# The Use of Incentive Schemes in the Public and Private Sectors: Evidence from British Establishments

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**Abstract**
This paper investigates the use of incentive schemes in the public and private sectors in Britain, using a large representative cross-sectional survey. We confirm that incentive schemes are far less widespread in the public sector than the private sector. We ask whether this is optimal or whether the public sector is run inefficiently. Our approach exploits a three-dimensional cut through the data, looking across sector, occupation and type of scheme. Our findings support for the importance of measurability and multi-tasking. Our results also suggest that it is difficult to rationalise the low incentivisation of the public sector as optimal.

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## Non-Technical Summary

A recent government initiative set out in the March 1999 White Paper "Modernising Government" encourages the use of performance related pay schemes for public sector employees. The key idea behind this is that linking pay to performance will provide an incentive for the employees to work harder. In many jobs, however, performance related pay may be inappropriate, for example, when the true performance of an employee is difficult to measure. This paper examines the use of incentive pay schemes in British public and private sector workplaces in 1990 in order to contribute to the debate on this policy programme.

We use data from a large scale, representative cross-section of establishments in Britain (the 1990 Workplace Industrial Relations Survey) to compare the types of pay systems used for 8 occupation groups between private manufacturing, private service and public service workplaces. In 1990, we are observing what may be a more natural state of the public sector, that is, before many of the changes to pay systems have been forced through. This dataset also contains a rich set of variables on each workplace which allows us to control for characteristics such as size, union density and workforce composition.

Our findings confirm the widely held belief that incentive pay systems are far less widespread in the public sector than the private sector. Comparing across occupations, we find that:

- The difference between public and private services in the likelihood of their operating an objectively measured PRP scheme is for non-manual workers only; there is no significant difference for manual workers. For merit pay, subjectively assessed bonus schemes however, we find significantly fewer schemes in the public sector for all occupations.

- Non-manual workers, in general, are more likely to be paid merit pay than PRP and more likely than manuals to be paid merit pay. Manual workers are more likely to be paid PRP than merit pay and more likely than non-manuals to be paid PRP.

The latter result supports the theory that PRP is used when measuring output is easy and merit pay is used when it is difficult. The output of manual workers is likely to be easier to measure than that of non-manual workers in general. The first result is more difficult to interpret. That there is no difference in the likelihood of a PRP scheme for manual workers seems reasonable: they perform broadly the same sort of jobs in the public as well as in the private sector. If the difference for non-manual workers, such as managers and professionals, is because their output is more difficult to measure, then we should have observed more merit pay in the public sector to compensate. We actually observe less however, which suggests that there may simply be too few incentive schemes in the public sector. This evidence provides tentative support for the ongoing programme of incentivising public services.

# 1. Introduction

Governments on both sides of the Atlantic are setting about incentivising the public sector. In the US, this is part of Vice-President Gore's programme on "Reinventing Government" (Gore, 1995). In the UK, this process is already quite advanced, but the March 1999 White Paper "Modernising Government" takes it further, highlighting the idea of "taking a more creative approach to financial and other incentives for public service staff" (HMG, 1999).

Is this a good idea? In this paper we do two things to address this question. We first confirm the widely held belief that incentive schemes are far less widespread in the public sector than the private sector. We then move on to ask why. There are two broad possible reasons. First, incentives in the public sector could be *optimally* low. Recent theoretical work[1] now suggests that high-powered incentives may be inappropriate in certain circumstances. These typically include cases where agents' output is hard to measure, where agents have multiple goals, or where agents have to work to multiple principals. Secondly, it may be that the public sector is simply inefficiently run, and inertia or worker power has meant that feasible incentive schemes have not been introduced. Clearly, deciding which of these is closer to the truth has a direct bearing on whether a policy to force incentives on the public sector is a good idea.

We address this problem by investigating the pattern of existence of incentive schemes across establishments in both the public and private sectors in Britain. We investigate whether it matches up with theoretical models for the optimality of schemes, focussing particularly on public/private sector differences. Our approach has the spirit of a difference-in-differences estimator. We use the Workplace Industrial Relations Survey (WIRS) of 1990. This is a representative[2], interview-based survey covering over 2000 establishments in both the public and private sectors. As well as a rich set of control variables, it also contains information on whether the establishment has different types of incentive schemes, including performance related pay (PRP), merit pay, and performance appraisal. Another advantage of this dataset is that managers are asked about the presence of schemes separately for 8 occupational

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[1] See for example, Baker (1992), Holmstrom and Milgrom (1991) and Dixit (1997).

groups. Finally, we are using the 1990 WIRS, rather than the recently available 1998 survey, as this was before the enforced incentivisation of parts of the public sector in Britain. The idea is that 1990 shows the public sector in its "natural" state, allowing us better to analyse the reasons for the lower level of incentivisation.

Existing cross-section evidence on this topic is limited largely to private sector establishments and C.E.O.s. Brown (1990) uses data from the Bureau of Labor Statistics Industry Wage Survey, a large cross-section of US establishments, to examine the determinants of firms' choice of method of pay with respect to firm, worker and job characteristics. Brown's sample, however, consists of 80% manufacturing industries and no data is available to analyse differences in incentive schemes by sector. Drago and Heywood (1995) perform a similar analysis using the Australian Workplace Industrial Relations Survey. Their analysis is explicitly restricted to commercial workplaces in order to investigate the use of profit sharing alongside other incentive schemes. Pendleton (1997) analyses the 1990 UK WIRS for evidence of workplace characteristics associated with financial participation schemes such as profit sharing, Save-As-You-Earn (SAYE), and Employee Share Ownership Plans (ESOPs). Again, the analysis is restricted to commercial workplaces. The literature on incentives in compensation contracts for C.E.O.s is surveyed in Murphy (1999).

Evidence on incentives in the public sector is mainly case study investigations of the effects of incentive schemes. Anderson, Burkhauser and Raymond (1993), Cragg (1997), Courty and Marschke (1997) and Heckman, Smith and Taber (1996) all analyse responses to incentives under the US federal Job Training Partnership Act. The only evidence comparing the existence of incentive schemes between the public and the private sectors is Fernie and Metcalf (1998), who investigate incentive schemes in four establishments, two of which provide public services.

The rest of the paper is organised as follows: the next section sets out the theoretical structure we adopt to guide our investigation and to interpret the results. Section 3 describes the dataset and section 4 sets out the results. Section 5 summarises the results, offers an interpretation of these based on the theory and concludes the paper.

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[2] Details are given below in section 3.

## 2. Theory

In this paper we are asking a slightly different question to the standard principal-agent problem. Instead of analysing the best contract for agents in a particular situation, we are investigating which establishments have introduced some sort of scheme and for which workers. If all establishments operate optimally, the question can be reinterpreted as asking which establishments find incentive schemes optimal. We now briefly review the theoretical issues involved in this decision[3].

### *(a) General Issues*

The choice that has received most theoretical attention is between payment by input and payment by output or, equivalently, between time rates and or piece rates (more generally, PRP). Lazear (1986) presents several models. The first issue is the use of PRP as a mechanism to sort workers of heterogeneous ability into firms. Lazear shows that where workers know their own (fixed) productivity but firms do not and a fixed cost must be paid to measure output, a separating equilibrium occurs in a competitive environment in which high ability workers are employed by firms paying PRP and low ability workers are employed by time rate paying firms. The second theoretical issue is the use of PRP as a means of motivating employees to exert effort. It is often asserted that PRP causes employees to work harder because their pay depends more on their effort than when paid a salary[4]. Lazear (1986) shows that the value of a PRP scheme to a firm, and hence its likelihood, increases with the marginal increment to output owing to the increase in worker effort induced by the PRP scheme and decreases with the cost of measuring output relative to the cost of observing some satisfactory effort level. These then are the initial factors that determine whether an establishment will use a piece rate scheme or not.

An immediate implication of this theory is that workers paid PRP ought to, ceteris paribus, be more productive and receive higher total wages. This is supported by the

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[3] See the recent surveys by Malcolmson (1999) and Prendergast (1999).
[4] Standard rates are not devoid of incentives however, since career concerns cause a worker to exert effort in order to be looked favourably upon for promotions.

available empirical evidence – for example, Pencavel (1977), Seiler(1984) and Lazear (1996).

This framework has been examined empirically. Most predictions concerning associations between establishment characteristics and choice of method of pay rely on assumed correlations with measurement costs. Size of workplace may have a positive influence on the likelihood of incentive pay since larger workplaces can spread the fixed cost of an output measurement scheme over a larger workforce. The cost of monitoring effort is assumed not to benefit from such economies of scale. The evidence lends support to this prediction; see Brown (1990), and Drago and Heywood (1995) for example. The value of resources diverted to monitoring effort input ought to have a negative effect on the likelihood of output based pay since, in the theory, they are thought to be substitutes. We should expect the proportion of supervisors to be negatively correlated with incentive pay. Drago and Heywood (1995) find support for this hypothesis. They find that the proportion of managers is significantly negatively correlated with the likelihood of PRP. It has also been predicted that union density/recognition will have a negative effect on the likelihood of incentive pay (Freeman, 1982). Unions may desire standard rates to prevent arbitrariness on behalf of management and to instil greater political solidarity. Brown (1990) finds support for this hypothesis but Drago and Heywood (1995) and Pendleton (1997) find no significant correlation.

Goldin (1986) argues that the proportion of women in the workforce is likely to influence the choice of method of pay. Career concerns can create incentives under standard rates for employees with long expected attachments to the workforce yet women generally have shorter tenures and hence career concerns may not provide sufficient incentive. Goldin finds support for this prediction and as does Brown (1990). A related argument is that the proportion of part-time employees in the workforce has a positive influence on the likelihood of PRP in an establishment. Full-time employees are generally more likely to be motivated by career concerns and hence are predicted to be less likely to have PRP.

### (b) Objective performance measures versus subjective performance evaluation

The above theory has restricted attention to associations between general establishment characteristics and method of pay. A more rigorous examination of this issue has led to further predictions about the sorts of occupation we should expect to be paid by PRP. Baker (1992) and Holmstrom and Milgrom (1991) both emphasise the distinction between output ($y$) and the agent's measured performance ($p$). An agent's output is, in practice, often extremely difficult to verify even when the production technology directly maps his effort ($a$) into output. The verifiable output measure ($p$) may include noise. In Baker's model, agents bias their effort towards those actions that increase $p$ away from those directed towards $y$. A good performance measure is one where there is a high correlation between $dp/da$ and $dy/da$. PRP is more likely in such cases.

