and Grievance* exhorting employers to consider the option of third party intervention (mediation) in resolving problems.

Using the same SME data as Johnston (2008), the present paper adds to the existing literature by examining two key issues. First, and uniquely (in the GB context at least), we deploy multivariate regression techniques to explore the characteristics associated with previous use of mediation to resolve workplace conflict. Second, while the extant research identifies some common features in relation to the rationale for firms’ use/non-use of workplace mediation, we explore employer attitudes in depth, again using econometric analysis. Crucially, we examine the role of prior knowledge and experience as drivers of views. We contend that a focus on these issues among SMEs constitutes both a novel and important contribution to the debate. Such enterprises are a significant source of employment in the UK, accounting in 2008 for almost half (48.4 per cent) of all employment and approaching three fifths (59.4 per cent) in the private sector (Department for Business, Innovation and Skills, 2009). They are also disproportionately the subject of legalised manifestations of conflict at work in the form of Employment Tribunal claims (Saridakis *et al.*, 2009). Understanding the factors associated with usage of, and views about, workplace mediation is thus crucial to policies aimed at increasing its use and to helping resolve workplace conflict.

The remainder of the paper is organised as follows. Section 2 documents some of the existing evidence on the use of and attitudes to workplace mediation. The data used are described in Section 3, together with some preliminary, largely descriptive data analysis. Section 4 outlines the basic econometric methods deployed, while Section 5 reports the main, regression-based results and discusses the implications of our findings. Finally, Section 6 concludes.

¹ In a survey by law firm Dundas and Wilson of 136 HR professionals at the CIPD conference in March 2008, the corresponding figure was 36 per cent.

2. Existing evidence

One of the few papers that directly considers employer views of workplace mediation is Van Gramberg (2002), which explores the demand for private mediation based on a postal survey of employers in Victoria, Australia. It is important to note that in this context and at the time of Van Gramberg's survey, the Australian Industrial Relations Commission (AIRC) was an independent national tribunal responsible for assisting with the resolution of employment related disputes, primarily through conciliation and arbitration², and thus her research essentially considers the use of private (usually charged-for) ADR/mediation as alternatives to the (free) AIRC state-sponsored/provided processes³. Organisations who had used private mediation and expressed a preference for this compared with AIRC conciliation and arbitration processes (n=59), articulated the benefits of mediation as including being less adversarial, faster and more flexible. This resonates with much of the existing mediation literature, both more generally (see for example, Genn, 1998; Mack, 2003; Wall, *et al.*, 2001; Boulle and Nestic, 2004) and specifically in the employment arena (for example deLeon, 1994; Balc, 2002; Conrad, 1998, and in the union grievance context Feuille, 1992 (cited in Feuille and Kolb, 1994)), where such factors, along with cost savings are regarded as significant (for example, Balc, 2002; Lipskey and Seeber, 2001). Importantly, respondents in Van Gramberg's survey highlighted the control over the dispute that mediation permitted for the employer, who was also able to keep the issues in dispute private and 'in-house'⁴, something closely related to Lipsky and Seeber's (1998) notion of 'control'. Strikingly however, several respondents appeared to consider mediation as "a last resort" (p. 10).

Among those employers in Van Gramberg's sample who had not previously used private mediation, the main reasons given related to a preference for formal AIRC processes (on the grounds of enforcement, procedure, cost, neutrality, mutual acceptability and establishment of precedent); the availability of AIRC ADR; that it was unnecessary due to the adequacy of internal procedures; lack of awareness; and cost. In respect of the last it is noteworthy that "many parties [believed they] could not afford the cost, for example small businesses" (p. 9). Larger employers also indicated a willingness to pay (more) for private mediation, consistent with the idea held in some quarters that mediation is more suited to larger organisations⁵.

² The AIRC thus combined functions that in GB are offered provided separately by Acas and the Tribunal Service. The past tense is used however as the AIRC ceased operation from the end of 2009 with many of its functions, including dispute resolution, being assumed by Fair Work Australia.

³ As Van Gramberg (2005) notes, this is certainly how private ADR came to be seen and was also promoted by the Howard government.

⁴ In GB this is sometimes an important logic for employers choosing to settle Employment Tribunal claims rather than go to a full merits hearing, with agreements often containing confidentiality clauses.

⁵ In the union grievance context in the US, Feuille and Kolb (1994) also discuss issues inhibiting the more widespread use of mediation in organisations. First, they note that in this setting, mediation is typically used as an attempt to avoid the need for subsequent, formal arbitration; to the extent that most disputes are resolved without arbitration the efficiency gains from, and hence incentives to participate in, mediation may be more limited (p. 251). Second, that mediation may be 'fragile'. In particular, unlike arbitration, resolution is not guaranteed; more creative solutions may be difficult to achieve in 'single issue' disputes like grievances where potential for trading issues is absent; parties may be entrenched by the time mediation is tried; only selected instances will be selected for mediation; and in the grievance setting, arbitration may be necessary to motivate concession at mediation, yet simultaneously inhibit its use because it remains the resolution method of last resort.

Although the institutional setting is different in GB, some of the same issues are evident from the CIPD survey referred to above. For example, of those *without* experience of using mediation to resolve workplace disputes, the main reasons for not having used it were a lack of (suitable) problems, expense and not knowing any mediators. Among respondents *with* experience of mediation, cost and lack of understanding of the nature of mediation and trust, as well as issues with senior/line manager buy-in and difficulty in locating mediators⁶ were most frequently cited as barriers to *greater* use. Interestingly, cost was almost twice as frequently cited as an impediment to more extensive use by respondents from the public and voluntary sectors than the private sector, as was employee mistrust of the process. The group with experience were however, typically positive about the process. For example, more than 70 per cent of such respondents agreed or strongly agreed with statements such as "There is a clear business case for the use of mediation", "Mediation improves parties' understanding of each other's position", "Use of mediation shows that organisations are committed to recognising individual dignity" and "Use of mediation has a positive impact on workplace culture". Interestingly, as the report points out, "Attitudes among the smallest organisations, employing fewer than 50 people, were consistently more positive than in larger organisations" (p. 11). The most frequently cited benefit was improved relationships between employees, although reduced stress from using more formal processes, retaining valuable staff, fewer formal grievances and developing the organisational culture around people management and development were also cited by more than half of those with experience of mediation. Strikingly, almost a quarter of those without experience were considering using mediation to resolve workplace disputes.

The issues of suitability and cost for organisations of differing sizes identified in the study by Van Gramberg (2002) above are important, not least since these may constitute a barrier to the wider uptake of mediation. Based on qualitative data, Harris *et al.* (2008) reported relatively low levels of awareness of the use of alternative dispute resolution approaches including mediation in SMEs, but "considerable interest in the possibility of third party assistance in resolving issues where internal agreement could not be reached" (p. 45). Such assistance was perceived as being of particular value "in dealing with sensitive issues such as claims of discrimination, bullying, long-term absence or where there were difficult working relationships". Interestingly, external mediation was regarded by respondents as being more suitable for smaller organisations because of the need for distance from the dispute and hence impartiality/neutrality.

The provision of such external mediation services to small firms (fewer than 50 employees) is the subject of Seargeant (2005), who considers parties' experiences and perceptions in relation to a mediation pilot project undertaken by the British state-funded Acas in 2003 in selected geographical areas/regions. While the project involved both the provision of employment advice as well as mediation services, it is the latter which is of particular relevance here. Some 26 mediations were carried

Asymmetries in the concessions for employer and union may also make mediation in this context less attractive to the former, who may exhibit reluctance if mediation comes to be used as a bargaining chip, especially given its low cost. They also note that mediation may require a level of "trust that may not be present" (p. 255), and can cause tensions between the parties and those they represent compared with arbitration, since concessions may be interpreted as representing a lack of force (i.e. as a sign of weakness).

