Employee Engagement Practices and Job Satisfaction in Britain: Theoretical and Empirical Contributions

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Abstract

Lancaster's (1966a) consumer theory approach extended and tested in this thesis by including the demand-control model shows that individual forms of employee engagement practices are better predictors of various forms of job satisfaction than collective forms. In the context of employees' engagement practices, the dominance of the collective forms of these practices in the job satisfaction literature raises the question of whether individual forms are better predictors of job satisfaction than collective forms since job satisfaction is about the individual's appraisal of the job. The nature of job satisfaction also reinforces the fact that the individuality of employees' engagement practices will more likely motivate employees to use their creativity and contribute to the success of the organisation. Taking into account the fact that some employees may be intrinsically motivated, rewarding performance extrinsically has also been observed to be subjective in some cases and this raises concerns about the fairness of rewards and the process. Non-discriminatory working environment has been observed to complement the presence of employees' engagement practices. Further, as suggested by the demand-control model, job demands that are associated with employees' engagement practices and appropriate practices that may moderate the negative effects of job demands are important to consider when analysing job satisfaction.

Logit estimations conducted on merged data from management and employee surveys of the 2011 Workplace Employment Relations Survey (WERS) suggest that British employees are more likely to be satisfied with different facets of the job when allowed to participate and influence final decisions and rewarded for effort individually. The effects of these engagement practices are strengthened when employees work in non-discriminatory environments. Re-evaluating individual forms of employee engagement practices in the context of the demand-control model, we observe from the logit estimations that employees are more likely to be satisfied in low strain jobs than in high strain jobs. Further, Equal Opportunities (EO) policies are observed to be important practices in the workplace. These results are achieved by extending and testing the demand-control model, accounting for job demand, control and EO policies.

Table of Contents

List of Figures

List of Tables

Chapter 1.   Introduction

Employees being the most valuable assets of a workplace, their satisfaction with the job will significantly influence their exertion of effort and commitment to their job and workplace. As such, firms need to maximise employees' actual and potential skills in order to be more successful. Such attitudes of firms have been associated with organisational changes outlined in the literature such as the introduction of employees' engagement practices. The arguments on employees' engagement practices allude that these practices are employee-centred and are aimed at ensuring a committed and motivated workforce. Thus, a consideration of employees' satisfaction with various aspects of the job is important.

The importance of job satisfaction means job design is a major determinant of workplace attitudinal and behavioural reactions (Panatik et al., 2011). De Jonge et al. (1999) also pointed out that there has been an increase in research interest concerning the relationship between job characteristics and employees attitudes and behaviours (job satisfaction, health problems). They argued that such research helps in the redesigning or restructuring of workplaces. In addition to being an important issue when considering job design, job satisfaction serves as an important predictor of the overall wellbeing of an individual. Job is an important part of individuals' lives, thus, findings from the investigation of job satisfaction should not be underestimated. Job satisfaction will be used as the measure of employees' wellbeing in the job and this also represents the utility from working.

We will therefore use on-the-job utility and job satisfaction interchangeably in the thesis. The utility from working can be defined as a positive emotional state that is induced by the appraisal of one's job. Utility is therefore suggested as a major driving force of employees' decisions (Locke 1976). Satisfaction in general is defined as depending on expectations, needs and values (Clark, 1996; Clark and Oswald, 1996 and Clark, 1997). However, this does not imply that the measures of job satisfaction are not prone to problems, and situational factors conditions will impact the measurement. This includes for example mood at the time of measurement or the time frame of the questions.

Vila and García-Mora (2005) suggested that job satisfaction is employees' assessment of the monetary and non-monetary gains from the job, which is based on their expectations and personal preferences. Jobs with attributes such as the availability of autonomy, the opportunity to learn and use skills are suggested to enhance job satisfaction but too many[1] or too few of these job attributes can result in job dissatisfaction. Thus, the right combination is required in the firm. It has also been suggested that job dissatisfaction arises when: the value of the alternatives available to the employee – net mobility costs – is rising and there is no change in the level of attractiveness of such alternatives (Hamermesh, 1976; Delfgaauw, 2007). The general view of job satisfaction is that employees tend to be less satisfied with jobs when the unemployment rate is low. That is, employees are less satisfied with jobs when there are more alternative jobs. If the rise in unemployment does not affect the wage level, those that remain in employment tend to express more satisfaction with the job.

In sum, the general theory suggests that the presence of job enrichment programmes can ameliorate productivity and job satisfaction by increasing the benefits of being in employment over other alternatives available to employees (Hamermesh, 1976). Furthermore, Delfgaauw (2007) suggested that the availability of information about the reasons for labour mobility can help to reduce labour turnover and this in turn reduces the cost associated with labour turnover. Extending such availability of information to the industry can help shape policy measures so as to reduce labour turnover in major sectors of the economy.

This general view of job satisfaction also relates to the job matching and search theories. These theories focus on exit/entry and employee-employer matching. The theories suggest that the employee's decision about whether to stay in the job or to quit and how much effort to devote to the job are all likely to partly depend on the comparison of the benefits of the current job with alternative opportunities. If employees are dissatisfied with the current working conditions, they may move to another job. Apart from the dissatisfaction with pay resulting in shirking, dissatisfied employees may also be more motivated to organise or join a union so as to be able

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[1] Too much as in increasing work intensity is suggested by Mohr and Zoghi (2008) to result in job dissatisfaction.

to voice their grievances or embark on strike activities (Freeman 1978; Bryson et al., 2004).

Job satisfaction until recently has been neglected by economists possibly because it has been suggested to be subjective in nature, thus, too noisy to have any analytical value (Hamermesh, 1999). In 1995, Veenhoven's review on the developments in 'satisfaction-research' highlighted that questions on satisfaction do not measure satisfaction precisely. The responses to satisfaction questions can be affected by the location of the interview session, the characteristics of the interviewer, the construction of the satisfaction questions as well as the sequence of questions.[2] Also, the response to job satisfaction questions that is based on a re-assessment of the job so as to make an instant judgement is another source of response-bias. Such a re-assessment may be based on a recent change in the workplace or a quick re-evaluation of the cost and benefits associated with the job. Moreover, Freeman (1978) suggested that such a subjective variable may result in complexities because it tends more towards psychological states.

However, Freeman (1978) in his analysis pointed out that the answers to questions regarding employees' satisfaction with their job actually serves as a channel of information about economic life and this should not be neglected. Also, due to the high screening and training costs incurred at recruitment, job satisfaction is considered important as it is suggested to be an important determinant of labour turnover and inter-firm mobility. The investigation of such a determinant in turn proffers suggestions on how firms can establish long-term employment relationships.