Holmstrom and Milgrom (1991) introduce the concept of "multi-tasking", that is, when agents are required to allocate their efforts between tasks[5]. A model is introduced describing how the subset of tasks performed within an individual job and the method of pay for that job, are jointly determined. It is predicted that the subsets of tasks will be grouped around the costs of measuring and rewarding performance. Some workers will perform a set of easy to measure tasks and will be paid based on measured performance. Others will perform a set of difficult to measure tasks and will receive a fixed wage. This prediction is based on the idea that mixing easy and difficult to measure tasks gives workers an incentive to substitute effort away from difficult to easy.

These two arguments both highlight the dangers in certain circumstances of tying workers' pay closely to objective measures of their performance. The response to this is to argue that instead firms should use subjective performance evaluation. Prendergast (1999) cites the advantages of "… subjective measures, where pay is at the discretion of the impressions of a superior. The attraction of such means of payment is that they offer a more holistic view of performance; the agent can be rewarded for a particular activity only if that activity was warranted at the time." (Prendergast, 1999, p. 29). Thus we might expect to see pay based on subjective

appraisal, or merit pay, in establishments where the issue of effort misallocation or measurement problems are important.

However, pay based on subjective performance evaluation also has its problems; Prendergast highlights three. First, being non-verifiable, subjective evaluation is at risk of falsification by the superior. This is likely to be particularly a problem in cases where the extra pay associated with a good report comes directly from the assessor's budget. Gibbons (1998) argues that there is a role for 'relational' contracts here in a repeated-game setting between worker and assessor. The implicit contract of a fair report for hard work is supported by both parties' concern for their reputations. This allows relational contracts to be based on subjective assessments. Another response to this problem is to have both an objective element to pay setting and subjective bonuses. Baker, Gibbons and Murphy (1994) argue that the advantage of this is that "The relational contract can reduce the distortionary incentives that would be created by the formal [i.e. objective] contract on its own, while the formal contract can reduce the size of the relational-contract bonus that the firm would need to offer if it used only a relational contract." (Gibbons, 1998, p., 123).

Second, there is 'centrality bias' or ratings compression. Supervisors are often reluctant to fully distinguish good and bad workers from average workers. Thus the incentives provided by the system are blunted. Third, rent-seeking activities are more likely with subjective assessment[6]. This includes workers spending time on unproductive but high-profile activities, and losses due to the flow of false information around the organisation. It seems uncontroversial that workers subject to such subjective assessments way well spend time currying favour with their supervisors. There is also evidence that supports this idea, see Bjerke et al (1987).

There is one final theoretical issue that relates particularly to incentives in the public sector. This is the idea that agents in the public sector are dealing with multiple principals (Dixit, 1997) and/or have unclear missions (Wilson, 1989; Dewatripont, Jewitt and Tirole, 1999). Dixit argues that the almost defining characteristic of public organisations is that "they are answerable to several different constituencies with different objectives. In technical terms they are "common agencies" with several "principals" " (Dixit, 1997, p. 378). The outcome of an agent working for different

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[5] See also Williamson (1985) and Tirole (1994)
[6] Theoretical work on this includes Holmstrom (1982), Milgrom (1988) and Tirole (1992).

principals is that she will face several incentive structures. The result of this is that because the incentives may offset each other, her overall incentives are too weak. What this implies for our analysis depends on how the government reacts to this. The implication of Wilson's (1989) discussion is that governments should re-organise their bureaucracies to focus missions better, and to reduce the degree of competing signals reaching the workers. Whether, having done that, it is then optimal to use incentive schemes is unclear. It seems possible that it may choose to set an objective or subjective incentive scheme or neither based on the other factors listed above.

### (c) Type of PRP: Individual or group-based

Most jobs require co-operation with colleagues at some level. The benefits of working as a team over individual production are often extremely large and it may be difficult to isolate and reward the output of an individual in such production settings. Standard economic theory tells us, however, that group based incentive schemes including profit sharing and team bonuses may have little effect on individual performance because of the incentive for each worker to "free ride" on his colleagues' efforts. The larger is the size of the group, the more incentive there is to free ride. The fact that many establishments do operate group PRP schemes, however, suggests that they do provide a significant incentive for employees (see Drago and Heywood, 1995). Kandel and Lazear (1992) investigate some alternative ways in which this problem may be resolved in actual team production settings by means of peer pressure.

Peer pressure translates into incentives by punishing workers who deviate from what is expected of them by guilt and/or shame. When team workers are able to monitor each others effort more easily than a third party, the firm may offer a group PRP contract which induces team members to apply peer pressure or which induces feelings of guilt when workers put in too little effort. Kandel and Lazear hypothesise that profit sharing creates empathy towards those who receive the residual profit. Workers more readily empathise with other workers than with faceless shareholders. Further, the more empathy there is towards the joint beneficiaries of one's effort, the greater is worker motivation.

Using cross-section establishment data drawn from the Australian Workplace Industrial Relations Survey, Drago and Heywood (1995) regress the likelihood of

PRP schemes based on different group sizes on establishment characteristics. These schemes range in scope from individual to firm level PRP appraisal. Total employment is found to have a significant[7] positive influence on group and higher than workplace level PRP. Employee participation in the form of quality circles is found to have a significant influence on higher than workplace level PRP schemes. The number of casual workers as a proportion of the workforce has a significant negative influence on the incidence of group PRP and profit sharing. The proportion of managers promoted from within the organisation is positively correlated with group PRP. Manufacturing industries are less likely to have group PRP and public sector establishments are significantly less likely to have group and workplace level PRP schemes. Encinosa, Gaynor and Rebitzer (1997) construct a model of the extent of PRP in compensation contracts that includes group norms. This model is tested on medical group practices and it is found, as predicted, that the size of the group has a significant negative influence on the probability of compensation being equally distributed across group members.

### *(d) Empirical approach*

We have two main goals in this paper. The first is simply to establish the facts on the prevalence of incentive schemes through establishments in Britain in 1990. We focus particularly on the public/private sector divide. Second, we examine whether the relative lack of such schemes in the public sector reflects optimising decisions or simple inefficiency. The argument for saying that it is optimal relies on the theoretical structure set out above. The argument for inefficiency may be driven by the power and influence of public sector workers to block such schemes; or by the argument that the public service ethos[8] is so strong that further incentivisation is not required.

So the approach is to control for other differences between plants to get at core public/private differences. Such other differences include differences in size, and in the nature of the job. These matter for reasons of the ability to measure output or input, the possibility of cheap supervision, the relative importance of group or

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[7] Significance is attributed for $p \leq .05$
[8] This of course raises the 'multiple principal' problem – serving the most obvious 'public' (ie an organisation's client group) is clearly not the only task public servants are meant to accomplish. They are meant to do this efficiently and in line with certain criteria.

individual working, and the scope for multi-tasking (for two contrasting outcomes, see Lazear, 1996, and Freeman and Kleiner, 1998). We argue that controlling for broad industry group and occupational group goes some way to fixing these variables. We also have other controls relating to the size of the establishment and the nature of the workforce.

Our priors on the technology and organisation of production are as follows. Clearly, these are typically very different between manufacturing and services. Generally speaking (obviously there are exceptions) output is more easily measurable in manufacturing – the quality of output is more measurable. Input measurability may vary within each sector. The feasibility of team working (in the sense of something being really measurable only at a team level) is not clear, though is perhaps more common in manufacturing. Some services are produced individually (haircuts, case load dealt with), others are produced by teams (putting together proposals, design). It seems reasonable to suppose that the technology of public sector service delivery is quite similar to private service delivery, and that both of these may be rather different from the technology of manufacturing.

Our approach relies on occupational group as a way of controlling for most of the differences between the nature of jobs. In spirit at least, our empirical approach is a difference-in-difference estimator, in that we look for differences between occupational groups between the public and private sectors. To interpret those differences in the light of the theory, we propose the following structure:

***IF measurement and multi-tasking is the main issue in using incentive schemes or not, and ownership is irrelevant:***

We would expect schemes to be as common in both private and public sectors, *within* an occupation;

***IF the issues around multiple principals in the public sector are important for 'decision-makers', and governments respond to this by avoiding incentive schemes; otherwise ownership is irrelevant:***

We would expect schemes to be as common in both private and public sectors for non-decision makers (chiefly manual workers), but less common for decision-makers among non-manuals;

***IF the public sector is under-incentivised because it is inefficient:***

We would expect to see a difference across the public/private divide for all occupations. If the inefficiency arises in part from worker resistance, we may see less of a difference for groups of workers with less power or influence.

These are the hypotheses we will investigate below. First, we describe the dataset.

## 3. Data

The data used in our analysis are drawn from the 1990 Workplace Industrial Relations Survey (WIRS)[9]. This is a large, representative interview-based survey of establishments[10] – defined as "[a place] of employment at a single address or site." The survey covers 2061 establishments. To be included in the survey, an establishment had to have at least 25 employees both at the time the sample was drawn and at the time of interview. The latest available Census of Employment (1987) was used as the sampling frame. Thus the sample generalises to the population of continuing establishments in Britain with at least 25 employees[11]. Because most establishments are small but large establishments account for most employment, large establishments are over-sampled. Weights are provided to account for this and we use these below to produce tabulations that are representative (See Millward et al.(1992) for full details of the survey and the weighting procedure).

Unusually for studies of performance-related pay, our survey covers the public sector as well as the private sector. The public sector workplaces that we have data on include hospitals, schools, police stations, sports and leisure centres, social welfare offices, local and national government offices and the like. A comparison between public and private sectors is a key feature of our analysis.

The survey consists of personal interviews with a senior manager (dealing specifically with employee relations, personnel matters etc.), a financial manager, and a worker representative. Our data is mainly drawn from the management questionnaire. The main areas covered in the survey include basic establishment data such as size and

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[9] The survey is sponsored by the Department of Employment, the Policy Studies Institute, the Economic and Social Research Council and the Arbitration, Conciliation and Advisory Service.
[10] We use 'establishment' and 'workpalce' inter-changeably.
[11] The only significant industrial exclusions are agriculture and mining.

sector, plus a rich set of variables covering many aspects of industrial relations, organisation and payment methods.