⁶ The establishment of the Civil Mediation Council with its register of mediation service providers is a welcome development in this regard.

out, with 17 interventions in 16 firms contributing to the evaluation undertaken by in-depth interviews with employers and employees. Of these 17 mediations, 13 were facilitative, of which 11 were successfully resolved; the remaining 4 mediations were directive and were all resolved. Many of them revolved around interpersonal relations and bullying and harassment, precisely the sorts of issues where mediation was identified as being useful by the respondents in Harris *et al.* (2008). Views of mediation among the parties were largely positive, although three employers expressed some hesitation in using mediation again due to issues arising in the current experience. While the pilot provided mediator services free of charge, employers were also “cautiously positive” (p. 39) about whether they would consider mediation in the face of charging for the service. Strikingly, those where the mediation had succeeded contrary to their expectation were “less hesitant about paying for mediation”, suggesting that positive experiences are important drivers of attitudes/future demand.

In the GB context, Johnston (2008) constitutes an important addition to the evidence base using data from an Acas/GfK NOP omnibus poll of small and medium-sized enterprises (SMEs). The treatment there however, while offering a number of interesting insights, is confined to cross-tabular analysis; the present (short) paper instead extends Johnston’s analysis and presents the results of secondary (regression) analysis of certain key facets of these data to examine SME views of mediation as a mechanism for resolving employment conflict. As noted above, on the basis of this source, the adoption of mediation in SMEs is especially low, so understanding the attitudes of employers (both users and non-users of mediation) in this type of firm is likely to offer insights into the factors underpinning this phenomenon and which may therefore help practitioners and policymakers extend its reach.

3. Data

The data used in the present study were commissioned by Acas and collected by GfK NOP by means of a telephone survey of managers in 500 SMEs as “part of a wider research programme being carried out jointly by Acas and the Chartered Institute of Personnel and Development” (Johnston, 2008: 2). Three size classes were selected: micro (fewer than 10 employees); small (10–49 employees); and medium (50–249 employees). As Johnston describes, in order to achieve statistically meaningful numbers of observations in the latter two categories, small and medium enterprises were over-sampled relative to their prevalence in the population of firms, while the converse was true for firms in the smallest size class. A weighting scheme to correct for this disproportionate sampling strategy is contained on the dataset (see Johnston, 2008 for details), and this is applied to all results reported here.

The key features explored in the present analysis are respondents’ views concerning a set of attitudinal statements about mediation. For these a 5-point Likert scale was used, with respondents asked to indicate their agreement or disagreement to a series of statements as set out below (terms in [] indicate the variable name used to identify the statements in subsequent results tables):

Mediation is or sounds like it would be:

- *A good tool for resolving disputes in the workplace [RESOL]*
- *A last resort when there is no other way to resolve a dispute at work [LAST]*
- *An expensive way to resolve disputes [EXPEN]*
- *Only suited to large organisations [LARGE]*

Plus also:

- *Mediation improves line managers' ability to manage conflict [MANAG]*
- *More widespread use of mediation will reduce the volume of claims to an Employment Tribunal [CLAIM]*
- *Mediation produces "win-win" solutions that leave both parties satisfied [SATIS]*

In terms of awareness and use of mediation, as Johnston describes, 64 per cent of all managers in SMEs had heard of mediation as a vehicle for resolving workplace disputes, although only 7 per cent reported that they or someone else in their workplace had experience of using it. A key prediction in this paper is that those with prior experience of mediation might be more favourably disposed towards it than those without direct experience.

The distribution of responses to the attitudinal questions in respect of workplace mediation is given in Johnston (2008, s. 3.4), and is summarised in Table 1 below:

Table 1 Attitudes to mediation

	Variable (column %)						
	RESOL	LAST	EXPEN	LARGE	MANAG	CLAIM	SATIS
Strongly agree [5]	24	36	21	28	23	27	20
Tend to agree [4]	48	32	23	25	32	36	33
Neither agree nor disagree [3]	13	7	16	5	14	12	14
Tend to disagree [2]	6	11	13	21	11	11	14
Strongly disagree [1]	5	11	9	18	10	3	7
Don't know	4	4	18	4	11	11	12
Mean	3.8	3.7	3.4	3.2	3.5	3.2	3.5
Mean experienced	4.4 ^{***}	3.5	2.6 ^{***}	1.9 ^{***}	3.9 ^{**}	3.9	3.3
(not experienced)	(3.8)	(3.8)	(3.5)	(3.3)	(3.5)	(3.8)	(3.5)

Notes: Base – all (500). Means exclude "Don't know" responses. ^{***}, ^{**} and ^{*} denote significant differences between those with experience of mediation and those without at the 1%, 5% and 10% levels respectively.

As can be seen, somewhat mixed attitudes exist. Thus, while more than 70 per cent of respondents agreed that mediation was a good tool for resolving workplace disputes, more than two thirds felt that it was a last resort to be used when all other avenues had been exhausted. Some 55 per cent agreed that it improved line managers' ability to manage conflict with a similar proportion stating that it produced "win-win" solutions and 63 per cent that its wider adoption would lead to a reduction in the number of Employment Tribunal (ET) claims. In contrast, 53 per cent felt that it was only suited to larger organisations while approaching half (44 per cent) agreed that mediation was expensive. Strikingly, almost a fifth of respondents were uncertain about the cost of mediation, likely reflecting a lack of experience (see below). This is an important feature identified by Johnston (2008), who notes that a number of these measures vary according to both awareness and in particular experience of mediation. For example, "Of those that had used mediation, 99 per cent agreed that it is a good tool for resolving workplace disputes... This is significantly different from those that had only heard of mediation (78%) and those that had not even heard of it (56%)". Those with experience of mediation were also more likely than other groups to disagree that it was expensive, less likely to agree that its suitability was primarily limited to larger organisations and more likely to feel it improved line managers' conflict management capacity.

The last two rows of the table show the corresponding means for those with and without prior experience of using mediation to resolve problems in the workplace. On the basis of t-tests of differences in the means between these two groups there exists a significant difference between them on four measures: whether mediation is a good tool for resolving disputes and improves managers' ability to manage conflict are both significantly higher in organisations with previous experience of using mediation, while this group are significantly less likely to see mediation as expensive and suitable only in larger organisations. For these measures, experience thus clearly impacts positively on perceptions of the potential value and suitability of mediation. Interestingly however, and perhaps surprisingly, experienced respondents were only somewhat less likely to see mediation as a last resort, whereas in the accompanying case studies of mediation users, in a wide number of other papers and in the government's rationale for mediation, *early intervention* is generally recognised as being helpful in order to avoid positions becoming entrenched.⁷ It is also perhaps slightly surprising that experienced survey respondents were, albeit not significantly, less inclined to the view that mediation produces satisfying win-win outcomes. In fact, the CIPD *Workplace Mediation Survey* suggests a possible explanation for this phenomenon, in that those who said the last mediation in their organisation was not resolved (either partially or fully) were (subsequently) less favourably inclined towards mediation on a whole range of measures.⁸ Less surprising perhaps, is the absence of significant differences in terms

⁷ In fact, the important concept appears to be that of 'ripeness' (Astor and Chinkin, 2002: 280; Sourdin, 2002: 110-113); as a mediation coordinator in one of the Acas/CIPD case study organisations succinctly expressed it: "... ideally you'd want to capture it early to stop it escalating. But if you capture it too early, people don't see the benefits of going into mediation. And so there's very much a balance."