Satisfaction with pay and other aspects of the job, which has witnessed an upsurge in research by psychologists, sociologists and economists recently, are considered by economists as measures of employees' wellbeing. This can be explained as overall job satisfaction being a significant predictor of important economic behaviour. That is, it explains various labour market facts such as quits, job tenure, unionization, absenteeism, productivity and collective action (Wood, 2008; Clark, 1996; Clark and Oswald, 1996; Clark, 1997 and Bryson et al., 2004). Apart from all these labour market facts, Dawal et al. (2009) indicated that a satisfied workforce is also needed for the survival of the firm in the market. Collectively, these studies provide insight

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[2] Veenhoven (1995) highlighted that the preceding sequence of questions may affect the interpretation of the satisfaction questions.

into the fact that job satisfaction is very important and job satisfaction related to labour market behaviour because it reflects employees' expectations about their working conditions relative to alternative job opportunities

In ensuring employees' job satisfaction and a committed workforce, employees' engagement practices have been widely studied and conceptualised differently. Across the Industrial Relations, Management and Human Resource Management (HRM) disciplines, the term 'employees' engagement practices' have been referred to as: 'high performance work practices', 'high involvement work design', 'participative management practices', 'employees' empowerment' or 'workplace democratisation practices' (Wood and de Menezes, 2011; Appelbaum et al., 2000; Zatzick and Iverson, 2011; Mohr and Zoghi, 2008; Hammer and Stern, 1980; Seibert et al., 2004). These practices are employee-centred and associated with management providing: opportunities for employees' involvement and participation that can include information sharing and reduced status distinctions; training and development; and incentives to encourage employees to participate. Through these opportunities, employees develop their skills, have greater influence over different aspects of their job and are creative and more effective in their effort (Barling et al., 2003). Building on this literature, employees' engagement practices may be defined as a workplace policy that is designed to ensure that employees are committed to the workplace's goals and values and are motivated to contribute to the workplace's success. This definition reveals that these engagement practices are facilitated by management. Different studies suggest various components of employees' engagement practices and as such, it is important at this point to define the focus of this research.

When we refer to employees' engagement practices in this study, we mean employees' participation in decision-making, their involvement as well as their payments based on individual or group performance, if any. Employees' participation as a broad term extends beyond participation in decisions to include employees' participation in returns. Participation in returns and payments based on individual or group performances constitute motivational elements and they facilitate employees' participation and involvement in the workplace. Participation in returns is different from performance-based pay because it depends and varies with the performance of the workplace where employees work and constitutes an entitlement to the employee (Perotin and Robinson, 2003). Ben-Ner and Jones (1995)

and Bakan et al. (2004) for example, suggested that the term employees' participation is a combination of 'participation in returns' and 'participation in decision-making'. The opportunities to participate in decision-making and in returns are quite different and these opportunities have been clearly distinguished in the literature.

Ben-Ner and Jones (1995) defined employees' participation in decision-making as rights that include the power to be able to make decisions for the organisation, organise tasks/jobs and control the pace of work. The authors refer to this practice as sharing the control rights with employees. Aghion and Tirole (1997) defined participation in decision-making as employees being encouraged to contribute to organisational decision-making and this type of participation ranges from consultation with employees on organisational matters to employees' control over their work and work environment. In an earlier study, Driscoll (1978) referred to participation in decision-making as an 'efficacy-related variable'. That is, this practice refers to the feeling of being able to influence workplace decisions.

According to Drake and Mitchell (1977), participation entails the power redistribution process. That is, the opportunity for employees who have previously not been involved in consultations, to make significant contributions during the decision process. Thus, this delegation of power results in greater motivation and satisfaction. The redistribution of power as highlighted by Drake and Mitchell (1977) can be vertical – employees having power relative to bosses or managers – or horizontal – power based on the combination of ideas from two teams before a decision is made. Employees' participation in decision-making has been defined in various ways but it basically revolves around workplace practices that are mostly initiated and determined by management (Cox et al., 2009) to provide employees with the opportunities to exercise influence over a wide range of issues in the workplace. That is, these practices are intended to provide employees with information to facilitate a two-way communication of ideas and opportunities to participate in workplace decision-making. For this reason, this research utilises the definition of employees' participation in decision-making considered in the study by Ben-Ner and Jones (1995). The authors suggested that employees' participation in decision-making refer to management-led mechanisms through which employees play some part in decision-making regarding their job and workplace. That is, limited control opportunities are made available to employees. We operationalise

this definition by mainly considering the use of suggestion schemes when consulting with employees and this represents individual employee's participation.

Employees' participation in returns on the other hand is defined as the right to be able to participate in benefits generated from the activities of the firm (Ben-Ner and Jones, 1995). This sort of participation is associated with motivational elements and it is expected to incentivise employees to use their knowledge and creativity for the benefits of the workplace (Wood and de Menezes, 2011; Appelbaum et al., 2000). Employees' participation in returns can take the form of profit sharing (cash and deferred profit sharing) and Employee Share Ownership Plans (ESOPs). ESOPs can take the form of stock options, free shares or shares bought by employees at a discount irrespective of whether or not shares are held in a trust and whether or not employees invest profit sharing bonuses in these shares. The definition of this plan varies according to the country. In the UK, ESOP is a plan where employees own shares in the organisation where they are employed (Perotin and Robinson, 2003). As such, return rights that are shared with employees extends to future returns. In the US, ESOP refers to a plan where a portion of an employee's wage contributes towards a trust fund and then acquires the stock of the workplace (Buchko, 1993). Perotin and Robinson (2003) suggested that whether shares are held individually by employees or collectively in a trust, ESOPs may not necessarily be associated with opportunities to influence workplace decision-making in practice. Irrespective of the type of shares issued (voting or non-voting), employees have little or no control over the management of their shares held in a trust.

Employees' participation in returns has been found to be associated with greater firm and employee performance (Perotin and Robinson, 2003; Kruse et al, 2012; Buchko, 1993) particularly because of certain features such as the promotion of: a corporate culture that emphasises loyalty as well as group co-operation and commitment. Pendleton and Robinson (2010) suggested that these plans create a positive working relationship between management and employees because employees' rewards are linked to corporate performance. As such, there is an alignment of employees' interests with those of their employer and they are motivated to exert effort and contribute to the success of the workplace. In sum, ESOPs are associated with property rights sharing and this differentiates such plans from the limited control opportunities made available to employees through

participative management (employee involvement) and payment schemes (Perotin and Robinson, 2003; Hammer and Stern, 1980).

The term, 'employees' involvement' on the other hand refers to employees' level of responsibility to execute and manage their work tasks (Wood and de Menezes, 2011; Zatzick and Iverson, 2011). That is, employees have a degree of control over the tasks and how they do their job and as such, tend to have decision-making authority over work-related activities. Moreover, Zatzick and Iverson (2011) suggested that there are other Human Resource (HR) practices like information sharing (represents top-down communication) that facilitate and make employees' involvement more effective. That is, if workplaces want employees to make sound decisions, they must provide information about the workplace's overall performance, changes, staffing and finances. Thus, we can say that HR practices facilitate employees' involvement through job control and information sharing.

We operationalise this definition of employees' involvement by examining employees' level of influence in the workplace and various information sharing mechanisms. As identified in the literature (e.g Perotin and Robinson, 2003), employees' participation in decision-making and employees' involvement are different and independent of each other in the sense that employees may be involved in the workplace through influence over how their tasks are performed but may not participate in broader decisions regarding the workplace. For example, Kato and Morishima (2002) and Bae et al. (2011) distinguished between shop-floor decisions (employees' involvement) and participation in management-level[3] decisions through joint labour-management committees.