A number of variables are available to investigate the existence and nature of different compensation structures across establishments. We know, for each establishment, which occupation groups have performance-related pay (PRP) and whether this is based on individual, group and/or establishment level performance. Similarly, we know which occupations receive merit pay (MP). There are 8 occupational groups: unskilled, semi-skilled, skilled manual, supervisor, clerical/secretarial, junior technical/professional, senior technical/professional and manager. The following question is put for each occupational group as long as there are more than 5 employees of that type in the establishment:

> *"Are any of the following group paid by results?"*

If yes, then it is also asked:

> *"Are they paid by results as individuals, members of a group or on an establishment or organisation basis?"*

The guidance on "payment by results" is: *"Payment by results includes any method of payment where the pay varies according to the amount done or its value rather than just the number of hours worked. It includes any establishment/plant or organisation productivity or performance bonus or commission"*.

For merit pay, the question is:

> *"Do any employees in these groups receive merit pay or pay related to the assessment of individual performance?"*

The WIRS90 Interviewer Handbook[12] contains the following guidance note on merit pay, K3: "This question is about <u>subjectively assessed</u> additional pay, in contrast to K2 [payment by results], where the results have some objective indicator." The implication of this is that answers to the questions on PRP involve schemes based on objective measurement while merit pay involves subjective assessment.

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[12] We are very grateful to Neil Millward for supplying this reference.

We also know a little about the use of performance appraisal in establishments. Managers are asked whether clerical workers or manual workers form the bigger group in their workplace, and then asked to answer the following question for whichever of the two is the bigger group:

> *"I'd like to ask you about performance appraisal systems, by which I mean individual written assessments produced periodically by management or supervisors. Do you have such a system here for [the larger of clericals or manuals] employees?"*

If yes, then it is also asked:

> *"Are these performance appraisals for [the larger of clericals or manuals] employees used to assess any of the following: Suitability for transfer up and down between grades; Pay increases/decreases within the same grade; Training needs; Some other purpose?"*

We think of the first of these (performance appraisal for promotion) and the second (performance appraisal for pay revision) as potentially performing the same function as merit pay. Unfortunately, however, the status of these questions is different from the previous two questions as the latter are asked for all occupational groups and the former for just the larger of clerical workers or manuals.

We seek to explore the ways in which establishment characteristics are associated with different distributions of the answers to these questions. Basic characteristics include the size of the establishment and its industry (down to the 4 digit Standard Industrial Classification (SIC 1980) level). We use the composition of the workforce in several dimensions: the proportion working full-time, the proportion of women, the proportion manual, the proportion skilled, and the complete employment distribution over the aforementioned 8 occupation categories. In terms of organisational issues, we know whether the establishment is in the public or private sector, whether it is a head office[13] or other administrative office and whether it is the only establishment within the firm or part of a larger organisation. We also have measures of union density.

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[13] We allocate head offices along the same sector lines as the rest of the establishments – private manufacturing, private sevices and public services (see below). The distribution of heasd offices is not the same as that of workplaces as a whole – there are far fewer head offices in manufacturing than in the other two sectors. But if we split head offices out as a separate category, our results are qualitatively unchanged.

We chose to categorise organisations into three main groups: private manufacturing, private services[14], and public services. This leaves out public manufacturing, of which there is very little (7 establishments). Further analysis is also conducted at the 4-digit industrial level.

Some details of the sample are given in Table 1. This shows the standard size distribution of establishments, with about half having between 25 and 49 employees, and only about 2.5% having more than 500. Private services tends to have fewer large establishments than manufacturing or public services, with 5.8% over 200 employees compared to 14.5% and 11.4% respectively in the other two. The lower part of the table provides the number of observations with non-missing information on PRP and on the observations with this information by occupation. There appear to be enough data-points to allow analysis by occupation within our three sectors.

Table 2 gives a detailed breakdown of the occupational structure in the three sectors. Unsurprisingly, there is a substantial difference between manufacturing (74% manual workers, 26% non-manual workers) and the service sectors, and some difference between private and public services (private services: 50% and 49% respectively, and public services: 42% and 57% respectively). The big differences are in the employment of professional and technical staff (33% in public services, 18% in private services and 8% in manufacturing), balanced by differences in skilled manual labour (15% in public services, 27% in private services and 48% in manufacturing). However, most establishments (83%) in the public services have more than 20 unskilled manual workers and about 40% have more than 20 skilled manual workers.

Though most managers did answer the question about PRP (1676/2054), the question of a biased sub-sample still arises. We address this in an Appendix table by comparing the characteristics of the complete (and representative) sample of establishments with those of the sample available for analysis on PRP. The differences in fact appear minor, though the analysis sample contains slightly bigger workplaces, with slightly more manual workers, more full-time workers, and more male workers.

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[14] We included construction and energy in services. Our core results were unchanged if we simply omitted these establishments.

## 4. Results

In this section we provide three main sets of results. First, we investigate the prevalence of performance-related pay, merit pay and performance appraisal in general. We focus in particular on the distinction between the public and private sectors. Second, we compare the incidence of performance-related pay and merit pay by occupation, again focussing on any differences between public and private service sectors. Third, we confirm our findings in a multivariate setting. We provide our interpretation of the results in the following section.

### (a) Variable pay in general

Table 3 provides the overall figures for the sample. We report the percentages with different sorts of variable pay schemes relative to the base for that specific question, rather than selecting a sub-set with non-missings for all variables. Thus PRP and merit pay bases exclude only establishments where answer to a relevant question is missing for every occupation. The performance appraisal base includes only those establishments with more than 5 manual workers and more than 5 non-manual workers (full or part-time), and who answered the performance appraisal question[15].

The base for the final row, counting the establishments with any sort of variable pay scheme includes all establishments with at least one non-missing answer. The PRP and merit pay figures relate to the existence of a scheme for any occupation.

Over half of establishments in Britain in 1990 operated some form of variable pay scheme for at least some of its workers. Two thirds of private sector establishments did. Just over a third of establishments have some form of direct PRP for at least some workers. About 40% of establishments have merit pay. Whether these are the same third or a non-overlapping group, we discuss below. Explicit performance appraisal

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[15] This seems the most natural way to proceed but there are clearly other options. If we restrict the base to be all establishments with non-missing answers for both PRP and merit pay, we find 44% of establishments have PRP, 41% have merit pay and 61% have one or the other of these. PRP is found in 60% of private manufacturing plants, 44% of private services establishments and 28% of public service establishments. The numbers for merit pay are 43%, 51% and 23% respectively. Comparing these to Table 3, we see that the conclusions are not changed dramatically either qualitatively or quantitatively.

schemes appear to be rarer, though recall the narrower occupational base for this question described above.

Comparing across the two private sector industries in table 3, the two sectors are about equally likely to have some form of incentive scheme: 71% in manufacturing, 65% in services.  But they adopt rather different approaches to this: manufacturing is much more likely to have PRP, and service-sector establishment more likely to have MP and PA. This may arise from a number of reasons, but is consistent with the idea that more manufacturing workers have easily measurable outputs or less scope for multi-tasking than do service workers. The detail of the types of PRP is possibly revealing about the *level* at which output is measurable. While individual-based PRP schemes are the most common, some 20% of manufacturing establishments have group-based schemes (as do 11% of private service establishments).

Comparing across the public and private services, we see that all these forms of incentive schemes are less common in the public services. The difference is particularly marked in performance appraisal. We return to this as the focus of our analysis below.

The size of the establishment is likely to be correlated with the presence of incentive schemes. Therefore in Table 4 we disaggregate by sector and size. Looking first at PRP schemes in private manufacturing, perhaps surprisingly, the smallest group has the highest likelihood of PRP; thereafter, there is a hump-shaped pattern with the chance decreasing in the very largest workplaces. In private and public services, we find that large establishments are more likely to have PRP schemes; while PRP schemes are less prevalent for all size bands in the public sector than the private, the difference is least for big workplaces. Nevertheless, even among large public sector workplaces, less than half use any form of PRP at all.

The incidence of merit pay shows a much stronger gradient with size, with only 25% of establishments with under 50 employees having merit pay schemes, compared to over 75% among the largest. This pattern is repeated in each sector; throughout the size range merit pay is less frequent in public sector services than private sector services. We also see that merit pay is less common in private manufacturing than in private services. Turning to performance appraisal for pay revision, this is also more

common for larger establishments in the private sector. Less than 2% of public sector establishments with less than 50 employees use a performance appraisal system for pay revision: this accounts for some 70% of public sector establishments[16].

Before moving on to disaggregate by occupation, we look at the pattern across occupations within workplaces. Table 5 maps the co-existence of different types of incentive schemes across workplaces, and also the existence of PRP and merit pay for different occupational groups.

Table 5a shows that there is some overlap between incentive schemes. About half of establishments with different forms of subjective assessment inventive schemes also have objective PRP schemes. Similarly, about 55% of establishments with PRP schemes also have merit pay, and around 20% use performance appraisal. So a number of workplaces rely on one type of incentive scheme, while others use more than one type. Table 5b shows that this argument holds true looking within occupations. Many establishments have both objective and subjective schemes for any one occupation.

Turning to table 5c, we see that establishments where at least some manual workers have PRP, about half of establishments with non-missing responses do not have PRP for non-manuals. But in workplaces where some non-manual workers do, over half also have schemes for manuals. Among establishments where there were at least 5 managers, of those with PRP for any group of non-managers, over half also have schemes for managers. The same pattern is repeated for merit pay.

This shows that it is *not* the case that there are a set of establishments with incentive schemes, and they have these schemes for all workers, and another set with no schemes for any workers. It also shows that it is not the case that almost all establishments with incentive schemes only use one type of scheme for any given occupation.

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[16] Note that the slightly different basis for the question on performance appraisal means that statements relating to this variable need to be interpreted carefully.

(b) Variable pay by occupation

Our dataset allows us to disaggregate responses on two types of incentive scheme (PRP and merit pay) by occupation. This is useful because this allows us to compare different groups of people doing different tasks in the same organisation. The nature of the task matters in that this is a basis for the optimality of using some form of incentive scheme. The degree of measurability, the scope for multi-tasking, the importance of multiple principals and goals etc., all arguably differ considerably between say skilled manual workers, professionals, clerical workers and managers. We therefore exploit this variation to gain some handle on the distinct nature of incentive schemes in the public sector.