⁸ Subject to the caveat of small cell sizes, respondents in this group were less likely than those where the last mediated case had been partly or fully resolved to see mediation as effective in resolving individual conflict, less likely to be using a lot more mediation, less likely to see a range of possible benefits (e.g. retaining valuable employees, improving relationships etc.), less likely to say it was suitable in most cases or that there was a business case for its use, less likely to report line managers supported its use and much less likely to say that it supported managers. Interestingly, they were more likely to say they had used it in response

of whether more widespread mediation will reduce the volume of ET claims; many of the issues typically addressed by mediation, such as interpersonal and communication problems, could not be brought as claims.

Correlations of each of the attitudinal variables are presented in Table 2. This reveals a number of interesting associations. In general, and as might be expected, 'favourable' statements (RESOL, MANAG, CLAIM and SATIS) are all positively and significantly correlated. The same is also true for the 'unfavourable' statements, namely that mediation was expensive and suited only for large organisations. These two variables are positively correlated with seeing mediation as a last resort and negatively with seeing it as a good tool for resolving disputes, the last presumably reflecting the fact that respondents are from SMEs rather than large organisations and accordingly have more limited resources. Perhaps more surprising is that seeing mediation as a last resort, which might be thought of as a more equivocal perception, is positively associated with seeing mediation as a good tool, helpful to line managers, reducing the volume of claims and producing 'win-win' outcomes.

In addition to the above questions and information concerning the use(s) made of mediation by those with experience, the data also contain information on a variety of firm and respondent characteristics such as formal ownership status, age and sector of the organisation, and the age and gender of the person completing the survey. Examining whether the associations identified by Johnston are robust to the inclusion of these additional variables which may be associated with prior experience of mediation is clearly important and occupies the remainder of this paper.

Table 2 Correlations of attitudinal variables

	RESOL	LAST	EXPEN	LARGE	MANAG	CLAIM	SATIS
RESOL	1.000 (483)	.204*** (479)	-.172*** (422)	-.329*** (474)	.426*** (453)	.291*** (447)	.392*** (447)
LAST		1.000 (487)	.243*** (427)	.099** (478)	.117** (455)	.159*** (450)	.189*** (450)
EXPEN			1.000 (428)	.383*** (424)	-.075 (411)	.094* (404)	.044 (404)
LARGE				1.000 (485)	-.105** (455)	.023 (450)	-.035 (447)
MANAG					1.000 (458)	.516*** (437)	.405*** (433)
CLAIM						1.000 (452)	.456*** (437)
SATIS							1.000 (452)

Notes: Missing cases excluded pairwise. Data are weighted (unweighted bases in parentheses). ***, ** and * denote significance at 1%, 5% and 10% levels respectively (Spearman's test).

to an actual or threatened ET claim (which they were less likely to feel would be reduced by more widespread adoption of mediation) and were also more likely to have used external mediator. Clearly however, the value of individual experiences can significantly 'colour' perceptions. See Latreille (2010) for further details.

4. Econometric method

The primary focus of this paper is to model the factors determining the use of mediation and the seven (Likert-scale) attitudinal variables documented in the previous section. Conventionally, and on the basis of the assumptions set out in the appendix, which provides a more technical discussion of the methods, these can be estimated using (independent) probit and ordered probit analysis respectively. A potential complicating factor is that including previous use of mediation as an explanatory variable determining attitudes requires the issue of endogeneity be considered. This is also discussed in the appendix, which describes a 'semi-ordered bivariate probit model' taking account of this and documents results based on this alternative estimator. However, to anticipate the results there, we find that with one possible exception, endogeneity is not problematic and the equations may essentially be estimated more efficiently independently, while still providing the 'correct' coefficients.

In terms of the variables included to explain previous use of mediation, these are as follows (definitions and summary information on each of the variables in the regression analysis is contained in Table 3). First, whether or not the firm has experience of mediation is likely to be strongly related both to its size and also its age, the latter proxied by a dummy variable denoting the firm has been in operation for more than 10 years. Sectoral variation might also be anticipated, not least reflecting differences in employment relations practices and climate among industries, so the specification includes a set of (six) industry dummies. Finally, this is augmented by a dummy variable indicating whether the firm uses the internet for its business, the expectation being that those who do are more likely to have used mediation because they may be more 'progressive' in some respects such as areas of communication.

The set of explanatory variables for each of the attitudinal variables is largely the same as for use of mediation. Firm size is again potentially important, most especially those relating to size and cost, where larger firms might perhaps exhibit more positive views. Again sectoral variation might be expected, such that a full set of industry dummies is included once more, together with the web user dummy. In addition to these variables relating to the organisation, the demographics of the respondent may also be important, and in particular age and gender. Two age dummies are included for respondents aged between 35 and 54 inclusive and for those aged 55 and over, the omitted category being under 35. However, unlike use of mediation, the firm age dummy is excluded from the attitudinal equations⁹.

Finally, these variables are completed with the inclusion of dummy variables denoting whether the respondent had previously heard of mediation being used to resolve workplace disputes (AwareMed) and, as noted above, whether mediation had been used in their firm (UsedMed). Both of these are anticipated to be associated

⁹ *A priori*, while it would be expected that age of firm will impact on the probability of having used workplace mediation, it is not clear that a firm that has been in existence for say, 5 years, will necessarily view mediation differently from one that has been around for 20 years. In fact, and anticipating the results below, younger firms are less likely to have used mediation to resolve a workplace dispute. They also reveal no significant differences in attitudes relative to older firms (results not reported but available on request). From a technical perspective this thus appears a suitable candidate and indeed is used for identification purposes in the semi-ordered bivariate probit models presented in the appendix.

with more favourable attitudes towards mediation – i.e. ‘familiarity breeds affection’ to paraphrase Lipsky and Seeber (1998: 156).

Table 3 Definitions and means of explanatory variables

Variable	Definition	Means (y ₁)	Means (y ₂)†
MICRO	Firm employs 1–9 persons (dummy) [ref]	0.858	0.857
SMALL	Firm employs 10–49 persons (dummy)	0.122	0.123
MEDIUM	Firm employs 50–249 persons (dummy)	0.020	0.019
YOUNGF	Firm trading for 10 years or less (dummy)	0.382	
MANUFACT	Sector: manufacturing/production (dummy)	0.117	0.123
RETAIL	Sector: retail or wholesale (dummy)	0.265	0.264
PROF&BUS	Sector: professional/business services (dummy)	0.256	0.252
CATERING	Sector: catering or leisure (dummy)	0.074	0.077
MOTOR/TRANSP	Sector: motor trades or transport (dummy)	0.084	0.079
CONSTRUCT	Sector: construction (dummy)	0.078	0.078
OTHERIND	Sector: other (dummy) [ref]	0.126	0.127
WEB	Firm uses internet in its business (dummy)	0.647	0.652
GENDER	Respondent male (dummy)		0.690
AGE35–	Respondent aged less than 35 (dummy) [ref]		0.023
AGE3554	Respondent aged 35–54 (dummy)		0.565
AGE55+	Respondent aged 55 or over (dummy)		0.317
AwareMed	Heard of mediation in employment context	0.635	0.659
UsedMed (y ₁)	Previously used mediation	0.072	0.072

Notes: All figures weighted to correct for sampling; [ref] denotes reference group.
† Means based on largest estimation samples.