Aghion and Tirole (1997) considered these concepts of employees' participation in decision-making and involvement as being jointly related to the term, delegation of authority to employees. This is very similar to what we defined earlier as employees having some degree of control over their work tasks and being able to participate in broader workplace decisions. According to the model developed by Aghion and Tirole (1997), authority is divided between formal authority (right to decide) and real authority (effective control over decisions). The authors show that real and formal authorities depend on asymmetric information. That is, an informed

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[3] Level here refers to the specific unit that is being considered. This specific unit may be management, employees, and teams. In this study, we considered constructs that are measured both at management and employee levels.

employee may present a sub-optimal project that has been approved by a less informed manager mainly because the latter fears choosing a worse alternative. In this example, the employee has real authority but without formal authority.

The manager is said to have formal authority when choosing the optimal project. A manager with a large number of projects under his jurisdiction may find it difficult to acquire information on each project. As a result, proponents of employees' participation have argued that the delegation of formal authority to employees reduces the workload of managers and in turn facilitates employees' initiative. Also, delegation reduces employees' disappointment about rejected proposals and thus encourages employees' participation in the firm. All these arguments however do not necessarily suggest that there will not be an increase in the use of initiative when formal authority is vested in the manager. The model suggested that if an urgent decision has to be taken, the manager may not be able to gather sufficient information and so may just have to approve the proposal. With such approval and the generation of benefits to the firm, the manager will tend to leave such decisions to the employee; thus increasing employees' initiative but reducing the manager's control. As a result of the trade-off between employees' initiative and manager's control, the model suggests that employees tend to have formal authority over decisions that are regarded as being unimportant by the manager and those that the manager does not have expertise in. The model also stated that the centralization of decision-making adversely affects the communication link between employees and management. In sum, these studies show how employees' engagement practices are designed to affect job satisfaction – through influence on employees' motivation.

The principal objective of the thesis is to examine the individual and joint effects of individual forms of employees' engagement practices on various dimensions of job satisfaction in British workplaces while controlling for the level of job demand. This thesis focuses on the specification and empirical analyses of employees' engagement practices and job satisfaction among British employees (both male and female). The study extends Lancaster's (1966a) consumer theory approach to the workplace by developing a conceptual model that analyses the effects of employees' engagement practices in workplaces. In particular, the model shows that the presence and effects of employees' engagement practices are constrained by the level of job demand that employees face. This is a contribution to the research on employees' engagement practices that has largely focused on the collective means of engaging employees in

workplaces. In this regard, the study draws important insights from Economics, Work Psychology, Human Resource Management (HRM) and Industrial Relations.

The outline of the thesis is as follows. Following this introductory chapter, *Chapter 2* focuses on the motivational aspect of our definition of employees' engagement practices, incentives. In this chapter, we show that employees can be motivated extrinsically (through the use of individual or group incentives) or intrinsically. Intrinsic motivation is suggested to be linked to employees' participation in decisions, reason being that the satisfaction or sense of fulfilment brought about by employees' participation in decisions is intrinsic in nature. Apart from incentives, *Chapter 2* also considers the importance of fairness in the workplace. The presence of EO policies is suggested to strengthen the presence of employees' participatory practices and incentives. In sum, we suggest that employees' engagement practices, incentives and EO policies are important in the workplace and their effects may be largely interactional if employees' participation in decisions, incentives and EO policies are complementary practices.

Chapter 3 outlines the concept of employees' engagement practices and the major reasons for these management-led practices in workplaces. Although these practices are observed to positively influence job satisfaction and firm performance, the presence of these practices has also been suggested to be associated with costs such as psychosocial hazards, implementation costs. As a result of these costs, some studies suggested various solutions by emphasising both individual and absolute forms of control as well as formal health and safety training programmes in the workplace. However, a number of studies show that the suggested solutions may not be adequate as some forms of absolute control (such as employee ownership schemes) influence the shift of employees' focus from their health and safety needs to the survival of the workplace in the market. Apart from employees' engagement practices, *Chapter 3* also considers unions and other factors that determine job satisfaction; moreover, we highlight the potential problem of endogeneity that may be associated with the relationship between unions and job satisfaction. Also, we considered the importance of exploring different forms of job satisfaction rather than just one form.

In *Chapter 4,* we shift our focus to the Work Psychology and Industrial relations literature, which emphasised the importance of job control on employees' wellbeing whilst controlling for the effect of job demands. These studies suggested that two job characteristics – job control and demand – determined employees' wellbeing. A major part of this literature focused on psychological strain and stress as outcome variables while few analysed effects on job satisfaction. In undertaking these analyses, there was concentrated use of the demand-control model and the demand-control-support model. Demand-control model suggests that jobs are stressful when employees are faced with high level of job demand and low level of job control while demand-control-support model suggests that employees have the highest risk of poor wellbeing when they are faced with high level of job demand, low level of job control and low level of social support. In this chapter, we review in detail theoretical foundations and previous studies that analysed different hypotheses of these models. However, one major gap identified in this literature is that the joint effects of job control and demand have not been properly examined and reported results are mixed and confusing. One of the objectives of this research is bridge this gap in the literature.

Chapter 5 presents our conceptual model by building on the concepts that have been discussed in detail in previous chapters. Our conceptual model is a combination of the standard utility model and the demand-control-support model. The standard utility model states that utility is positively related to income and negatively related to effort. Although the standard utility model explored in this study is based on Lancaster's (1966a) consumer theory approach. This approach states that the consumer maximizes his/her utility considering the characteristics of the good and not the good being the direct object of utility. Relating this to the workplace, we suggest that employees maximize their utility based on workplaces characteristics and as such, we are able to examine employees' satisfaction with different facets of the job. The maximization of utility is however subject to a constraint – job demand – and we are able to test this through the inclusion of the demand-control-support model in our model. In sum, the consumer theory approach used in the study facilitates the investigation of the utility model on various forms of job satisfaction while the incorporation of the demand-control support model enables us to be able to test the presence of different employees' engagement practices whilst controlling for the cost (job demand) associated with such practices.

Chapter 6 tests the first major hypothesis derived from the conceptual model by examining the effect of employees' engagement practices on various forms of job satisfaction in British workplaces for both male and female employees. The main effects of individual forms of employees' participation, employees' involvement, incentives, EO policies and management styles are examined whilst controlling for job demand, employee and workplace characteristics. These analyses are done using data from the management and employee surveys of WERS2011. WERS2011 provides rich information on consultation procedures, job control, motivation issues, fair treatment at work, employee characteristics and workplace characteristics. After merging data from management and employee surveys, our feasible sample size consists of 1,923 workplaces with 21,981 observations. Missing cases in the dependent variables are deleted while we used the 'dummy variable adjustment' approach to handle missing cases in explanatory variables. The final sample size is 20,596 observations. We empirically tested the hypotheses in this chapter for each form of job satisfaction by using the logit estimation techniques. We used logit estimation technique because we recoded the dependent variables – originally ordinal – as binary variables.