Table 6 provides an overview of the prevalence of PRP schemes for the eight different occupational groups. In general manual occupations are more likely to have PRP than non-manual occupations. The groups for which most establishments provide some form of PRP are the semi- and skilled manuals[17]. Supervisors are least likely to be covered. Only about a fifth of workplaces use PRP for non-managerial white collars. Around a third of establishments have PRP schemes for managers. This may seem surprising in that such schemes include establishment-level schemes. But the term managers includes all managers, not just the CEO. Merit pay is much more common for non-manual workers than PRP. In almost half of establishments managers have some form of subjective appraisal. Professionals also are more likely to have subjective appraisal than objective PRP. Overall, the pattern is clear: manual workers are more likely to have PRP than are non-manuals, and they are more likely to have PRP than they are to have merit pay; non-manuals are more likely to have merit pay than manuals are, and they are more likely to have merit pay than they are to have PRP. This seems consistent with the idea that the difficulties associated with PRP apply more to non-manual workers by and large than they do to manuals.

We now further disaggregate by sector and occupation – see Table 7. Comparing private services and private manufacturing first, we see that occupation by

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[17] We have to be careful how to state this: because we do not know what proportion of workers in an occupational group are covered by the scheme, we cannot necessarily make the statement that "skilled workers are most likely to be covered by PRP". It is possible for example, if unlikely, that if few

occupation, there is little difference in the incidence of PRP for non-manuals; among manuals it is somewhat more common in manufacturing (it is this difference that explains the large overall difference in Table 3). Looking at merit pay, again the similarities are more apparent than the differences: apart, from skilled manuals, clerical workers and managers there is almost no difference in the incidence of merit pay between sectors.

Comparing public and private services, for manual workers, the likelihood of PRP is about the same: for example, for skilled manuals, 35% in private sector, 40% in public sector. This is an interesting and perhaps surprising result. In itself it suggests that the ownership of an establishment where manual workers work does not affect the chances that they are offered a PRP system. For non-manuals, however, there is a huge difference: 28% for technical and professional occupations in private sector and 7% in public sector.

However, turning to the facts on merit pay, we see that this is less likely for all occupations in the public service sector than in the private services sector. But the difference is most marked for professionals. If PRP is optimally not appropriate for public sector professionals, we might expect more subjective assessment here. In fact, far from being more common, merit pay for such people is much rarer in the public services than the private services.

To sum up this argument: for professionals, about a third of private sector establishments have PRP and about half of private sector establishments have merit pay based on subjective performance assessment. For the public sector these numbers are around 10% and 20%.

We can finally in this section examine in detail a few 4-digit industries and compare the incidence of incentive schemes across the public/private divide by occupation. Table 8 provides some details. In the private sector, the industries with reasonable number of establishments include research and development, banking and finance, insurance and business services. The picture for these establishments is that the use of some sort of incentive scheme is pervasive. This is typically done through merit pay, though in the insurance industry PRP is more common (possibly due to sales

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skilled workers were involved in workplaces which did have schemes for them, and all unskilled

activities). In <u>all</u> of the 35 banking establishments, professionals and managers have a merit pay system; in business services, over half do. In the public sector, we can focus on schools and hospitals, and possibly on police establishments. In the last of these, while being cautious given only a few observations, it appears that no-one other than managers faces incentive schemes. For schools too, out of the 40 schools, very few award merit pay on the basis of subjective assessments (2% for junior teachers, 12% for senior teachers). In the sample of over 100 hospitals, about a third have PRP for manual workers, 15% for senior professionals and 40% for managers. Merit pay is almost entirely absent for all but managers. It is of course true that these are broad occupational bands and within these there may be different activities in different sectors. We also looked at clerical workers in these 4-digit industries on the grounds that clerical work is probably a fairly homogeneous activity. We find the same pattern: in the public sector (police stations, schools, hospitals) we find percentages with PRP or merit pay such as 3%, 16% and 0%. In the private sector (banking, insurance, business services) we find 15%, 49%, 68%, 95%.

## (c) Multivariate analysis

We now check whether our findings are confirmed in a multivariate setting. We control for a set of possibly confounding influences in relation to the firm choosing its optimal payment strategy. These are: the size of the establishment, whether the establishment is part of a larger organisation, whether it is a head office; the strength of union power at the workplace; and workforce composition including the percentage of the workforce who are (separately) full-time, manual, female, and skilled.

We continue to disaggregate by occupation and by the type of scheme. Therefore, we investigate separately the likelihood of each plant having each type of scheme: any incentive scheme, an objective scheme (PRP), subjective assessment scheme (MP), individual-based PRP, group-based PRP and establishment-based PRP. We do this for all occupations, for manuals, for professional, technical and managerial workers, and for just professionals and technicals. We also explicitly look at the difference between manuals and professional and technicals. The unit of observation is the establishment.

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workers were involved in their schemes, then the reverse of that statement could be true.

We adopt a logit model. Two other approaches were considered. First, a multinomial logit model might be thought appropriate on the basis that firms are choosing between different types of schemes. But in fact, as table 5 above showed, many establishments have more than one scheme. While we could obviously have defined more categories defined by different combinations of the schemes, this very quickly became too unwieldy to interpret. Second, another option is a fixed effects logit, pooling the estimation over all 8 occupations but with a fixed effect for each establishment. But since all the information at the establishment level refers to the whole establishment, we would simply end up with a fixed effect per establishment and the exercise would simply collapse to the table showing the pattern of co-existence of schemes for different occupational groups.

Tables 9 to 12 present the results for the different occupational groups chosen, table 13 reports results for the manual/professional difference and table 14 summarises the test results. Rather than discuss each table individually, we first summarise the results for the control variables and second discuss the test results.

We allow for a flexible relationship between the size of the establishment and the likelihood of a scheme. This has a significant effect on the likelihood of schemes for almost all types of schemes for almost all occupational groups. The exception is establishment-level PRP which appears to be unaffected by size. Overwhelmingly, this effect is for incentive schemes to be more likely in bigger establishments. As we found earlier in the cross-tabs, there is a steeper gradient with size for merit pay than PRP. This fits in with similar results in other datasets.

Establishments that are single independent units are less likely to have schemes than are establishments that belong to larger organisations. This is true for any form of PRP, for merit pay and for individual-based PRP. The effect is more marked for professionals and technicals than for manual workers. This finding seems easy to interpret: the fixed costs of designing, setting up and running a scheme are easier to bear in a larger organisation.

Whether the establishment is a head office or not has no effect on the likelihood of any of the types of schemes for any group.

We find a variety of different effects for our measure of union influence. Strong unions make a merit pay (subjective assessment) scheme less likely, mostly for non-

manual groups. They also make group-based PRP more likely for manuals, and slightly so for professionals and technicals. This favouring of objective over subjective criteria, and favouring of collective rather than individual schemes does not seem surprising.

Turning to the composition of the workforce, establishments with high proportions of women are more likely to have PRP schemes; the effect is particularly strong for individual-based PRP schemes, and mostly for manuals. This finding replicates others (Goldin, 1986, and Brown, 1990). It has been interpreted by these authors as reflecting differential labour force attachment. Note though that all we have here is an association between the two; causality could be in either direction. Lazear's (1996) stress on the sorting role of PRP schemes suggests another possible interpretation; causality runs *from* the existence of an individual-based PRP scheme for manuals *to* a high proportion of women in manual jobs.

The proportion of full-time workers in an establishment also has a significant association with the presence of a scheme, as does the proportion of manual workers and the proportion of skilled workers. Interpretation of these findings has to be a little careful as we are now running into issues of job design. That is, the firm can be thought of as simultaneously choosing the nature of production, the composition of the workforce and whether to introduce an incentive scheme or not. Bearing this in mind, we find that both PRP and merit pay schemes are more likely in establishments with high proportions of full-time workers. This is particularly true for individual-based schemes, and better-defined for manual workers than for professionals. Workplaces with a high proportion of skilled manuals among all manuals are slightly more likely to have incentive schemes, more likely to have individual-based schemes and less likely to have group-based schemes. Finally, workplaces with a high fraction of manual workers are more likely to have PRP and less likely to have merit pay for manual workers; only the effect on merit pay is there for professional and technical staff.

We now turn to the results on the differences between sectors controlling for these factors. These are summarised in Table 14, and confirm the results from our previous tabulations. Looking first at PRP in general, we find that private services are more likely to have schemes than the public sector for any occupation, for professionals and technicals, and managers. But there is no significant difference for manual workers.

When we run the professionals/manuals difference we therefore find a significant positive effect for the public sector: among establishments with PRP for manuals and no PRP for professionals, the public sector is significantly over-represented. The same point is true just focussing on individual-based PRP schemes: they are more likely in the private sector in general, and for professionals, but there is no significant difference for manual workers. Merit pay on the other hand is uniformly more likely in the private sector. For all occupational groups we looked at, the private sector is more likely to use a merit pay scheme. Turning to the collective PRP schemes, we generally find little difference between the two service sectors (these are however significantly more common in private manufacturing).

## 5. Summary and Interpretation

Our first aim was to simply document the differences and similarities between the public and private sectors in terms of the existence of incentive schemes. Having done this, we now consider how to interpret these facts in the light of our hypotheses set out above. Our core findings are as follows.

First, we find significant differences between industries and occupations in the likelihood of incentive schemes. We find a greater prevalence of PRP than merit pay for manuals, but find merit pay to be more common than PRP for non-manuals. We also find PRP to be more common in manufacturing and merit pay more common in private services. These differences seem to be interpretable within the theoretical framework set out above. We know that pay based on objective performance criteria is less likely to be optimal in circumstances where measurement is difficult or multi-tasking is important. It seems reasonable to believe that measurement is in general harder in services than manufacturing and that it is harder for non-manuals than manuals.