5. Regression results

The results of estimating the probit model for having experience of using mediation to resolve employment disputes are presented in the first column of numbers in Table 4. As is evident, these reveal mediation is more likely to have been used in particular types of organisations. Perhaps most important is the impact of firm size: small and medium sized organisations are (considering marginal effects) 7 and 27 percentage points respectively more likely to have used mediation than micro firms. Experience of mediation is also less likely among those firms in each of the industries relative to the ‘other’ reference category, and is significantly so for those in manufacturing, catering, and motor vehicles and transport. Compared with firm size however, the marginal effects are modest in magnitude, being largest for manufacturing at 6 percentage points. A similar impact, both in size and direction, is evident for firms that have been in operation for less than 10 years; such firms may have less experience of conflict and its damaging effects, and accordingly fewer opportunities or impetus to have used it.

Turning next to the attitudinal equations for each of the measures described previously, these are presented in the remaining columns in Table 4. Each of these

models is statistically significant as a whole with the exception of the final pair: whether greater use of mediation would reduce the number of ET claims (CLAIM) and whether mediation produces win-win solutions (SATIS). However, as can be seen, across the models, only a limited number of variables exert statistically significant effects.

Among those effects which are significant, respondents from the manufacturing sector are for example, more likely to agree that mediation is a good means of resolving workplace disputes, and are also more inclined to agree that mediation improves conflict management by line managers. Interestingly, respondents from firms in the retail and wholesale and also catering and leisure industries are somewhat more likely to consider mediation as being better suited to larger organisations. This less positive set of views in retail and wholesale is further illustrated by the fact that those from this sector are also more likely to consider mediation as a last resort and expensive. Catering/leisure have traditionally been regarded as sectors having a poor employment relations reputation (see for example Lucas, 1996 and Head and Lucas, 2004), so that these views perhaps reflect an underlying approach to people (and conflict) management (in relation to which in hotels, see also Hoque, 1999).

In contrast, respondents from construction, a sector typically characterised by casual labour and correspondingly high worker turnover and low attachment, felt mediation both improved line managers' capacity for dealing with workplace conflict and (weakly in statistical terms) produces mutually beneficial, 'win-win' outcomes. This may reflect the success of mediation in other contexts in this sector, where it is widely used to resolve contractual and other disputes (see for example Gould *et al.*, 2009 and the references cited on p. 3). Strikingly, respondents from this sector were also more inclined, albeit not significantly, to believe that greater use of mediation would reduce the number of claims to ETs, perhaps because such claims are more problematic in this industry where employment relations are more informal (Clarke, 2006) and hence potential exposure to claims more likely (see for example Hooker *et al.*, 2007 and Peters *et al.*, 2010).

Perhaps somewhat surprisingly, firm size fails to impact significantly on most of the attitudinal variables. One exception is that relative to the reference category of micro firms (1–9 employees) respondents from the largest organisations in the survey (MEDIUM) were less likely to consider mediation to be suited only to large organisations. Firms in these size categories were for example, 5 and 11 percentage points respectively more likely to strongly disagree with this statement and 6 and 11 points less likely to strongly agree. It is worth noting that this size effect is independent of the greater probability of having experienced a mediation intervention, which is included as a control variable along with whether the respondent had previously heard of mediation (on which see below). The only other (weakly) significant variation by size is that the largest firms in the sample are less likely to agree that mediation is an expensive means of resolving disputes.

In respect of respondent characteristics, age is essentially found to exert little role across the full set of attitudinal variables, the only weakly significant impact being among 35–54 year olds being less likely to report that mediation will reduce the volume of ET claims. The data also reveal that male respondents are somewhat less favourably disposed towards mediation than their female counterparts on two of the attitudinal variables. First, they are more likely to agree that mediation is expensive,

and second, to disagree that it improves managers' ability to deal with conflict, albeit only weakly for the latter. While not statistically different from zero, the signs for the remaining attitudinal measures are consistent with an interpretation that male respondents' views of mediation are less sanguine than those of females.

Finally, the remaining two variables of interest are knowledge and use of mediation, which, as might perhaps be expected, impact significantly on a number of the attitudinal variables. It is important however, to be clear how these two variables are to be interpreted in the models presented. Because those with experience of mediation must, by definition, have heard of mediation (i.e. have *AwareMed*=1), the coefficient on *AwareMed* effectively measures the impact of knowledge alone (i.e. without experience), while the coefficient on *UsedMed* measures any additional effect arising from experience relative to awareness. For example, those respondents previously aware of mediation are significantly more inclined to agree that it is a good way to resolve disputes at work. Those with experience are more likely still to agree that this is the case. In terms of marginal effects, these are 13 and 23 percentage points respectively for the strongest level of agreement, which, due to the construction of the variables and the non-linear nature of the model means that those with experience are actually around 40 percentage points more likely to strongly agree with the statement relative to those who had not previously heard of mediation.

Those with awareness and experience are also less likely to agree that mediation is appropriate only for larger organisations, implying that knowledge and especially experience may overcome certain (mis-)perceptions in relation to its suitability. However, some caution is required here. The results in the Appendix indicate the use of mediation may be endogenous in this context, and that the independent regression estimates thus overstate the negative impact experience of mediation has on the view that it is only suited to larger organisations; the estimated coefficient on having used mediation is insignificantly different from zero in the semi-ordered bivariate probit model, although awareness remains negative and significant. This suggests beliefs as to whether mediation is suited only to larger organisations are in fact driven primarily by prior awareness rather than usage.

Table 4 Probit estimates of the determinants of having used workplace mediation and ordered probit estimates of attitudes to workplace mediation

	UsedMed	RESOL	LAST	EXPEN	LARGE	MANAG	CLAIM	SATIS
Constant	-1.122*** (0.323)							
YOUNGF	-0.594** (0.249)							
SMALL	0.529*** (0.194)	-0.003 (0.118)	0.069 (0.118)	-0.100 (0.124)	-0.183 (0.113)	-0.043 (0.116)	-0.139 (0.127)	-0.114 (0.118)
MEDIUM	1.249*** (0.221)	-0.049 (0.163)	-0.100 (0.174)	-0.336* (0.182)	-0.378** (0.173)	-0.062 (0.172)	-0.052 (0.202)	0.190 (0.166)
MANUFACT	-1.616*** (0.296)	0.459* (0.249)	0.261 (0.269)	-0.229 (0.258)	0.092 (0.277)	0.569** (0.257)	0.126 (0.281)	0.109 (0.276)
RETAIL	-0.574 (0.358)	-0.039 (0.224)	0.524** (0.218)	0.300* (0.171)	0.419* (0.231)	0.059 (0.220)	-0.027 (0.239)	-0.023 (0.227)
PROF&BUS	-0.20 (0.322)	0.305 (0.228)	-0.065 (0.221)	-0.158 (0.191)	-0.114 (0.229)	0.154 (0.211)	-0.034 (0.252)	0.007 (0.217)
CATERING	-0.845*** (0.287)	-0.180 (0.215)	0.119 (0.250)	0.343 (0.243)	0.860*** (0.256)	0.098 (0.269)	0.296 (0.265)	0.366 (0.226)
MOTOR/TRANSP	-0.985*** (0.327)	0.383 (0.396)	0.412 (0.375)	0.325 (0.371)	0.446 (0.310)	-0.297 (0.334)	-0.087 (0.337)	0.378 (0.354)
CONSTRUCT	-0.330 (0.459)	0.299 (0.266)	-0.183 (0.304)	-0.244 (0.349)	0.029 (0.303)	0.650** (0.270)	0.354 (0.264)	0.462* (0.256)
WEB	0.187 (0.289)	0.107 (0.158)	-0.129 (0.157)	-0.012 (0.161)	-0.094 (0.159)	-0.149 (0.156)	-0.047 (0.158)	-0.241 (0.161)
AGE3554		-0.213 (0.231)	0.027 (0.219)	-0.359* (0.212)	-0.136 (0.228)	-0.212 (0.223)	0.332 (0.237)	0.090 (0.212)
AGE55+		-0.299 (0.253)	0.095 (0.224)	-0.158 (0.225)	-0.098 (0.239)	-0.325 (0.233)	0.198 (0.253)	-0.171 (0.237)
GENDER		-0.211 (0.171)	0.010 (0.160)	0.326** (0.152)	0.055 (0.162)	-0.265 (0.166)	-0.150 (0.159)	-0.071 (0.159)