Chapter 7 examines the second major hypothesis by re-evaluating the effects of employees' engagement practices in the context of the demand-control model. This study advances the findings on the demand-control model by explicitly testing the types of jobs proposed in the model as well as the significance of the inclusion of EO policies in the model. We used the same data as in the previous chapter but the sample size reduced in this chapter because we conducted Principal Component Analyses (PCA) on the measures of job control and job demand. The missing cases in the principal component indices are treated using the imputation method while missing cases in other explanatory variables are treated using the dummy variable adjustment method. However, 47 cases could not be imputed and these are dropped from the data. Apart from reporting estimated coefficients from logit models, we reported some marginal effects. Also, the potential endogeneity problem associated with the relationship between union membership and job satisfaction is addressed in this chapter because they are both employee-level variables. We estimate a recursive simultaneous bivariate probit model to test for the potential endogeneity bias because both variables are binary.

Chapter 8 concludes by presenting a summary of findings and the original contribution of the thesis. In this chapter, theoretical and empirical implications for the literature on employees' engagement practices and job satisfaction are outlined. Also, the implications for employers and workplaces as well as recommendations for future research work are highlighted.

Chapter 2. Motivation and Incentives

2.1 Introduction

Economic theory and especially the principal-agent framework suggest that people work because of the tangible incentives[4] they receive. That is, people work hard only if they receive monetary compensation for doing so. It has been observed on the other hand that extrinsic rewards are still valued by workers but they are also satisfied when such incentives are accompanied by intrinsic rewards (Zajonc, 1965; Ellingsen and Johannesson 2007; Fehr and List, 2004). Thus, it is suggested that the incentive scheme in the firm should be utilised in conjunction with intrinsic rewards. However, Frey and Jegen (2001) suggested that incentives may destroy intrinsic motivation. Incentives are particularly of relevance when wages are fixed and in the presence of asymmetric information and uncertainty. Asymmetric information in this context refers to when the firm has incomplete information about the rate of the exertion of effort by workers. In effect, employees tend to use their discretion in exerting effort and this is assumed as given in the traditional school; this is termed as X-efficiency (Leibenstein, 1978).

According to the principal-agent framework, incentives will be offered in order to motivate workers but these incentives also have their benefits and costs, which will be highlighted later on. On the other hand, the traditional economic paradigm (efficiency wage theory) considers that workers can be motivated to exert effort when the firm pays above the market wage. However, a sub-model of the efficiency wage theory asserts that by raising wages above the market wage, the firm's demand for labour reduces. The shirking model of the efficiency wage theory suggests that employees' motivation is enhanced when the unemployment rate is high because it is more beneficial to work rather than shirk. However, there are instances where rewards in kind motivate workers rather than monetary incentives or a pay rise as

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[4] Incentive is defined as a form of intervention that tends to affect the behaviour of an individual and also significantly changes the costs or benefits of the given task (Bowles and Polania-Reyes, 2012).

shown in the gift-exchange theory[5] (Akerlof, 1982). This is another sub-model of the efficiency wage theory as workers reciprocate the gifts from the firm with the exertion of greater effort.

The incentives given by the firm, which consist in part of a wage, are expected to facilitate the control opportunities available to employees and invariably influence on-the-job utility by lessening the negative effects of job demand on employees. However, in some studies and like in the case study utilised in Akerlof's study, the undermining effect of monetary payments may be implied. The cash posters were not expecting an increase in wage in return and there is the possibility that the cash posters may have viewed an increase in wage as an unfair gesture by the firm, which will in turn undermine their effort. The incentives were suggested to have undermining effects in the sense that an increase in wage as a result of the incentive scheme is contingent on the increase in the effort of the cash posters that may suggest a lack of trust.

This argument about the undermining effect of extrinsic rewards (both positive and negative rewards) has been shown in a series of studies on intrinsic motivation. This implies that individuals tend to value an activity they are not extrinsically rewarded for in return. Thus, such individuals are said to be intrinsically motivated. Ellingsen and Johannesson (2007) suggested respect as a factor that promotes intrinsic motivation as they highlighted employees wanting to be appreciated and recognised for a job well done rather than only being extrinsically motivated. These authors stated that employers can intrinsically reward employees by according them the required attention, being readily available for any questions (having a 'listening ear') and being positive about a worker when relating to other co-workers in the firm and this in turn fosters respect from others in the firm.

According to Bowles (1998), incentives mostly entail reward for the exertion of effort and take the form of extrinsic rewards – "rewards that are unrelated to the activities being motivated" (p.90). In Bowles' (1998) words, all the points outlined

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[5] This theory indicates the involvement of social norms that tend to elicit behaviour contrary to what the basic micro framework predicts. That is, due to the fact that firms can pay above the market-clearing wage and labour can accept less for the effort exerted, the gift-exchange theory is distinct from the standard theory (where labour is expected to demand the corresponding pay/benefits for the exerted effort and the firm is expected to pay according to the effort exerted).

above show how economic issues such as forms of reward indirectly affect preferences. Preferences are the characteristics of individuals that determine the course of action taken about a situation. Based on consumption activities, the preference for a particular good may be as a result of a craving for that good or religious prohibition regarding it. Thus, preference that accounts for an individual's action goes beyond taste.

However, Bowles (1998) argued that if preferences are endogenous with respect to economic institutions, it would be important to distinguish between the effects of incentives and the constraints of the institutional components on behaviour and the effects of the institution on preferences. The author further stated that regardless of whether preferences are endogenous or exogenous, preferences are internalised. This is because preferences that are learnt under some particular circumstances generally become motives for behaviour. Thus, it is likely that the more important effects of economic institutions on preferences occur through learning. This proposition can be used to explain the findings on higher job satisfaction expressed by women rather than men who work in the same environment (for example, the study by Clark, 1997). It may be that the expression of more satisfaction with a job by women is due to what they have learnt or dealt with in their previous job. The effect of what is learnt may be a low expectation, hence the motive for their behaviour in the current job. Learning by doing may also be considered as another means of generalising preferences. Behaviours that are found to be successful in coping with the tasks of one sphere of life can be generalised to dealing with tasks of other spheres of life.

Gifts-giving was found to positively influence productivity in the experiment carried out by Kube et al. (2012) at a German University. The findings indicated that rewards in kind (thermos bottle) increased work performance by 25%, whereas cash rewards did not have a significant impact. The difference in impact was not due to a biased perception about the price of the bottle or the preference for a non-monetary reward. The difference in impact was due to employees valuing the time, money and effort invested in the preparation and presentation of gifts. This statement was indeed confirmed in an experiment where workers were given cash that was beautifully wrapped. Moreover, as a result of the effort and time invested into the preparation of the gift, workers reciprocated such a gesture with increased performance as large as a 30% increase in the output produced. The authors

concluded that the nature of gifts significantly determines the reciprocal strength of employees.

With emphasis on the importance of incentives in the presence of asymmetric information and uncertainty, Alchian and Demsetz (1972) emphasised the risk of providing collective incentives. They suggested that the provision of collective incentives in the presence of asymmetric information in the firm poses free riding risks. The firm is viewed as a team where members act from self-interest. Alchian and Demsetz (1972) however suggested that if employees partake in the returns accruing to the firm, there is a tendency for shirking to be reduced. Considering the presence of incomplete contracts, terms such as fairness, trust, reciprocity and gift-exchange have been widely employed in the analysis of principal-agent relationships and these terms will be frequently used in this chapter.