Second, we find a significant difference in the likelihood of PRP for professional, technical and managerial workers across the public/private services divide, but no significant difference for manual workers. The argument is that the parameters of a skilled manual job are the same whoever owns the organisation, and hence the likely optimality of PRP is the same. This fits with idea that it is not ownership *per se* that

matters, but that 'decision makers' in the public sector are treated differently. This is hard to interpret. It may be due to differences in the scope for measurement or multi-tasking. But much of what civil servants do at work is not that different in terms of measurability and structure to what managers and administrative staff do in private sector services. It may be related to the idea that decision-makers in the public sector have to work to multiple principals. Thus the incidence of PRP among public sector manual workers controls for ownership per se, and the incidence among private sector non-manuals controls for facets peculiar to those occupations. The fact that the (public service – private service) difference is far greater for non-manuals than manuals may be evidence of optimally set incentive schemes. Or it may be due to occupational differences *within* the professional and technical group between the two sectors. One obvious possibility for that is that the private sector needs salespersons and the public sector does not and sales is one classic case where PRP works well. It may also be due to simple inefficiency among non-manuals in the public sector, a group which makes up 58% of total employees in the sector.

We can try to distinguish between these hypotheses by looking at the results for pay incentives based on subjective performance evaluation. For merit pay, subjectively assessed performance evaluation, we find this to be far less common in the public sector across the board. The differences are large for both manuals and professionals and technicals (see tables 10 and 12). Can this be explained as an efficient outcome? It is clearly not the case that the higher incidence of merit pay in the private sector is compensating for a lack of PRP there, since there is more PRP too. If it is argued that measurement is harder or that there is more scope for multi-tasking in the public sector – possibly explaining the lack of objectively-based PRP – then we would expect to see **more** merit pay in the public sector. As noted above, the whole point of subjective evaluation is that gets round these problems by providing a "more holistic view of performance". Similarly, if the jobs people are doing in the public sector are different and less amenable to PRP than jobs like sales in the private sector, then we would expect to see more merit pay, not less. There remains the issue of multiple principals and unfocussed missions. Here we reach the edge of theoretical development: what the optimal response of government is to the weakening of incentives in such an environment is not yet agreed. If the optimal response to the multiple principal issue is to eliminate subjective evaluation as well as objective

incentive schemes, then we cannot distinguish between this and inefficiency as the explanation for the low incentivisation of the public sector. If, however, the optimal response does not involve less subjective evaluation, then we are left with inefficiency as the only possible explanation[18].

This may be due to the ability of such workers to resist such schemes through explicit union-power, or through an appeal to the irrelevance of such schemes given a public service ethic, or to manipulation of the bureaucratic process. Whatever the case, while we await further theoretical developments on the implications of multiple principals, the balance of the evidence seems to favour the idea that the public sector services in 1990 were under-incentivised. This in turn suggests that on-going attempts since then to enforce incentivisation are appropriate.

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[18] There are other stories that might apply to specific groups of people. For example, it may be that subjective performance evaluation is optimally eschewed for people in sensitive politcial posts in order to reduce possible favoritism. Or it may be that paying out tax dollars to high-ranking public servants in the form of bonusses based on subjective criteria may risk corruption.

# Table 1: Sample sizes

|  | Private Manuf'g | Private Services | Public Services | Total |
|---|---|---|---|---|
| **Overall:** | | | | |
| **Unwt'd # obs** | 630 | 799 | 625 | 2054 |
| **Wt'd dist** | | | | |
| 25 - 49 | 36.99 | 58.37 | 55.80 | 53.05 |
| 50 - 99 | 32.36 | 24.38 | 20.71 | 24.99 |
| 100 - 199 | 16.13 | 11.49 | 12.05 | 12.64 |
| 200 - 499 | 11.22 | 4.68 | 6.99 | 6.76 |
| 500 - 999 | 2.26 | 0.79 | 2.83 | 1.71 |
| 1000+ | 1.05 | 0.29 | 1.62 | 0.85 |
| **Total** | 100 | 100 | 100 | 100 |
| With PRP question answered: | | | | |
| **Unwt'd # obs** | 626 | 788 | 620 | 2034 |
| **Wt'd dist** | | | | |
| 25 - 49 | 37.11 | 58.27 | 56.01 | 53.04 |
| 50 - 99 | 32.47 | 24.19 | 10.22 | 24.80 |
| 100 - 199 | 15.95 | 11.70 | 12.22 | 12.77 |
| 200 - 499 | 11.16 | 4.75 | 7.02 | 6.80 |
| 500 - 999 | 2.27 | 0.79 | 2.88 | 1.73 |
| 1000+ | 1.04 | 0.30 | 1.65 | 0.86 |
| **Total** | 100 | 100 | 100 | 100 |
| # Obs with >5 of following occup groups: | | | | |
| Unsk'd man | 437 | 403 | 424 | 1264 |
| S-sk'd man | 478 | 291 | 244 | 1013 |
| Sk'd man | 513 | 351 | 263 | 1127 |
| Supervisor | 442 | 389 | 318 | 1149 |
| Clerical | 520 | 592 | 485 | 1597 |
| J. prof./tech. | 379 | 360 | 415 | 1154 |
| S. prof./tech | 364 | 312 | 418 | 1094 |
| Manager | 476 | 450 | 412 | 1338 |

# Table 2: Occupational dispersion

**(a) Weighted percentage of total employment in each occupation.**

| Occupation | Private Manuf'g | Private Services | Public Services |
|---|---|---|---|
| Unsk'd man | 22 | 18 | 22 |
| S-sk'd man | 23 | 12 | 9 |
| Sk'd man | 25 | 15 | 6 |
| Supervisor | 4 | 5 | 5 |
| Clerical | 11 | 23 | 18 |
| J. prof./tech. | 4 | 11 | 18 |
| S. prof./tech | 4 | 7 | 15 |
| Manager | 7 | 8 | 6 |
| **Total** | 100 | 100 | 100 |

**(b) Weighted percentage of establishments with more than 10 employees in each occupation.**

| Occupation | Private Manuf'g | Private Services | Public Services |
|---|---|---|---|
| Unsk'd man | 51 | 38 | 53 |
| S-sk'd man | 59 | 27 | 16 |
| Sk'd man | 57 | 34 | 9 |
| Supervisor | 3 | 14 | 18 |
| Clerical | 36 | 56 | 41 |
| J. prof./tech. | 14 | 26 | 46 |
| S. prof./tech | 12 | 23 | 40 |
| Manager | 18 | 28 | 20 |

**(c) Weighted percentage of establishments with more than 20 employees in each occupation.**

| Occupation | Private Manuf'g | Private Services | Public Services |
|---|---|---|---|
| Unsk'd man | 35 | 29 | 41 |
| S-sk'd man | 43 | 18 | 12 |
| Sk'd man | 42 | 25 | 8 |
| Supervisor | 0 | 2 | 7 |
| Clerical | 10 | 39 | 24 |
| J. prof./tech. | 3 | 18 | 37 |
| S. prof./tech | 3 | 11 | 28 |
| Manager | 1 | 7 | 4 |

## Table 3: Type of scheme by Status, %

| Scheme | Private Manufacturing | | Private Services | | Public Services | | Total | |
|---|---|---|---|---|---|---|---|---|
| | % | # obs | % | # obs | % | # obs | % | # obs |
| **PRP:** | | | | | | | | |
| **any scheme** | 55 | 626 | 39 | 788 | 22 | 620 | 37 | 2034 |
| **individual** | 36 | | 30 | | 15 | | 27 | |
| **group** | 20 | | 11 | | 7 | | 12 | |
| **establishment** | 11 | | 5 | | 3 | | 6 | |
| **Merit Pay** | 43 | 568 | 51 | 697 | 23 | 515 | 41 | 1780 |
| **Performance appraisal:** | | | | | | | | |
| **for any purpose** | 17 | 594 | 40 | 559 | 22 | 465 | 29 | 1618 |
| **for pay revision** | 11 | | 23 | | 6 | | 15 | |
| **for promotion** | 15 | | 34 | | 11 | | 22 | |
| **Any of Above** | 71 | 630 | 65 | 796 | 36 | 623 | 57 | 2049 |

Notes:

1. All tables weighted
2. PRP and merit pay bases exclude only establishments where answer to relevant question is missing for every occupation
3. Performance appraisal question is asked about either manual or clerical workers whichever group is greater in number.
4. Performance appraisal base includes only those establishments with more than 5 manual workers and more than 5 non-manual workers (full or part-time)
5. Bases for pay revision and promotion are, firstly, those with any performance appraisal system and, secondly, those who answered the performance appraisal question.
6. Base for any of above includes all establishments with at least one non-missing answer.
7. Any of above is not positive for those establishments with a performance appraisal system that is not used for either pay revision or promotion purposes.

# Table 4: Incentive schemes by status and size, %

| Scheme | Size | Private Manuf'g | Private Services | Public Services | Total |
|---|---|---|---|---|---|
| **PRP** | 25 - 49 | 61 | 38 | 18 | 35 |
| | 50 - 99 | 46 | 36 | 19 | 35 |
| | 100 - 199 | 56 | 45 | 33 | 44 |
| | 200 - 499 | 61 | 51 | 33 | 49 |
| | 500 - 999 | 55 | 55 | 48 | 51 |
| | 1000+ | 52 | 54 | 43 | 47 |
| | | | | | |
| | Total | 55 | 39 | 22 | 37 |
| **Merit Pay** | 25 - 49 | 37 | 46 | 11 | 35 |
| | 50 - 99 | 38 | 50 | 23 | 41 |
| | 100 - 199 | 50 | 64 | 43 | 55 |
| | 200 - 499 | 57 | 72 | 53 | 61 |
| | 500 - 999 | 57 | 72 | 41 | 53 |
| | 1000+ | 89 | 94 | 70 | 79 |
| | | | | | |
| | Total | 43 | 51 | 23 | 41 |
| **P. App. for Pay Revision** | 25 - 49 | 11 | 19 | 2 | 12 |
| | 50 - 99 | 4 | 25 | 1 | 13 |
| | 100 - 199 | 18 | 29 | 11 | 21 |
| | 200 - 499 | 19 | 33 | 25 | 25 |
| | 500 - 999 | 21 | 39 | 8 | 17 |
| | 1000+ | 25 | 48 | 19 | 26 |
| | | | | | |
| | Total | 11 | 23 | 6 | 15 |
| **P. App. for Promotions** | 25 - 49 | 10 | 24 | 9 | 17 |
| | 50 - 99 | 5 | 40 | 2 | 21 |
| | 100 - 199 | 27 | 45 | 18 | 32 |
| | 200 - 499 | 31 | 62 | 32 | 42 |
| | 500 - 999 | 27 | 49 | 9 | 22 |
| | 1000+ | 31 | 61 | 21 | 31 |
| | | | | | |
| | Total | 15 | 34 | 11 | 22 |

All tables weighted.