AwareMed		0.455 ^{***} (0.160)	0.302 ^{**} (0.153)	-0.196 (0.163)	-0.396 ^{**} (0.157)	-0.232 (0.160)	-0.147 (0.159)	-0.016 (0.158)
UsedMed		0.631 ^{***} (0.219)	-0.349 ^{**} (0.177)	-0.640 ^{***} (0.238)	-0.701 ^{***} (0.244)	0.498 ^{**} (0.225)	0.268 (0.334)	-0.103 (0.247)
J1		-1.566 ^{***} (0.367)	-0.974 ^{***} (0.315)	-1.546 ^{***} (0.313)	-1.238 ^{***} (0.327)	-1.791 ^{***} (0.303)	-1.931 ^{***} (0.350)	-1.570 ^{***} (0.313)
J2		-1.118 ^{***} (0.350)	-0.481 (0.313)	-0.868 ^{***} (0.292)	-0.517 [*] (0.313)	-1.247 ^{***} (0.289)	-0.962 ^{***} (0.325)	-0.830 ^{***} (0.303)
J3		-0.523 (0.344)	-0.259 (0.311)	-0.286 (0.287)	-0.393 (0.310)	-0.800 ^{***} (0.287)	-0.472 (0.323)	-0.378 (0.304)
J4		0.929 ^{***} (0.350)	0.677 ^{**} (0.315)	0.503 [*] (0.288)	-0.373 (0.306)	0.214 (0.289)	0.610 (0.322)	0.663 ^{**} (0.307)
Log-likelihood	-109.18	-568.72	-638.63	-611.61	-657.78	-636.79	-585.04	-638.41
No. of observations	496	465	468	410	466	440	436	437

Notes: Standard errors in parentheses. *, ** and *** denote significance at the 10%, 5% and 1% significance level respectively.

Respondents who had previously heard of mediation but whose organisations had not used it were also more likely to report seeing mediation as a last resort, a perception that is not shared by those with experience. In this regard a little knowledge may be a dangerous thing; experience overcomes this preconception that may be an impediment to further uptake. There is some evidence of this in the Acas small firms mediation pilot, where although a number saw mediation as a positive option, others clearly had less confidence in its potential efficacy but saw it:

“... as ‘worth a try’ in situations where nothing else had been successful. In some very difficult situations mediation was seen as a tool which might just ‘unblock’ an intractable stalemate, although little was in practice expected in the way of success.”

(Sergeant, 2005: 20)

A similar pattern is evident with the statement that mediation improves line managers’ ability to deal with conflict: those aware of mediation but without experience are slightly less likely to feel that this is true compared with those without any prior knowledge, whereas experience (more than) offsets this. Again therefore, awareness without experience appears to be associated with certain preconceptions, something that may act as an impediment to the wider use of mediation.

In terms of barriers inhibiting the wider uptake of mediation, perhaps the single most important, especially for smaller firms, concerns cost. It is interesting to see in Table 4 therefore, that while those with awareness of mediation are not significantly less likely to agree that mediation is an expensive way to resolve disputes, those with experience clearly are. This may be because the latter are more aware that “In contrast to the substantial time spent on internal actions aimed at resolving disputes, mediation had involved only very limited amounts of time and effort” (Sergeant, 2005: 37), at least where external mediation is used (something likely to be much more suited for smaller organisations because of the difficulties in ensuring impartiality, neutrality and distance (Sergeant, 2005)).

The notion that experience is key to positive attitudes in respect of mediation is consistent with a number of extant studies. For example, discussing the US Postal Services REDRESS™ programme, Hallberlin (2001) argues that “real supporters are created through actual experience” (p.382), while Van Gramberg (2002) also reports the strongest support for private mediation among those who had used it previously. In Sergeant’s study of SMEs too, despite some reservations

“... there was general acceptance by employers and employees that mediation had the potential to be used in other employment-related disputes and most parties who expressed a view on this were interested in doing so should the circumstances arise again.”

(Sergeant, 2005: 39)

The only exceptions to this view relate to the last two equations reported in Table 4. As noted previously, neither of these two equations is statistically significant as a whole, and as can be seen, almost none of the explanatory variables, including awareness and experience of mediation are significant. In respect of the former this is arguably not surprising: notwithstanding a desire for mediation to reduce the number of ET claims, the issues addressed at mediation are often different from those that are, or could be, the subject of formal grievances, concerning instead issues such as communication difficulties, relationship breakdown, etc. The latter however, is more difficult to

rationalise but may reflect the nature of prior experiences of mediation; in particular, as Latreille (2010) suggests, attitudes may be influenced by whether (the most recent) experience resolved the issues.

6. Conclusions

This paper explores attitudes to workplace mediation among a sample of UK small and medium-sized enterprises, extending the earlier work by Johnston (2008) using the same data. Organisational size is found to be a key driver of the probability of having used mediation in an employment dispute setting; other things being equal, smaller organisations are less likely to have used mediation in such a context. This is perhaps not surprising: smaller organisations are characterised by more informal employment relations practices that may resolve many disputes without the need for such interventions. But where they are needed, smaller firms may be at a disadvantage in terms of experience, skills and administrative and financial resources, not least because their size makes external mediation a more realistic option and even identifying suitable providers may itself be an issue.

Many of the attitudinal variables considered, which relate to the suitability and potential benefits of workplace mediation are strongly correlated, suggesting that survey participants typically hold a broadly consistent set of views on mediation. In the regression work on attitudes, previous knowledge and experience of mediation at the organisation are found to be critical. While more positive attitudes are sometimes reported, *ceteris paribus*, among those organisations where the respondent had heard of mediation, in others awareness appears to carry with it some preconceptions that may inhibit its uptake. Experience of mediation to resolve a previous employment dispute however, is generally found to be associated with more favourable attitudes.

Given the crucial role of experience in driving attitudes, and the particular issues faced by smaller enterprises in using mediation, most notably the impracticality of in-house mediation in terms of ensuring impartiality and confidentiality, policymakers interested in extending its reach will potentially need to consider some imaginative initiatives. The Acas small firm mediation pilot, which was non-charged to participants but is now (in common with private sector providers) a charged-for activity, identified an interest in this area but equally revealed that expense is a concern. For real expansion into SMEs, creative ways need to be sought to provide low or no cost mediation to small firms. Unless such resource can be found (and in the current financial climate with the emphasis on deficit reduction and fiscal tightening this seems unlikely, despite mediation's potential to save money), alternatives such as an SME 'pool' of trained/accredited mediators from local firms who mediate for others in the scheme may have to be considered.