This chapter will consider the standpoint of economists regarding motivation; this will entail highlighting when incentives are required and when they are effective. Different types of incentives will be outlined. However, as not all individuals are self-interested and extrinsically motivated, intrinsic motivation will also be explained. The response to the rewards that facilitate intrinsic motivation will be shown. Also, the factors that crowd-out such motivation and how such crowding-out can be avoided will be considered. The penultimate section considers the effect of equality plans in the workplace as they have been argued to complement the presence of engagement practices. The last section concludes.

2.2   Rational and Opportunistic Individual Motivation

Economists assume that money is the factor motivating any individual to undertake a task with the intention of making profit. Under the traditional paradigm where there is full employment, imperfect monitoring and workers receiving the market wage, there will be an incentive to shirk. Employees will prefer to engage in more leisure activities so as to maximise their utility and exert less effort. An explanation for this is that when a worker shirks, he may be fired but since there is immediate employment, there is no blame for shirking. Shapiro and Stiglitz (1984) however argued that with employers paying efficiency wages (paying more than the market wage); workers are induced to exert more effort due to the fear of unemployment because the demand for labour is reduced.

As a result of this, individuals tend to weigh the benefits and costs of a particular task and then select the tasks that are of high benefit or are associated with fewer costs. The theoretical approach to doing this is known as the *rational choice theory*, thereby, making Cost-Benefit analysis a form of the model. The rational choice theory however implies that individuals only tend to be interested in the maximisation of work benefits for themselves and would act from self-interest. Here, emphasis is on individuals as they are the ones who make the choices based on their subjective evaluation of the task and the utility to be derived upon completion (Jackson, 2005).

This theory is a major component of the consumer preference theory as consumers make rational choices concerning purchases so as to maximise their utility. The same rationality that operates in the rational choice theory operates in the consumer preference theory. Information plays a key role but even without enough information, individuals still maximise their utility. That is, with individuals having an understanding of the array of options before them, they tend to select the ones that promote their objectives.

Evidence has shown that this self-interested behaviour may be reduced with the provision of incentives. Thus, situations when incentives are needed and are effective will be considered in the following sections.

2.3   Individual Incentives

2.3.1 Introduction

Economic theory suggests that the use of individual incentives tends to induce workers to exert more effort up to the point where the "marginal cost of effort equals the marginal value of output", while collective incentives are likely not to have any impact due to free riding problems (Lucifora and Origo, 2012, p.2). First and foremost, incentives are utilised so as to align the interest of the firm with that of workers as a result of asymmetric information. Following from the principal-agent theory, the main aim of utilising incentives by the firm is for the employee to exert a great deal of effort. The payment must be such that the employee will be induced to choose a higher level of effort. The principal-agent theory will not be set up here but it is important to note that such use of incentives poses a risk to the employee. It is risky in the sense that uncertainty is inherent as the reward will vary with the gross

profit of the firm. This invariably implies that the better the performance of the employee, the higher the level of incentive. With such uncertainty characterising incentives, the principal-agent theory posits that the agent will demand a higher expected value of income to compensate for the inherent risk.

Focusing on individual incentives, the measurement of a worker's performance and uncertainty are two major factors determining such incentives' effect on the exertion of effort in the presence of information asymmetry. The measurement of individual productivity may not be realistic in some circumstances like the subjective assessment of the employee. However, studies have observed that most firms that operate the performance pay structure do so when the cost of measuring output is low (that is, when output is easily quantifiable) as excellent workers would want their output measured (Lazear, 1986). Inadequate measurement may therefore have an effect on the exertion of effort and labour turnover. However, the incentivising process may just be to offset effort and the risk taken by the employee and may not necessarily result in on-the-job utility.

Cooke (1994) also emphasised that monitoring costs is an additional factor that determines the use of individual incentives. The firm may ignore the measurement of output and information about the ability of workers and provide incentives on the basis of inputs such as effort or hours worked (salary) when the cost of measuring output and monitoring is high. On the other hand, the firm can take the ability of the workers into consideration and provide incentives on the basis of the output produced (performance-related pay such as piece rates). Lazear and Shaw (2007) observed a shift in rewards or incentives from the traditional fixed salary to pay-for-performance. The proportion of firms offering individual incentives to 20% and above of their workforce is suggested to have risen from 38% to 67% against the increase of collective incentives from 26% to 53% (Lazear and Shaw, 2007).

Individual incentives are argued to be associated with increased effort because of differences in pay. Individual incentives at a particular level do not actually induce the employee receiving it but the employees below that level. Thus, the larger the difference in pay at a particular hierarchical level, the higher the exertion of effort (Lazear and Shaw, 2007). Lazear (2000) confirmed that the larger difference in pay is as a result of the greater variance in output due to the exertion of effort in the presence of piece rates. This finding is quite valid in reality, be it in workplaces or a

game competition – if the difference between the winner's prize and loser's prize is quite large.

On the other hand, individual incentives may result in work intensity, as employees will perform as best as they can to get promoted. It may also breed competition and envy[6] in the firm including ways to outperform or usurp between employees. Thus, the workplace should ensure a balance between the benefits and consequences of any incentive scheme before implementing it. Moreover, an implication of this performance related pay scheme is that employees may tend to self-select into jobs. This is explained as excellent employees tend to leave firms offering a fixed wage for other firms that will recognise their ability and accord them due respect. Thus, performance may be achieved as employees self-select into the appropriate firms. However, an empirical investigation of such firms' performance will be prone to a potential endogeneity problem at the employee-level.

These arguments on the implications of individual incentives typify the use of such incentives in workplaces composed of employees with different abilities. Salary on the other hand tends to thrive in firms where employees have equal abilities and in turn inhibit self-sorting. Another implication of performance related pay is that if reservation utility (utility derived from another job) is high, the firm has to incentivise its employees according to the output produced as the absence of this will result in exits[7] (Lazear, 1986; Fakhfakh, 2004).

Other factors such as the heterogeneity inherent in individuals also facilitate the self-selection and sorting features mentioned above in that some individuals are intrinsically motivated and would prefer salaries. Also, risk averse individuals would prefer salaries as it is fixed and without uncertainty. However, an added advantage of the performance pay scheme is that it reveals workers that are not fully capable. This in turn gives the firm the opportunity to recognise those who require additional skills, knowledge or information, thereby improving the quality of the labour force.

Moreover, Lazear and Shaw (2007) suggested that a way to avoid the besetting problems of individual incentives is for the firm to ensure fairness with respect to

[6] These negative influences of individual incentives schemes were suggested to be eliminated when the heterogeneity of employees such as ambition is taken into account (Pouliakas, 2010).
[7] This assertion was confirmed in the panel estimation carried out on French firms as a positive relation was indicated between the inter-industry wage difference and exits from the firm (Fakhfakh, 2004)

pay and this can only be achieved if the firm is team-based. Also, Cooke (1994) posited that collective incentives not only reduce monitoring costs but also foster effective communication links among employees. With problem solving groups in the firm, collective incentive schemes are more effective and this will foster cooperation among team members. Incentives will be shared and the thought of usurping one another will be eliminated. Despite its advantage over individual incentives with regards to eliminating the issue of sabotage, it is still beset with the free riding problem that also has an adverse effect on the confidence of employees.