## Table 5: Co-existence

**(a) Co-existence of types of schemes**

| Does establishment have scheme for (%): ® given that establishment has scheme for: ⁻ | PRP | Merit Pay | P.App for Pay Revision | P.App for Promotions |
|---|---|---|---|---|
| **PRP** | *100* | 55 | 18 | 23 |
| **Merit Pay** | 57 | *100* | 28 | 34 |
| **P.App for Pay Revision** | 45 | 68 | *100* | 93 |
| **P.App for Promotions** | 40 | 56 | 63 | *100* |
| **Any Scheme** | 65 | 63 | 25 | *37* |

**(b) Co-existence of any scheme across occupational groups**

| Does establishment have scheme for (%): ® given that establishment has scheme for: ⁻ | PRP for same occupation | Merit Pay for same occupation |
|---|---|---|
| **PRP** | | |
| Unskilled manual | *100* | 23 |
| Semi-skilled manual | *100* | 31 |
| Skilled manual | *100* | 35 |
| Supervisor | *100* | 67 |
| Clerical/Secretarial | *100* | 57 |
| Junior professional/technical | *100* | 54 |
| Senior professional/technical | *100* | 57 |
| Manager | *100* | 65 |
| | | |
| **Merit Pay** | | |
| Unskilled manual | 49 | *100* |
| Semi-skilled manual | 61 | *100* |
| Skilled manual | 54 | *100* |
| Supervisor | 35 | *100* |
| Clerical/Secretarial | 35 | *100* |
| Junior professional/technical | 37 | *100* |
| Senior professional/technical | 36 | *100* |
| Manager | 47 | *100* |

**(c) Co-existence of any scheme across occupational groups**

| Does establishment have scheme for (%): ® given that establishment has scheme for: ⁻ | Some Manuals | | | Some Non-manuals | | | Managers | | |
|---|---|---|---|---|---|---|---|---|---|
| | No | Yes | Ms | No | Yes | Ms | No | Yes | Ms |
| **PRP** | | | | | | | | | |
| Some Manuals | - | - | - | 30 | 34 | 35 | | | |
| Some Non-manuals | 25 | 38 | 37 | - | - | - | | | |
| Any non-managers | - | - | - | - | - | - | 15 | 25 | 60 |
| **Merit Pay** | | | | | | | | | |
| Some Manuals | | | | 12 | 48 | 41 | | | |
| Some Non-manuals | 26 | 21 | 53 | | | | | | |
| Any non-managers | | | | | | | 6 | 38 | 57 |

## Table 6: Any scheme by occupation

| Occupation | PRP (%) | Merit Pay (%) |
|---|---|---|
| Unskilled manual | 23 | 13 |
| Semi-skilled manual | 36 | 21 |
| Skilled manual | 37 | 27 |
| Supervisor | 18 | 42 |
| Clerical/Secretarial | 21 | 41 |
| Junior professional/technical | 21 | 37 |
| Senior professional/technical | 20 | 39 |
| Manager | 30 | 48 |

All tables weighted

## Table 7: Any scheme by occupation and status

| Scheme | Occupation | Private Manuf'g | Private Services | Public Services |
|---|---|---|---|---|
| **PRP** | Unskilled manual | 31 | 22 | 18 |
| | Semi-skilled manual | 47 | 30 | 27 |
| | Skilled manual | 38 | 35 | 41 |
| | Supervisor | 19 | 21 | 10 |
| | Clerical/Secretarial | 22 | 23 | 18 |
| | Junior professional/technical | 30 | 33 | 5 |
| | Senior professional/technical | 31 | 27 | 9 |
| | Manager | 32 | 37 | 18 |
| **Merit Pay** | Unskilled manual | 19 | 18 | 3 |
| | Semi-skilled manual | 24 | 24 | 6 |
| | Skilled manual | 21 | 34 | 14 |
| | Supervisor | 36 | 49 | 31 |
| | Clerical/Secretarial | 44 | 45 | 31 |
| | Junior professional/technical | 53 | 50 | 12 |
| | Senior professional/technical | 50 | 51 | 21 |
| | Manager | 48 | 57 | 32 |

# Table 8: Specific Industries

| Industry | Private Services | | | | Public Services | | | |
|---|---|---|---|---|---|---|---|---|
| | % PRP | % Merit Pay | # obs. PRP | Mrt | % PRP | % Merit Pay | # obs. PRP | Mrt |
| **Police** | | | | | | | | |
| Unskilled manual | - | - | 0 | 0 | 3 | 0 | 12 | 7 |
| Skilled manual | - | - | 0 | 0 | 0 | 100 | 4 | 1 |
| Junior prof/tech | - | - | 0 | 0 | 0 | 2 | 17 | 11 |
| Senior prof/tech | - | - | 0 | 0 | 0 | 2 | 16 | 11 |
| Manager | - | - | 0 | 0 | 0 | 23 | 13 | 10 |
| **Schools** | | | | | | | | |
| Unskilled manual | 13 | 5 | 11 | 10 | 8 | 0 | 59 | 40 |
| Skilled manual | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 1 |
| Junior prof/tech | 0 | 0 | 6 | 5 | 5 | 2 | 54 | 38 |
| Senior prof/tech | 0 | 14 | 12 | 11 | 7 | 12 | 64 | 44 |
| Manager | 0 | 0 | 1 | 1 | 7 | 3 | 42 | 34 |
| **R+D** | | | | | | | | |
| Unskilled manual | 5 | 42 | 7 | 7 | 5 | 0 | 5 | 4 |
| Skilled manual | 3 | 23 | 9 | 9 | 12 | 11 | 5 | 4 |
| Junior prof/tech | 41 | 75 | 11 | 11 | 5 | 100 | 5 | 4 |
| Senior prof/tech | 41 | 75 | 10 | 10 | 42 | 100 | 5 | 5 |
| Manager | 59 | 100 | 10 | 10 | 14 | 100 | 4 | 4 |
| **Hospitals** | | | | | | | | |
| Unskilled manual | 0 | 0 | 5 | 3 | 27 | 1 | 118 | 87 |
| Skilled manual | 0 | 0 | 1 | 1 | 35 | 1 | 105 | 79 |
| Junior prof/tech | 0 | 0 | 4 | 2 | 0 | 0 | 122 | 72 |
| Senior prof/tech | 0 | 21 | 6 | 5 | 15 | 3 | 120 | 74 |
| Manager | - | - | 0 | 0 | 39 | 56 | 105 | 88 |
| **Sport and Recreation** | | | | | | | | |
| Unskilled manual | 0 | 0 | 5 | 4 | 11 | 14 | 10 | 8 |
| Skilled manual | 0 | 0 | 3 | 2 | 36 | 19 | 9 | 8 |
| Junior prof/tech | 0 | 96 | 3 | 2 | 0 | 0 | 8 | 8 |
| Senior prof/tech | 0 | - | 1 | 0 | 0 | 0 | 4 | 4 |
| Manager | 0 | 92 | 5 | 3 | 12 | 0 | 8 | 7 |
| **Banking and Finance** | | | | | | | | |
| Unskilled manual | 2 | 34 | 9 | 7 | 100 | 100 | 1 | 1 |
| Skilled manual | 20 | 69 | 6 | 5 | 100 | 100 | 1 | 1 |
| Junior prof/tech | 8 | 100 | 39 | 38 | 50 | 100 | 2 | 2 |
| Senior prof/tech | 13 | 100 | 35 | 35 | 50 | 100 | 2 | 2 |
| Manager | 15 | 99 | 38 | 38 | 50 | 100 | 2 | 2 |
| **Insurance** | | | | | | | | |
| Unskilled manual | 79 | 7 | 11 | 11 | - | - | 0 | 0 |
| Skilled manual | 56 | 75 | 7 | 7 | - | - | 0 | 0 |
| Junior prof/tech | 80 | 70 | 22 | 21 | - | - | 0 | 0 |
| Senior prof/tech | 81 | 48 | 23 | 22 | - | - | 0 | 0 |
| Manager | 57 | 53 | 23 | 22 | - | - | 0 | 0 |
| **Business Services** | | | | | | | | |
| Unskilled manual | 18 | 27 | 19 | 17 | 0 | 0 | 3 | 3 |
| Skilled manual | 52 | 41 | 13 | 13 | - | - | 0 | 0 |
| Junior prof/tech | 24 | 54 | 60 | 58 | 0 | 100 | 3 | 2 |
| Senior prof/tech | 29 | 54 | 54 | 50 | 35 | 80 | 4 | 3 |
| Manager | 26 | 63 | 64 | 61 | 35 | 80 | 4 | 3 |