References

- Astor, H. and Chinkin, C. (2002) *Dispute Resolution in Australia*, Sydney: LexisNexis Butterworths.
- Balc, A. (2002) "Making it Work at Work: Mediation's Impact on Employee/Employer Relationships and Mediator Neutrality", *Pepperdine Dispute Resolution Law Journal*, 2: 241–262.
- Boulle, L. and Nestic, M. (2001) *Mediation: Principles, Process, Practice*, London: Butterworths.
- deLeon, L. (1994) "Using Mediation to Resolve Personnel Disputes in a State Bureaucracy", *Negotiation Journal*, 10: 69–86.
- Chartered Institute of Personnel and Development (2008) *Workplace Mediation: How Employers Do It*, London: CIPD.
- Clarke, L. (2006) "Valuing Labour", *Building Research and Information*, 34: 246–256.
- Conrad, D.R. (1998) "Confidentiality Protection in Mediation: Methods and Potential Problems in North Dakota", *North Dakota Law Review*, 74: 44-59.
- Department for Business, Innovation and Skills (2009), "SME Statistics for the UK and Regions", online dataset, URL <<http://stats.bis.gov.uk/ed/sme>>, visited 20/05/2010.
- Feuille, P. (1992) "Why Does Mediation Resolve Grievances?", *Negotiation Journal*, 8: 131–146 (cited in Feuille and Kolb, 1994).
- Feuille, P. and Kolb, D.M. (1994) "Waiting in the Wings: Mediation's Role in Grievance Resolution", *Negotiation Journal*, 10: 249–264.
- Genn, H. (1998) "The Central London County Court Pilot Mediation Scheme: Evaluation Report", report for Department for Constitutional Affairs.
- Gibbons, M. (2007) *Better Dispute Resolution: A Review of Employment Dispute Resolution in Great Britain*, Department of Trade and Industry: London.
- Gould, N., King, C., Hudson-Tyremann, A., Betancourt, J.C., Ceron, P. Lugar, C., Luton, J., Moeckesch, A.K. and Li, Y. (2009) "The Use Of Mediation In Construction Disputes: Summary Report of the Final Results", *mimeo*, King's College London.
- Hallberlin, C.J. (2001) "Transforming Workplace Culture Through Mediation: Lessons Learned From Swimming Upstream", *Hofstra Labor and Employment Law Journal*, 18: 375–383.
- Harris, L., Tuckman, A. and Snook, J. (2008) "Small Firms and Workplace Disputes Resolution", *Acas Research Paper*, No. 01/08.
- Head, J. and Lucas, R. (2004) "Employee Relations in the Non-union Hotel Industry: A Case of 'Determined Opportunism'?", *Personnel Review*, 33: 693 – 710.
- Hooker, H., Usher, T. and Robinson, D. (2007) "Acas Helpline Survey 2007", *Acas Research Paper*, No. 03/07.

- Hoque, K. (1999) "Human Resource Management and Performance in the UK Hotel Industry", *British Journal of Industrial Relations*, 37: 419–443.
- Johnston, T. (2008) "Knowledge and Use of Mediation in SMEs", *Acas Research Paper*, No. 02/08.
- Latreille, P.L. (2010) "Mediating Workplace Conflict: Of Success, Failure and Fragility", *Acas Research Paper*, forthcoming.
- Lipsky, D.B. and Seeber, R.L. (1998) "In Search of Control: Corporate Embrace of ADR", *University of Pennsylvania Journal of Labor and Employment Law*, 1: 133–157.
- Lipsky, D.B. and Seeber, R.L. (2001) "Resolving Workplace Disputes in the United States: The Growth of Alternative Dispute Resolution in Employment Relations", *Alternative Dispute Resolution in Employment*, 2, pp. 37–49.
- Lucas, R. (1996) "Industrial Relations in Hotels and Catering: Neglect and Paradox?", *British Journal of Industrial Relations*, 34: 267–286.
- Mack K. (2003) *Court Referral to ADR: Criteria and Research*, National ADR Advisory Council & Australian Institute of Judicial Administration.
- Peters, M., Seeds, K., Harding, C. and Garnett, E. (2010) "Findings from the Survey of Employment Tribunal Applications 2008", *Department for Business, Innovation & Skills Employment Relations Research Series*, forthcoming.
- Sajaia, Z. (2008) "Maximum Likelihood Estimation of a Bivariate Ordered Probit Model: Implementation and Monte Carlo Simulations", *The Stata Journal*, No. 3, Vol. 2, pp. 311–328
- Saridakis, G., Sen-Gupta, S., Edwards, P. and Storey, D. (2008) "The Impact of Enterprise Size on Employment Tribunal Incidence and Outcomes: Evidence from Britain", *British Journal of Industrial Relations*, 46: 469-499.
- Seargeant, J. (2005) "The Acas Small Firms' Mediation Pilot: Research to Explore Parties' Experiences and Views on the Value of Mediation", *Acas Research Paper*, No. 04/05.
- Sourdin, T. (2002) *Alternative Dispute Resolution*, Sydney: Law Book Company.
- Van Gramberg, B. (2002) "Employer Demand for Mediation", *Victoria University School of Management Working Paper*, No. 10/2002.
- Van Gramberg, B. (2005) *Managing Workplace Conflict: Alternative Dispute Resolution in Australia*, Federation Press: Annandale, NSW.
- Wall, J.A. Jr., Stark, J.B. and Standifer, R.L. (2001) "Mediation: A Current Review and Theory Development", *Journal of Conflict Resolution*, 45: 370-391.

Appendix

In this section we describe in more technical terms the modelling approach and outline a semi-ordered bivariate probit estimator to correctly estimate systems where the dependent variable is ordered and an independent variable is dichotomous and endogenous. In our context there are seven of the latter, each of which is assumed to reflect an unobserved latent variable denoted y_{2m}^* , $m=1,\dots,7$, determined by a (common) vector of independent variables (\mathbf{x}_2) and also by a latent variable (y_1^*) indicating the firm's propensity to having previous experience of using mediation to resolve employment disputes. This latter variable, of interest in its own right, is assumed related to a vector of characteristics \mathbf{x}_1 . The underlying (semi-ordered bivariate probability) model is thus:

$$y_1^* = \mathbf{x}_1' \beta_1 + \varepsilon_1 \quad (\text{A1a})$$

$$y_2^* = \gamma(y_1^*) + \mathbf{x}_2' \beta_2 + \varepsilon_2 \quad (\text{A1b})$$

where β_1 and β_2 are vectors of unknown parameters to be estimated, γ is an unknown scalar to be estimated and ε_1 and ε_2 are two error terms.¹⁰ What is observed for the former however, is a binary realisation y_1 such that:

$$y_1 = \begin{cases} 0 & \text{if } y_1^* \leq 0 \\ 1 & \text{if } y_1^* > 0 \end{cases} \quad (\text{A2})$$

while for the attitudinal variables, if c_k denote $k=1,\dots,4$ unknown 'cut points' or threshold parameters, the observed values will be:

$$y_2 = \begin{cases} 1 & \text{if } y_2^* \leq c_1 \\ 2 & \text{if } c_1 < y_2^* \leq c_2 \\ 3 & \text{if } c_2 < y_2^* \leq c_3 \\ 4 & \text{if } c_3 < y_2^* \leq c_4 \\ 5 & \text{if } y_2^* > c_4 \end{cases} \quad (\text{A3})$$

where the value 1 corresponds to "strongly disagree" and 5 "strongly agree". If the error terms ε_1 and ε_2 are independent, distributed standard normal and satisfy $E(\mathbf{x}_1 \varepsilon_1) = 0$, $E(\mathbf{x}_2 \varepsilon_1) = 0$ and $E(y_1^* \varepsilon_2) = 0$, then as noted in the main text, the above system can be estimated without bias using independent probit and ordered probit analysis respectively.