Bandiera et al. (2012) hypothesised that the free riding problem may be curtailed if employees can freely choose their team members as they will choose workers that they know. However, the utilisation of the collective rewards structure so as to incentivise the process could worsen performance more than when there were no teams. That is, employees may tend to sort into teams by taking into account the ability of team members. Excellent workers will want to pair up with each other especially those who are concerned about social status. Thus, excellent workers that do not have a corresponding excellent co-worker to pair up with will have to pair up with average or below average workers. With the perception that the excellent worker(s) will do the job and everyone will still share the incentives accruing to the task, there may be free riding. As a result of this, problems of free riding will still be inherent in some teams (Bandiera et al., 2012).

However, firms still employ problem solving groups as they are suggested to be more productive than individuals working on their own. That is, the skills of employees are combined in production (skills complementing each other) as the absolute advantage of each employee is utilised especially when complex problems have to be solved. Firms are also likely to compose teams when an employee, who has an absolute advantage in all areas of production, is scarce and expensive. Another advantage outlined in the literature is that quality circles promote communication among employees and in turn facilitate good understanding of cultures and beliefs, thus fostering a friendly working environment (Lazear and Shaw, 2007).

One issue indicated by Lazear and Shaw (2007) was that a problem solving group cannot be successful or associated with higher returns to the firm if there are no supporting practices such as training or collective incentive schemes complementing

its presence. Thus, complementarity among HR practices is emphasised. A point that should also be emphasised is that a team can only be effective in firms where employees are: allowed to use their discretion, allowed to influence decisions, are given tasks to accomplish and are not monitored. The next sub-section outlines previous studies on individual incentives.

2.3.2 Previous Studies on Individual Incentives

Wood and de Menezes (2011) demonstrated the effectiveness of individual incentives over collective incentives. Through the use of multi-level analysis on data from the 2004 WERS, they provided evidence that the provision of individual incentives facilitates employees' participation and involvement in the workplace and this in turn resulted in employees' job satisfaction. Additional evidence revealed that the combination of individual incentives and monitoring improved performance. Duflo et al. (2012) conducted an experiment on para-teachers[8] in India and their structural modelling indicated a decrease in absenteeism when teachers were monitored and offered real incentives for coming to school. This in turn had positive effects on students test scores.

Focusing on employees' performance, a shift to a piece-rate reward structure in an auto glass company in the US was also accompanied by an increase in productivity of 44% per employee (Lazear, 2000). The improvement was indicated to be as a result of the shift to piece-rate and the sorting characteristic of such incentives. This finding is in line with the economic theory as the basis for the implementation of the piece-rate scheme was to facilitate increased effort from workers. Not only do individual incentives improve performance, they also increase on-the-job-utility. Cornelissen et al. (2011) suggested that individual performance pay (bonus) is positively associated with job satisfaction. This finding can be explained based on the self-selecting feature of individual incentives that was emphasised by Lazear (1986). Employees self-select into individual incentives-characterised firms so as to be incentivised according to their ability.

However, authors like Bender et al. (2010) suggested that the intensity of work is associated with piece rate (output-based pay). Conducting a recursive bivariate

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[8] Para-teachers are defined as teachers with a short and flexible contractual status who work at primary schools and other educational establishments set up by Non-Governmental Organisations.

probit model to control for endogeneity associated with piece rate and using data from the European Working Conditions Survey (EWCS), they suggested that the positive productivity effects may eventually be offset by the cost of ineffective workers in the firm due to injury and fatigue imposed by piece rate.

2.3.3 Variations in the Incentives Literature

Apart from the provision of individual incentives, Bell and Van Reenen (2011) suggested that the proportion and size of incentives available to employees should be considered. That is, it is not only investigation into the availability of individual incentives to non-managerial workers that matters but also the proportion of the bonus available to them. Thus, the size of incentives has been suggested to impact on the behaviour and performance of employees. This section considers this debate in the literature. By estimating panel regressions in order to investigate the relationship between wages and firm performance where a corporate hierarchy is present, Bell and Van Reenen (2011) suggested that a wide pay gap tends to exist between blue and white collar employees in the UK. This finding was due to the fact that more bonuses tend to be given to senior managers. This pay gap however explains the small positive correlation between employees' pay and firm performance, as the bonus constitutes a small portion of their full pay.

In the same vein, Pouliakas (2010) investigated the magnitude of incentives (bonus/profit related pay) that can increase performance by utilising eight waves (1998-2005) of the BHPS. Conducting a multivariate analysis, evidence revealed that profit-sharing incentives were associated with higher job satisfaction but only profit-sharing incentives that were large enough had such effects. Small or no monetary rewards had a negative impact on job satisfaction and the finding was the same even after controlling for possible heterogeneity among employees. Thus, the 'V-effect hypothesis' of the study is confirmed. This confirmation implies that the increasing and decreasing effects of the magnitude of monetary rewards on performance and job satisfaction were supported.

In an earlier study by Gneezy (2003), a 'W' effect was indicated as positive and negative incentives (fines and punishments) were found to be associated with non-monotonic effects. Gneezy (2003) suggested that small fines may tend to induce an increase in shirking or no change in behaviour, while a small reward on the other hand tends to reduce performance. The negative nature of the small monetary

rewards can be explained in relation to the crowding-out theory. The introduction of small incentives into a system void of incentives would change the perception of the task. It was suggested that once monetary rewards are introduced, they should be large enough to increase job satisfaction. The findings from Pouliakas' (2010) study may have been different if other individual and collective incentives such as piece rate, merit pay and employee share ownership plans were considered instead of focusing on bonus schemes only.

Investigating the significance of various types of incentives, Hammermann and Mohnen (2012) examined the significance of non-monetary incentives. Utilising waves 2006- 2008 of the German Socio-Economic Panel (GSEP), their analysis underlined the economies of scale accruing to larger firms, thereby enabling the provision of more benefits but the provision of company cars was not significant. Also, self-selection was gender-, risk- and marital status-based and highly efficient and hardworking employees, employees with many tasks and employees at the top of the hierarchy tended to receive more non-monetary incentives. However, the specification of this study is confusing because the use of non-pay terms and conditions (workplace benefits) as measures of non-monetary incentives may not be appropriate as they may be quantifiable in monetary terms.

Having outlined all these arguments, it is important to underline that not all individuals are motivated by monetary incentives; in particular, some individuals gain pleasure from performing a task. A point here is that there is an inherent motivation that facilitates such selflessness. This is where the diversion to intrinsic motivation originated from and there is a growing literature in Economics that highlight this. The next section outlines this moral critique of the rational choice theory.

2.4   Intrinsic Motivation

Intrinsic motivation can be defined as the pleasure, knowledge and satisfaction derived from performing a task where there is no accompanying reward other than the task itself. This type of motivation does not just become evident when an individual reaches the state of accountability or when a task has to be performed. It starts from birth as babies are ready to learn without expecting a reward in return. This natural motivation can then persist until an older age and this will affect wellbeing and performance, as suggested by Ryan and Deci (2000). The authors

summarised their argument by stating that intrinsic motivation can only be promoted if the task has a novelty and challenge value for the individual.