## Table 9: Logit regressions for influence of establishment characteristics upon propensity to operate schemes below for any occupation

| Independent Variable | Coefficients (t-statistics) | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | PRP / Merit Pay | PRP (Any Type) | Merit Pay | Individual PRP | Group PRP | Establishment PRP |
| **Constant** | -2.037 | -2.864 | -0.860 | -3.861 | -4.121 | -0.148 |
| | (-3.40) | (-5.06) | (-1.41) | (-6.48) | (-5.54) | (-0.13) |
| **50-99[19] Employees** | 0.07 | -0.198 | 0.108 | 0.141 | -0.399 | 0.407 |
| | (0.35) | (-1.00) | (0.48) | (0.65) | (-1.34) | (0.99) |
| **100-199 Employees** | 0.499 | 0.036 | 0.677 | 0.362 | 0.250 | -0.032 |
| | (2.44) | (0.18) | (2.97) | (1.65) | (0.93) | (-0.07) |
| **200-499 Employees** | 1.377 | 0.487 | 1.401 | 0.686 | 0.741 | 0.359 |
| | (6.10) | (2.37) | (5.85) | (3.07) | (2.78) | (0.83) |
| **500-999 Employees** | 1.407 | 0.527 | 1.324 | 0.758 | 1.129 | 0.423 |
| | (5.72) | (2.35) | (5.18) | (3.13) | (4.04) | (0.94) |
| **1000+ Employees** | 2.129 | 0.499 | 2.509 | 0.663 | 0.697 | 0.651 |
| | (8.38) | (2.34) | (9.35) | (2.84) | (2.49) | (1.52) |
| **Private services[20]** | 0.179 | -0.039 | 0.147 | 0.155 | -0.053 | -0.919 |
| | (1.04) | (-0.26) | (0.85) | (0.98) | (-0.28) | (-3.30) |
| **Public services** | -0.700 | -0.462 | -0.849 | -0.530 | 0.283 | -1.216 |
| | (-3.51) | (-2.59) | (-4.13) | (-2.72) | (1.34) | (-3.59) |
| **% Full-time** | 0.023 | 0.023 | 0.011 | 0.024 | 0.021 | -0.011 |
| | (5.42) | (5.71) | (2.68) | (5.61) | (3.78) | (-1.29) |
| **% Manual** | 0.004 | 0.007 | -0.007 | 0.002 | 0.012 | -0.002 |
| | (1.46) | (2.85) | (-2.66) | (0.91) | (3.85) | (-0.47) |
| **% of Manual Skilled** | 0.005 | 0.003 | 0.003 | 0.006 | -0.005 | -0.005 |
| | (2.27) | (1.24) | (1.25) | (2.47) | (-1.66) | (-1.23) |
| **% Women** | 0.007 | 0.010 | 0.000 | 0.019 | 0.000 | 0.025 |
| | (2.18) | (3.07) | (0.10) | (5.76) | (-0.08) | (-3.68) |
| **% Union Membership[21]** | -1.423 | 0.671 | -1.418 | -0.138 | 1.159 | -0.265 |
| | (-2.01) | (1.05) | (-1.92) | (-0.21) | (1.45) | (-0.23) |
| **% Union Membership sq.** | 0.758 | -0.919 | 0.742 | -0.175 | -1.659 | 0.419 |
| | (1.05) | (-1.40) | (0.98) | (-0.25) | (-2.04) | (0.36) |
| **Single Independent Establishment** | -0.748 | -0.589 | -0.678 | -0.529 | -0.172 | -0.689 |
| | (-4.13) | (-3.33) | (-3.47) | (-2.75) | (-0.75) | (-1.80) |
| **Head Office** | 0.173 | 0.015 | -0.071 | -0.265 | -0.008 | 0.407 |
| | (0.67) | (0.07) | (-0.28) | (-1.14) | (-0.03) | (1.00) |
| **N** | 1372 | 1369 | 1206 | 1369 | 1369 | 1369 |
| **R-sq** | 0.144 | 0.062 | 0.144 | 0.058 | 0.073 | 0.091 |

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[19] Omitted size category is 25-49 employees
[20] Omitted status category is private manufacturing
[21] Base = All employees

## Table 10: Logit regressions for influence of establishment characteristics upon propensity to operate schemes below for manual workers

| Independent Variable | Coefficients (t-statistics) | | | | | |
|---|---|---|---|---|---|---|
| | PRP / Merit Pay | PRP (Any Type) | Merit Pay | Individual PRP | Group PRP | Establishment PRP |
| **Constant** | -2.605 | -3.358 | -0.863 | -5.231 | -3.857 | -0.346 |
| | (-4.44) | (-5.39) | (-1.15) | (-7.07) | (-4.70) | (-0.26) |
| **50-99 Employees** | -0.095 | -0.187 | 0.133 | 0.049 | -0.408 | 0.333 |
| | (-0.45) | (-0.85) | (0.48) | (0.18) | (-1.25) | (0.71) |
| **100-199 Employees** | -0.157 | -0.302 | 0.292 | 0.113 | -0.050 | -0.557 |
| | (-0.74) | (-1.36) | (1.03) | (0.42) | (-0.17) | (-1.01) |
| **200-499 Employees** | 0.315 | 0.250 | 0.275 | 0.471 | 0.458 | 0.160 |
| | (1.42) | (1.09) | (0.88) | (1.69) | (1.55) | (0.31) |
| **500-999 Employees** | 0.548 | 0.376 | 0.254 | 0.748 | 0.812 | 0.079 |
| | (2.31) | (1.54) | (0.74) | (2.53) | (2.67) | (0.15) |
| **1000+ Employees** | 0.572 | 0.295 | 0.600 | 0.229 | 0.438 | 0.734 |
| | (2.50) | (1.25) | (1.92) | (0.75) | (1.44) | (1.51) |
| **Private services** | -0.202 | -0.453 | -0.022 | -0.211 | -0.376 | -0.824 |
| | (-1.33) | (-2.87) | (-0.11) | (-1.12) | (-1.82) | (-2.51) |
| **Public services** | -0.333 | -0.127 | -1.465 | -0.552 | 0.224 | -0.874 |
| | (-1.87) | (-0.70) | (-4.54) | (-2.28) | (1.08) | (-2.40) |
| **% Full-time** | 0.023 | 0.023 | 0.005 | 0.027 | 0.018 | -0.013 |
| | (5.44) | (5.05) | (1.05) | (5.02) | (2.84) | (-1.33) |
| **% Manual** | 0.010 | 0.015 | -0.008 | 0.017 | 0.011 | 0.002 |
| | (3.85) | (5.53) | (-2.14) | (4.96) | (3.14) | (0.40) |
| **% of Manual Skilled** | 0.002 | 0.000 | 0.005 | 0.007 | -0.007 | -0.007 |
| | (0.86) | (0.21) | (1.76) | (2.55) | (-2.41) | (-1.51) |
| **% Women** | 0.005 | 0.005 | 0.000 | 0.017 | -0.003 | -0.027 |
| | (1.64) | (1.60) | (0.10) | (4.58) | (-0.81) | (-3.34) |
| **% Union Membership[22]** | -0.203 | 0.417 | 0.000 | -0.612 | 3.010 | -2.734 |
| | (-0.29) | (0.57) | (0.00) | (-0.69) | (3.33) | (-1.66) |
| **% Union Membership sq.** | -0.575 | -0.749 | -1.127 | -0.149 | -2.856 | 2.977 |
| | (-0.83) | (-1.05) | (-1.17) | (-0.17) | (-3.34) | (1.87) |
| **Single Independent Establishment** | -0.245 | -0.292 | -0.197 | -0.284 | -0.091 | -0.559 |
| | (-1.37) | (-1.54) | (-0.85) | (-1.29) | (-0.36) | (-1.28) |
| **Head Office** | 0.348 | 0.417 | 0.276 | -0.356 | 0.474 | 0.839 |
| | (1.40) | (1.59) | (0.86) | (-0.90) | (1.49) | (1.71) |
| **N** | 1268 | 1262 | 1025 | 1262 | 1262 | 1262 |
| **R-sq** | 0.059 | 0.067 | 0.109 | 0.084 | 0.085 | 0.109 |

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[22] Base = All manual employees

## Table 11: Logit regressions for influence of establishment characteristics upon propensity to operate schemes below for prof / tech or managerial employees

| Independent Variable | Coefficients (t-statistics) | | | | | |
|---|---|---|---|---|---|---|
| | PRP / Merit Pay | PRP (Any Type) | Merit Pay | Individual PRP | Group PRP | Establishment PRP |
| Constant | -0.731 (-1.04) | -1.559 (-2.17) | -1.492 (-1.90) | -2.710 (-3.44) | -5.152 (-3.58) | 1.158 (0.78) |
| 50-99 Employees | -0.076 (-0.26) | -0.134 (-0.44) | -0.115 (-0.34) | 0.153 (0.45) | -0.653 (-1.20) | 0.049 (0.08) |
| 100-199 Employees | 0.051 (0.17) | -0.236 (-0.78) | 0.399 (1.21) | 0.122 (0.37) | -0.686 (-1.29) | -0.306 (-0.48) |
| 200-499 Employees | 0.822 (2.79) | 0.090 (0.30) | 1.322 (3.93) | 0.406 (1.23) | -0.065 (-0.13) | -0.102 (-0.16) |
| 500-999 Employees | 0.935 (3.00) | -0.161 (-0.51) | 1.309 (3.76) | 0.091 (0.25) | 0.321 (0.62) | -0.540 (-0.81) |
| 1000+ Employees | 2.116 (6.64) | 0.288 (0.96) | 2.557 (7.16) | 0.631 (1.88) | -0.841 (-1.43) | -0.091 (-0.14) |
| Private services | 0.910 (4.55) | 0.506 (2.68) | 0.628 (2.89) | 0.832 (3.96) | 0.847 (2.54) | -1.052 (-2.88) |
| Public services | -0.526 (-2.21) | -0.206 (-0.85) | -0.443 (-1.68) | 0.340 (1.27) | 0.374 (0.74) | -2.587 (-4.25) |
| % Full-time | 0.011 (2.14) | 0.010 (2.01) | 0.014 (2.61) | 0.012 (2.19) | 0.031 (2.68) | -0.022 (-2.03) |
| % Manual | -0.004 (-1.17) | 0.000 (0.00) | -0.003 (-0.92) | -0.005 (-1.43) | 0.007 (1.23) | -0.001 (-0.08) |
| % of Manual Skilled | 0.000 (0.07) | 0.001 (0.19) | 0.002 (0.56) | 0.006 (2.12) | -0.011 (-1.96) | -0.009 (-1.63) |
| % Women | -0.004 (-1.08) | -0.002 (-0.37) | -0.002 (-0.43) | 0.006 (1.29) | -0.001 (-0.11) | -0.033 (-3.67) |
| % Union Membership[23] | -0.774 (-0.96) | 0.660 (0.84) | -1.150 (-1.30) | -0.774 (-0.88) | -0.036 (-0.02) | 3.141 (2.30) |
| % Union Membership sq. | 0.108 (0.13) | -1.312 (-1.59) | 0.567 (0.62) | 0.048 (0.05) | -1.658 (-0.96) | -2.814 (-1.92) |
| Single Independent Establishment | -0.738 (-3.25) | -0.452 (-1.91) | -0.951 (-3.74) | -0.695 (-2.46) | 0.084 (0.22) | -0.094 (-0.22) |
| Head Office | -0.410 (-1.63) | -0.115 (-0.46) | -0.457 (-1.69) | -0.375 (-1.42) | -0.345 (-0.65) | 0.808 (1.58) |
| N | 1046 | 1037 | 882 | 1037 | 1037 | 1037 |
| R-sq | 0.145 | 0.041 | 0.161 | 0.05 | 0.095 | 0.146 |