However, if this assumption is violated so that y_1 is endogenous and thus correlated with the unobservables in y_2 (i.e. $E(y_1^* \varepsilon_2) \neq 0$), then (A1b) cannot be estimated consistently using an ordered probit model. In this case, if we assume the error terms, ε_1 and ε_2 , are distributed bivariate normal with correlation ρ , then the probability that $y_1 = 0$ and $y_2 = 1$ can be expressed as:

¹⁰ For convenience we drop the notational subscript i denoting individuals and also m in the case of y_2 .

$$\begin{aligned}
Pr(y_1 = 0, y_2 = 1) &= Pr(y_1^* \leq 0, y_2^* \leq c_1) \\
&= Pr(\varepsilon_1 \leq -\mathbf{x}_1\beta_1; \zeta[\gamma\mathbf{x}_1\beta_1 + \mathbf{x}_2\beta_2 + \tilde{\varepsilon}_2] \leq c_1\zeta) \\
&= Pr(\varepsilon_1 \leq -\mathbf{x}_1\beta_1; \zeta\tilde{\varepsilon}_2 \leq c_1\zeta - [\gamma\mathbf{x}_1\beta_1 + \mathbf{x}_2\beta_2]\zeta) \\
&= \Phi(-\mathbf{x}_1\beta_1, (c_1 - \gamma\mathbf{x}_1\beta_1 - \mathbf{x}_2\beta_2)\zeta, \tilde{\rho}) \\
&= \Phi_2[-y_1, (c_1 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4a}$$

where Φ is the bivariate standard normal CDF, $\zeta = \frac{1}{\sqrt{1 + 2\gamma\rho + \gamma^2}}$, and $\tilde{\rho} = \zeta(\rho + \gamma)$.¹¹

Likewise:

$$\begin{aligned}
Pr(y_1 = 0, y_2 = 2) &= Pr(y_1^* \leq 0, c_1 < y_2^* \leq c_2) \\
&= Pr(y_1^* \leq 0, y_2^* \leq c_2) - Pr(y_1^* \leq 0, y_2^* \leq c_1) \\
&= \Phi_2[-y_1, (c_2 - y_2)\zeta, \tilde{\rho}] - \Phi_2[-y_1, (c_1 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4b}$$

$$\begin{aligned}
Pr(y_1 = 0, y_2 = 3) &= Pr(y_1^* \leq 0, c_2 < y_2^* \leq c_3) \\
&= Pr(y_1^* \leq 0, y_2^* \leq c_3) - Pr(y_1^* \leq 0, y_2^* \leq c_2) \\
&= \Phi_2[-y_1, (c_3 - y_2)\zeta, \tilde{\rho}] - \Phi_2[-y_1, (c_2 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4c}$$

$$\begin{aligned}
Pr(y_1 = 0, y_2 = 4) &= Pr(y_1^* \leq 0, c_3 < y_2^* \leq c_4) \\
&= Pr(y_1^* \leq 0, y_2^* \leq c_4) - Pr(y_1^* \leq 0, y_2^* \leq c_3) \\
&= \Phi_2[-y_1, (c_4 - y_2)\zeta, \tilde{\rho}] - \Phi_2[-y_1, (c_3 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4d}$$

$$\begin{aligned}
Pr(y_1 = 0, y_2 = 5) &= Pr(y_1^* \leq 0, c_4 < y_2^*) \\
&= Pr(y_1^* \leq 0) - Pr(y_1^* \leq 0, y_2^* \leq c_4) \\
&= \Phi_1(-y_1) - \Phi_2[-y_1, (c_4 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4e}$$

$$\begin{aligned}
Pr(y_1 = 1, y_2 = 1) &= Pr(y_1^* > 0, y_2^* \leq c_1) \\
&= Pr(y_2^* \leq c_1) - Pr(y_1^* \leq 0, y_2^* \leq c_1) \\
&= \Phi_1[(c_1 - y_2)\zeta] - \Phi_2[-y_1, (c_1 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4f}$$

$$\begin{aligned}
Pr(y_1 = 1, y_2 = 2) &= Pr(y_1^* > 0, c_1 < y_2^* \leq c_2) \\
&= Pr(y_2^* \leq c_2) - Pr(y_2^* \leq c_1) - Pr(y_1^* \leq 0, y_2^* \leq c_2) + Pr(y_1^* \leq 0, y_2^* \leq c_1) \\
&= \Phi_1[(c_2 - y_2)\zeta] - \Phi_1[(c_1 - y_2)\zeta] \\
&\quad - \Phi_2[-y_1, (c_2 - y_2)\zeta, \tilde{\rho}] + \Phi_2[-y_1, (c_1 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4g}$$

¹¹ Due to space restrictions we omit the analytical derivation of ζ and $\tilde{\rho}$. This is available upon request along with our Stata code, guidance for interested individuals and simulation results.

$$\begin{aligned}
Pr(y_1 = 1, y_2 = 3) &= Pr(y_1^* > 0, c_2 < y_2^* \leq c_3) \\
&= Pr(y_2^* \leq c_3) - Pr(y_2^* \leq c_2) - Pr(y_1^* \leq 0, y_2^* \leq c_3) + Pr(y_1^* \leq 0, y_2^* \leq c_2) \\
&= \Phi_1[(c_3 - y_2)\zeta] - \Phi_1[(c_2 - y_2)\zeta] \\
&\quad - \Phi_2[-y_1, (c_3 - y_2)\zeta, \tilde{\rho}] + \Phi_2[-y_1, (c_2 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4h}$$

$$\begin{aligned}
Pr(y_1 = 1, y_2 = 4) &= Pr(y_1^* > 0, c_3 < y_2^* \leq c_4) \\
&= Pr(y_2^* \leq c_4) - Pr(y_2^* \leq c_3) - Pr(y_1^* \leq 0, y_2^* \leq c_4) + Pr(y_1^* \leq 0, y_2^* \leq c_3) \\
&= \Phi_1[(c_4 - y_2)\zeta] - \Phi_1[(c_3 - y_2)\zeta] \\
&\quad - \Phi_2[-y_1, (c_4 - y_2)\zeta, \tilde{\rho}] + \Phi_2[-y_1, (c_3 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4i}$$

$$\begin{aligned}
Pr(y_1 = 1, y_2 = 5) &= Pr(y_1^* > 0, c_4 < y_2^*) \\
&= 1 - Pr(y_2^* \leq c_4) - Pr(y_1^* \leq 0) + Pr(y_1^* \leq 0, y_2^* \leq c_4) \\
&= 1 - \Phi_1[(c_4 - y_2)\zeta] - \Phi_1(-y_1) + \Phi_2[-y_1, (c_4 - y_2)\zeta, \tilde{\rho}]
\end{aligned} \tag{A4j}$$

We refer to this specification as a semi-ordered bivariate probit model. Assuming observations are independent we can derive the log-likelihood for the entire sample on N observations by adding up the above partial likelihood functions (A4a) to (A4j):

$$\ln L = \sum_{i=1}^N \sum_{j=0}^{J=1} \sum_{k=1}^{K=5} I(y_1 = j, y_2 = k) \ln Pr(y_1 = j, y_2 = k) \tag{A5}$$

where $I()$ is a binary indicator function. We estimate (A5) using a Stata **ml If** estimator¹² and impose an exclusion restriction on (A2), i.e. the vector \mathbf{x}_1 contains element z_1 which is not present in vector \mathbf{x}_2 . In our case the relevant identifying variable is the firm age dummy as noted in footnote 9, with results set out in Table A1 below (these results are, in common with all other results presented, weighted to correct for the oversampling of larger firms). As can be seen, the coefficients are generally similar to those in Table 4, albeit standard errors are higher in the attitudinal equations, reflecting the use of a simultaneous framework and of ML, in conjunction with modest sample sizes. As noted in footnote 9, the identifying restriction has appropriate properties, leading to some confidence that the instrument identifies the system. One exception to the similarity of coefficient estimates however, is the parameter estimate on UsedMed in the attitudinal equations, reflecting its radically different treatment in the two sets of estimates. However, the estimated correlations (values of ρ) are insignificant with the one exception noted previously in respect of whether mediation is suited only to large organisations (LARGE), suggesting that conventional probit and ordered probits generally provide the 'correct' estimates and are more efficient.