In Ellingsen and Johannesson's (2007) study, it was highlighted that intrinsic motivation is associated with signalling characteristics by showing an individual's character. An example was given about non-profit firms where employees earn less than those in profit-making firms. They are said to be content because they see their employers sacrificing the opportunity for higher wages that could be attained in other firms. This implies that such employers who sacrifice a surplus will appreciate any sacrifice from their employees. In the authors' model of respect, it was discovered that signalling good performance through the exertion of effort fosters respect or the sense of being highly esteemed by employers.

This type of motivation is associated with rewards and Ellingsen and Johannesson (2007) suggested that employees have shown to appreciate intrinsic rewards such as appreciation and recognition for completing a task more than only being extrinsically motivated.[9] Their research study stated that intrinsic rewards can be demonstrated by employers providing employees with attention, availability (having a 'listening ear'), positivity and respect. Workplaces that provide such rewards tend to signal that 'they care about employees' success and wellbeing'. Therefore, it may suffice to say that intrinsic motivation and intrinsic rewards signal the motive and character of individuals and recipients respectively.

2.4.1 Benefits and Costs of Intrinsic Rewards

Intrinsic rewards are associated with benefits and costs. The review of studies by Ellingsen and Johannesson (2007) revealed that public recognition such as receiving gold or silver medals for perfect or good attendance records respectively throughout the year reduced absenteeism by 40% but this type of reward may also breed competition among workers. Similarly, attention by employers had contradicting results. Zajonc (1965) observed that attention provided by an audience is accompanied by benefits if the tasks undertaken by the agents had been done from

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[9] Extrinsic motivation is a term that denotes the act of performing a task in order to achieve a 'separable' outcome (Ryan and Deci, 2000). A separable outcome is considered in the sense that a child, for example, does his homework so as to avoid being disciplined by his parents with the latter being the separable outcome. Thus this behaviour is accompanied by pressure.

time-to-time, that is, if the tasks have been mastered; and costs if the tasks were new and the learning process was still on-going.

Trust as a reward was also suggested to increase performance. In an experiment, Fehr and List (2004) observed that if an employer showed trust by voluntarily not applying the standard procedures of penalties on employees who shirk, employees tend to reciprocate such a gesture and perform better than when the penalties were not in place. Thus, it might suffice to say that trust, typified by the deliberate refusal to utilise penalties, induces and reinforces trustworthy behaviour. The issue of trust was also indicated to elicit reciprocity in the investment game experiment carried out by Berg et al. (1995) observing two groups. Recipients in room B were found to reciprocate the gesture by recipients in room A and pay back a greater amount than the amount sent. Room A appeared to be trustworthy by sacrificing some of their money and one-third of room B recipients appreciated being trusted.

However, Berg et al. (1995) suggested that trust is associated with costs when employees are self-interested. That is, there may be an increase in shirking as workers tend to act in their own self-interest when they are not monitored. This was evident in the study by Berg et al. (1995) as the remaining two-thirds in room B did not reciprocate due to selfish gains or possibly did not interpret the gesture as a form of trust and thus reciprocity was not necessary. This research study is majorly concerned with the trust and reciprocity factors that have been fully analysed in the Gift exchange theory by Akerlof (1982). In the workplace context, employers are highly concerned with the cooperation of employees. With the adoption of various practices to enhance that, they expect a reciprocal workforce that will in turn improve performance. In sum, all these arguments show that the benefits and costs of intrinsic rewards should be considered before using them. The next section considers different effects of extrinsic rewards on intrinsic motivation.

2.5   Motivation Crowding Theory

2.5.1 Signalling Effects of Extrinsic Rewards

A consideration of Frey and Jegen's (2001) study on the motivation crowding theory revealed that they not only supported the view of Ellingsen and Johannesson (2007) that extrinsic rewards[10] may reinforce intrinsic rewards but they also stated that such

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[10] Rewards given based on outcome.

extrinsic rewards can crowd out intrinsic motivation under certain conditions. Benabou and Tirole (2003) suggested that extrinsic rewards may not convey the concern, respect, trust and all other information expressed by intrinsic rewards. Thus, the central notion of extrinsic incentives as reinforcing effort and performance from Economics' perspective is negated. This issue of crowding-out was first analysed based by Titmuss (1970) using blood donors. He followed the assumption that the introduction of extrinsic rewards reduced the rate of blood donation and analysed the crowding-out theory in the context of altruism. He suggested that extrinsic rewards negatively affected the message passed on by the altruistic behaviour and this may in turn deteriorate economic performance.

Supporting the view on change in the perception of the task with the introduction of extrinsic rewards, Gneezy (2003) also stated that the introduction of extrinsic rewards could be seen as an insult that may in turn reduce the effort exerted. Also, Bowles and Polania-Reyes (2012) posited that such introduction shows the motive of the giver, which in turn affects the recipient's motivation in undertaking the task. For example, if extrinsic rewards are offered instead of fines (negative incentives), the recipient may exert more effort when undertaking the activity. However, Bowles and Polania-Reyes (2012) suggested that it is actually not the incentives, as emphasised by Titmuss in 1970 that are responsible for crowding-out intrinsic motivation or altruism but the meaning of the incentives from recipients' point of view. When fines, taxes, subsidies and rewards for good performance are well designed, there will be less crowding-out. If incentives appear to be controlling, they will tend to negatively affect the recipient's behaviour. Bowles and Polania-Reyes (2012) however suggested that the recipient should be aware of the social benefits of the incentives so that when they are introduced, there would be a positive reaction to them.

Gneezy et al. (2011) analysed various means of crowding out pro-social behaviour or altruism.[11] They posited that the extrinsic rewards could signal the fact that donating blood is risky and this may discourage people from donating. Apart from the signalling effect, Gneezy et al. (2011) and Benabou and Tirole (2003) also posited that offering extrinsic rewards has a reputational effect on intrinsic

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[11] Frey and Jegen (2001) considered the motivation crowding theory in the context of intrinsic motivation, while Benabou and Tirole (2006) and Gneezy et al. (2011) considered it in the context of altruistic behaviour.

motivation, depending on the publicity of the rewards. The prize effect is overshadowed if the reward offered is so great that it shows the individual as being greedy, thus, diluting the person's image motivation. Benabou and Tirole (2006) also confirmed the argument about the detrimental effects of extrinsic rewards on altruism. They argued that extrinsic rewards may create doubt about whether the intention is altruistic or due to incentives. Additionally, the introduction of extrinsic rewards changes the focus of the agent from the task itself to the end-product that generates the reward. It should be noted that the argued detrimental effects of extrinsic rewards originated from the self-perception theory. This implies that, if the extrinsic reward offered is extremely high, agents will attribute their motivation for performing to the extrinsic reward and not due to the intrinsic interest in the task itself (Dickinson, 1989).