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[23] Base = All non-manual employees

## Table 12: Logit regressions for influence of establishment characteristics upon propensity to operate schemes below for professional or technical employees

| Independent Variable | Coefficients (t-statistics) | | | | | |
|---|---|---|---|---|---|---|
| | PRP / Merit Pay | PRP (Any Type) | Merit Pay | Individual PRP | Group PRP | Establishment PRP |
| constant | -0.587 (-0.70) | -1.632 (-1.72) | -0.801 (-0.86) | -2.409 (-2.31) | -7.208 (-2.96) | -2.132 (-1.02) |
| 50-99 Employees | -0.456 (-1.23) | -0.459 (-1.23) | -0.452 (-1.07) | -0.244 (-0.59) | -1.690 (-1.92) | -0.084 (-0.11) |
| 100-199 Employees | -0.648 (-1.76) | -0.753 (-2.01) | 0.029 (0.07) | -0.171 (-0.42) | -0.939 (-1.38) | -0.680 (-0.90) |
| 200-499 Employees | -0.061 (-0.17) | -0.658 (-1.76) | 0.698 (1.68) | -0.343 (-0.82) | -0.815 (-1.23) | -0.590 (-0.81) |
| 500-999 Employees | -0.069 (-0.18) | -1.117 (-2.80) | 0.673 (1.59) | -0.829 (-1.80) | -0.088 (-0.14) | -1.137 (-1.47) |
| 1000+ Employees | 0.924 (2.52) | -0.564 (-1.52) | 1.712 (4.12) | -0.174 (-0.42) | -1.292 (-1.82) | -0.432 (-0.60) |
| Private services | 0.642 (2.79) | 0.394 (1.68) | 0.135 (0.52) | 0.681 (2.52) | 0.705 (1.59) | -1.060 (-2.37) |
| Public services | -1.290 (-4.58) | -1.304 (-3.76) | -1.392 (-4.36) | -0.922 (-2.25) | 0.119 (0.18) | -2.229 (-3.39) |
| % Full-time | 0.018 (2.81) | 0.015 (2.02) | 0.018 (2.49) | 0.015 (1.80) | 0.051 (2.26) | 0.007 (0.39) |
| % Manual | -0.005 (-1.22) | 0.000 (0.11) | -0.011 (-2.48) | -0.007 (-1.56) | 0.008 (1.05) | 0.003 (0.40) |
| % of Manual Skilled | -0.001 (-0.24) | -0.001 (-0.25) | 0.001 (0.29) | 0.005 (1.23) | -0.007 (-0.93) | -0.009 (-1.46) |
| % Women | -0.007 (-1.42) | -0.003 (-0.57) | -0.005 (-0.94) | 0.005 (0.85) | 0.002 (0.18) | -0.021 (-1.99) |
| % Union Membership[24] | -0.066 (-0.07) | 2.169 (2.22) | -1.031 (-1.01) | -0.378 (-0.33) | 3.428 (1.68) | 4.288 (2.68) |
| % Union Membership sq. | -1.111 (-1.16) | -2.881 (-2.68) | 0.016 (0.02) | -0.345 (-0.27) | -6.310 (-2.42) | -3.588 (-2.14) |
| Single Independent Establishment | -0.534 (-2.05) | -0.189 (-0.68) | -0.619 (-2.16) | -0.512 (-1.51) | 0.095 (0.19) | 0.109 (0.22) |
| Head Office | -0.173 (-0.61) | -0.047 (-0.15) | -0.264 (-0.86) | -0.481 (-1.38) | -0.214 (-0.31) | 0.697 (1.17) |
| N | 848 | 841 | 683 | 841 | 841 | 841 |
| R-sq | 0.2 | 0.107 | 0.194 | 0.097 | 0.141 | 0.159 |

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[24] Base = All non-manual employees

## Table 13: Logit regressions for influence of establishment characteristics upon propensity to operate schemes below for manual but not prof / tech employees

| Independent Variable | Coefficients (t-statistics) | | |
|---|---|---|---|
| | PRP / Merit Pay | PRP (Any Type) | Merit Pay |
| constant | -6.766 (-5.77) | -6.380 (-5.33) | -12.021 (-3.39) |
| 50-99 Employees | -0.230 (-0.34) | -0.486 (-0.68) | -0.937 (-0.61) |
| 100-199 Employees | 0.797 (1.45) | 0.525 (0.94) | 0.686 (0.54) |
| 200-499 Employees | 1.026 (1.91) | 0.948 (1.76) | -0.351 (-0.24) |
| 500-999 Employees | 1.516 (2.83) | 1.463 (2.73) | -0.984 (-0.63) |
| 1000+ Employees | 1.031 (1.96) | 0.914 (1.74) | -0.207 (-0.16) |
| Private services | -0.219 (-0.75) | -0.180 (-0.60) | -0.364 (-0.46) |
| Public services | 0.574 (1.97) | 0.544 (1.84) | 0.574 (0.60) |
| % Full-time | 0.025 (3.16) | 0.023 (2.86) | 0.049 (1.78) |
| % Manual | 0.023 (4.59) | 0.022 (4.29) | 0.036 (2.37) |
| % of Manual Skilled | 0.003 (0.67) | 0.000 (0.03) | 0.032 (3.16) |
| % Women | 0.021 (3.58) | 0.018 (2.95) | 0.050 (2.83) |
| % Union Membership[25] | 2.019 (1.73) | 2.519 (2.08) | -3.570 (-1.00) |
| % Union Membership sq. | -2.195 (-1.95) | -2.621 (-2.25) | 2.116 (0.56) |
| Single Independent Establishment | -0.618 (-1.49) | -0.710 (-1.63) | -1.035 (-0.86) |
| Head Office | 0.405 (1.16) | 0.297 (0.82) | 1.644 (1.74) |
| N | 756 | 748 | 569 |
| R-sq | 0.096 | 0.1 | 0.21 |

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[25] Base = All employees

**Table 14: Comparison of public and private service establishments' likelihoods of operating schemes**

| Scheme | Occupation | Private Services more likely to have scheme | Public Services more likely to have scheme | No Significant difference at 5% level |
|---|---|---|---|---|
| **PRP or Merit Pay** | Any | √ | | |
| | Manual | | | √ |
| | Prof/tech/managers | √ | | |
| | Prof/tech | √ | | |
| | Manual but not prof/tech | | √ | |
| **PRP (Any Type)** | Any | √ | | |
| | Manual | | | √ |
| | Prof/tech/managers | √ | | |
| | Prof/tech | √ | | |
| | Manual but not prof/tech | | √ | |
| **Merit Pay** | Any | √ | | |
| | Manual | √ | | |
| | Prof/tech/managers | √ | | |
| | Prof/tech | √ | | |
| | Manual but not prof/tech | | | √ |
| **Individual PRP** | Any | √ | | |
| | Manual | | | √ |
| | Prof/tech/managers | √ | | |
| | Prof/tech | √ | | |
| **Group PRP** | Any | | | √ |
| | Manual | | √ | |
| | Prof/tech/managers | | | √ |
| | Prof/tech | | | √ |
| **Establishment PRP** | Any | | | √ |
| | Manual | | | √ |
| | Prof/tech/managers | √ | | |
| | Prof/tech | | | √ |

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## APPENDIX TABLE

| Variable Name | Description | Full Sample | | Analysis Sample |
|---|---|---|---|---|
| | | Mean | s.d. | Mean |
| STATUS | private manufacturing | .21290 | .40946 | .26634 |
| | private services | .49038 | .50003 | .46042 |
| | public services | .29673 | .45693 | .27324 |
| | | | | |
| INDUSTRY | Energy and water supply | .01054 | .10215 | .01504 |
| | Metal manufacturing and chemicals | .02799 | .16498 | .03972 |
| | Engineering | .08325 | .27633 | .10528 |
| | Other manufacturing | .10166 | .30227 | .12134 |
| | Construction | .04515 | .20769 | .04475 |
| | Distribution, hotels and catering | .20996 | .40738 | .22090 |
| | Transport and communication | .06389 | .24462 | .06681 |
| | Banking, insurance and finance | .12953 | .33587 | .09512 |
| | Education, health and other services | .32802 | .46961 | .29104 |
| | | | | |
| HEAD | head offices | .06718 | .25040 | .06760 |
| SINGLE | single establishment organisations | .20892 | .40664 | .19372 |
| TOTEMP | total employment | 101.65 | 216.58 | 123.05 |
| SIZE | 25-49 | .53053 | .49919 | .45215 |
| | 50-99 | .24991 | .43306 | .26566 |
| | 100-199 | .12642 | .33240 | .15930 |
| | 200-499 | .06757 | .25107 | .08678 |
| | 500-999 | .01708 | .12961 | .02421 |
| | 1000 | .00848 | .09174 | .01190 |
| PCMANUSK | % unskilled manual | 19.869 | 25.810 | 20.666 |
| PCMANSSK | % semi-skilled manual | 13.211 | 22.532 | 15.628 |
| PCMANSK | % skilled manual | 14.484 | 23.658 | 15.542 |
| PCSUPV | % supervisors | 4.8104 | 6.2744 | 4.4735 |
| PCCLERC | % clerical/secretarial | 19.160 | 22.800 | 17.186 |
| PCJRTECH | % junior technical / professional | 11.375 | 18.651 | 9.7904 |
| PCSRTECH | % senior technical / professional | 8.8187 | 14.555 | 9.1761 |
| PCMANAGE | % managers | 7.2925 | 6.9739 | 7.2541 |
| PCFT | % full time | 78.648 | 24.738 | 80.316 |
| PCMAN | % manual | 48.155 | 34.365 | 52.144 |
| PCSK | % of manual skilled | 25.750 | 32.241 | 26.158 |
| PCWOMEN | % women | 47.251 | 30.796 | 44.758 |
| TOTEMPPU | total union density | .38203 | .38562 | .37326 |
| MANTPU | manul union density | .36784 | .41211 | .37526 |
| NMANTPU | non-manual union density | .33825 | .40825 | .32032 |