¹² A similar estimator has been written by Sajaia (2008) called `bioprobit` using an `ml d2` estimator.

Table A1 Semi-ordered bivariate probit estimates of the determinants of having used workplace mediation and of attitudes to workplace mediation

	UsedMed	RESOL	UsedMed	LAST	UsedMed	EXPEN	UsedMed	LARGE
Constant	-1.097*** (0.320)		-1.224*** (0.343)		-0.970*** (0.339)		-1.121*** (0.310)	
YOUNGF	-0.605** (0.255)		-0.582** (0.260)		-0.604** (0.266)		-0.675*** (0.249)	
SMALL	0.513** (0.197)	0.005 (0.196)	0.528** (0.197)	0.103 (0.193)	0.472** (0.202)	-0.178 (0.183)	0.526*** (0.195)	-0.338** (0.153)
MEDIUM	1.277*** (0.229)	0.029 (0.405)	1.319*** (0.230)	-0.054 (0.417)	1.254*** (0.239)	-0.580 (0.355)	1.314*** (0.227)	-0.815*** (0.284)
MANUFACT	-1.597*** (0.297)	0.503 (0.496)	-1.602*** (0.294)	0.147 (0.462)	-1.655*** (0.308)	-0.054 (0.473)	-1.551*** (0.300)	0.434 (0.372)
RETAIL	-0.600* (0.358)	-0.053 (0.253)	-0.707* (0.378)	0.496* (0.267)	-0.504 (0.355)	0.375** (0.191)	-0.500 (0.356)	0.508*** (0.233)
PROF&BUS	-0.201 (0.328)	0.293 (0.242)	-0.199 (0.328)	-0.070 (0.231)	-0.164 (0.334)	-0.109 (0.216)	-0.206 (0.324)	-0.017 (0.245)
CATERING	-0.870*** (0.293)	-0.177 (0.312)	-0.830*** (0.290)	0.060 (0.339)	-0.915*** (0.301)	0.465 (0.311)	-0.930*** (0.293)	1.041*** (0.265)
MOTOR/TRANSP	-0.933*** (0.339)	0.388 (0.485)	-0.909*** (0.332)	0.360 (0.450)	-0.978*** (0.351)	0.456 (0.436)	-0.941*** (0.338)	0.657** (0.325)
CONSTRUCT	-0.242 (0.466)	0.286 (0.283)	-0.249 (0.461)	-0.193 (0.305)	-0.236 (0.470)	-0.168 (0.358)	-0.147 (0.443)	0.055 (0.284)
WEB	0.189 (0.287)	-0.214 (0.235)	0.311 (0.302)	0.033 (0.221)	0.112 (0.283)	-0.355* (0.213)	0.198 (0.281)	-0.146 (0.200)
AGE3554		-0.299 (0.260)		0.106 (0.227)		-0.174 (0.218)		-0.133 (0.207)
AGE55+		-0.223 (0.186)		0.018 (0.164)		0.303* (0.162)		0.029 (0.149)
GENDER		0.105 (0.167)		-0.106 (0.188)		-0.025 (0.163)		-0.136 (0.166)

AwareMed	0.456 ^{***} (0.166)	0.303 [*] (0.156)	-0.188 (0.158)	-0.348 ^{**} (0.148)
UsedMed	0.084 (0.269)	-0.112 (0.268)	0.041 (0.251)	0.186 (0.202)
J1	-1.792 ^{***} (0.679)	-0.764 (0.527)	-1.472 ^{***} (0.392)	-1.337 ^{***} (0.343)
J2	-1.336 [*] (0.635)	-0.268 (0.533)	-0.819 ^{**} (0.411)	-0.692 [*] (0.385)
J3	-0.731 (0.583)	-0.043 (0.537)	-0.254 (0.440)	-0.580 (0.393)
J4	0.741 (0.503)	0.901 (0.552)	0.516 (0.496)	0.110 (0.457)
ρ	0.264 (0.273)	-0.058 (0.281)	-0.370 (0.234)	-0.555 ^{***} (0.185)
Log-pseudolikelihood	-671.52	-735.04	-693.02	-762.63
No. of observations	465	468	410	466

Table A1 (cont.) Semi-ordered bivariate probit estimates of the determinants of having used workplace mediation and of attitudes to workplace mediation

	UsedMed	MANAG	UsedMed	CLAIM	UsedMed	SATIS
Constant	-1.019*** (0.330)		-1.028*** (0.334)		-1.037*** (0.325)	
YOUNGF	-0.596** (0.261)		-0.575** (0.261)		-0.609** (0.261)	
SMALL	0.564*** (0.204)	0.014 (0.209)	0.519** (0.205)	-0.197 (0.212)	0.544*** (0.203)	-0.070 (0.210)
MEDIUM	1.302*** (0.234)	0.089 (0.414)	1.324*** (0.234)	-0.169 (0.441)	1.326*** (0.236)	0.284 (0.413)
MANUFACT	-1.536*** (0.305)	0.500 (0.471)	-1.593*** (0.312)	0.296 (0.484)	-1.604*** (0.302)	-0.006 (0.481)
RETAIL	-0.707*** (0.391)	0.007 (0.272)	-0.661* (0.395)	0.086 (0.290)	-0.674* (0.392)	-0.067 (0.278)
PROF&BUS	-0.180 (0.335)	0.124 (0.228)	-0.143 (0.337)	-0.019 (0.263)	-0.151 (0.331)	-0.004 (0.223)
CATERING	-0.762** (0.303)	0.039 (0.364)	-0.815*** (0.304)	0.392 (0.372)	-0.845*** (0.294)	0.298 (0.333)
MOTOR/TRANSP	-0.983*** (0.340)	-0.355 (0.417)	-0.880*** (0.341)	0.005 (0.426)	-0.910*** (0.331)	0.313 (0.420)
CONSTRUCT	-0.252 (0.458)	0.613*** (0.283)	-0.261 (0.466)	0.384 (0.275)	-0.285 (0.464)	0.441 (0.270)
WEB	0.069 (0.290)	-0.214 (0.219)	0.049 (0.276)	0.320 (0.235)	0.096 (0.284)	0.092 (0.212)
AGE3554		-0.317 (0.235)		0.178 (0.253)		-0.160 (0.239)
AGE55+		-0.261 (0.169)		-0.162 (0.159)		-0.062 (0.164)
GENDER		-0.143 (0.161)		-0.054 (0.171)		-0.236 (0.160)

AwareMed	-0.228 (0.160)	-0.140 (0.159)	0.018 (0.158)
UsedMed	0.005 (0.259)	0.137 (0.269)	-0.087 (0.250)
J1	-1.850 ^{***} (0.583)	-2.159 ^{***} (0.533)	-1.435 ^{***} (0.483)
J2	-1.308 ^{**} (0.544)	-1.190 ^{**} (0.503)	-0.693 (0.476)
J3	-0.864 [*] (0.519)	-0.698 (0.498)	-0.241 (0.474)
J4	0.143 (0.470)	0.387 (0.493)	0.801 [*] (0.473)
ρ	0.241 (0.264)	-0.042 (0.270)	0.024 (0.272)
Log-pseudolikelihood	-725.78	-678.04	-725.01
No. of observations	440	436	437

Notes: See notes to Table 4.