2.5.2 Controlling Effects of Extrinsic Rewards

Despite the fact that extrinsic rewards are associated with detrimental effects on intrinsic motivation, Gneezy and Rustichini (2000) were able to provide evidence that a large extrinsic reward is preferable to little extrinsic reward. They argued that it is better to offer a substantial extrinsic reward or not to implement a reward structure at all. However, this 'large enough reward' could also inhibit the behaviour of the recipient and could control the exertion of effort. This was confirmed in a further study by Gneezy et al. (2011) who observed that: crowding-out can occur in the short run when switching from no reward at all to little reward and could reduce effort. They also noted that when large incentives are offered, it could result in work pressure. Crowding-out occurs in the long run in the sense that since extrinsic rewards already signal bad news in the short run, agents have already made up their mind about what the task is like and the type of person the principal (employer) is so that when the incentive is removed in the long run, effort is permanently reduced. Benabou and Tirole (2003) on the other hand indicated that rewards tend to positively influence effort in the short run but demotivate agents in the long run when incentives are removed as self-belief in the ability to undertake the task is adversely affected.

Based on the arguments above, it was argued that the effects of extrinsic rewards on altruism could either be as a result of the amount of extrinsic rewards or their mere presence, or a combination of both (Bowles and Polania-Reyes, 2012).

2.5.3 Possible Solutions to the Crowding-out Nature of Extrinsic Rewards

The evidence provided by Frey and Jegen (2001) was basically based on studies carried out in Psychology and Econometrics. Most of the psychology studies indicated that effort or motivation is negatively affected when an intrinsic reward is substituted with extrinsic rewards. However, Gneezy et al. (2011) and Benabou and Tirole (2006) emphasised that the way extrinsic rewards are designed and the popularity of the contributor (altruistic individual) is quite important when considering the effects of such rewards on individuals. If altruism is not public in nature, monetary incentives can be effective and intrinsic rewards could have a positive or neutral effect on intrinsic motivation. However, if the contributor is popular, any good deed may be interpreted as a medium of becoming more popular, thereby limiting the effectiveness of extrinsic rewards. Ellingsen and Johannesson (2008) suggested an antidote (in the context of monetary donations) for combating such a reduction in altruism. Using a dictator game experiment, they found that the opportunity provided to recipients to be able to disseminate anonymous feedback about allocators positively influenced the sharing norm. The allocators are those who are in charge of dividing funds and who have the authority to determine the division ratio. A positive feedback (praise) encouraged the allocator to utilise an equal sharing ratio or to even give more money, while negative feedback that serves as punishment (shame) will affect future allocations as humans always want to be praised. Dickinson (1989) however suggested that when incentives are non-competitive but complementary, and based on achievable performance standards, extrinsic rewards are non-detrimental.

In summary, Frey and Jegen (2001) emphasised that external intervention through monetary rewards or monitoring may either crowd-in or crowd-out intrinsic motivation. Crowd-in occurs when rewards are seen as being appreciative of the effort exerted and in turn increases performance, while crowd-out occurs when rewards are seen as controlling and invariably nullifies its disciplining effect. Moreover, the crowding-in and crowding-out effect depends on the size of the price- and the psychological effects of such an intervention and this can be shown graphically:

Figure 2.1: Relationship between the Price and Psychological Effects
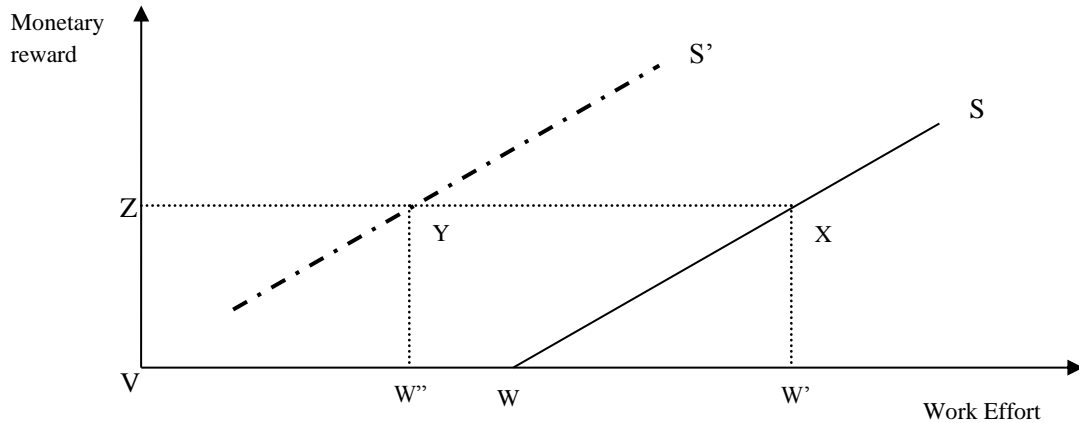
Source: Adapted from Frey and Jegen (2001).

From the diagram above, S, the traditional supply curve indicates the price effect and with an increase in pay from V to Z, the worker exerts more effort which is shown by moving from W to W'. However, the crowding-out effect of the pay rise shifts the supply curve from S to S' (normal supply curve), thereby attaining point Y and is accompanied by a reduction in effort from W to W" (reflecting the dominance of the crowding-out effect over the price effect). With intrinsic motivation fully crowded-out, any increase in pay would result in the exertion of more effort along the S' curve. Due to the fact that there are some cases where employees are intrinsically motivated and monetary incentives may be perceived as being controlling, the principal-agent framework shows how the assumption of intrinsic motivation being constant might not always be appropriate.

Based on Dickinson's (1989) proposition about the non-detrimental effect of monetary rewards on performance, we expect that the use of merit pay or pay based on individual performance in the workplace will not crowd-out the intrinsic motivation of employees. Apart from incentives facilitating employees' involvement and participation, previous studies (e.g. Perotin and Robinson, 2000) have also argued that EO policies tends to complement the presence of employees' engagement practices in the workplace. The next session outlines the theories and benefits of fairness in the workplace.

2.6 Theories on fairness

The gift exchange theory not only encapsulates social support in the firm but also equal treatment regarding compensation scheme (wage). Akerlof's (1982) study on the gift exchange theory highlighted that the influence of the 'norms of fair performance' becomes evident in the sense that employees who exert effort in excess of work standards expect to be treated 'fairly' by the firm in return. Being treated 'fairly' is considered as the firm being lenient with work rules that have binding constraints on some co-workers who they have sympathy for. This implies that reciprocity is a key feature of the gift exchange theory and it directly influences productivity. This gift exchange theory concerning fairness draws on some similar assumptions of the Fehr-Schmidt inequity aversion model. This model dwells on the fact that individuals exhibit social preferences that shape their decisions, especially preferences for reciprocal fairness, which was the type of social preference exhibited by the cash posters. According to Fehr and Fischbacher (2002), the exhibition of social preferences denotes that the individual not only cares about the allocation of incentives but is also concerned about the incentives allocated to relevant reference individuals (who may be co-workers, co-traders or relatives). Thus, the utility that stems from such preferences may be relative.

One type of such social preferences is reciprocal fairness. An individual with such preferences reacts to an action that is perceived to be kind in a kind manner and a perceived hostile action is responded to in a similar manner. The reaction to such actions depends on: if the consequences are regarded as being fair or not and the intention of the action. The fairness of the intention is in turn influenced by how equal the payoff distribution is with respect to the set of feasible payoff distributions, necessitated by the action. It is important to note the distinction between reciprocity and cooperation. Reciprocity is the response to an action without an expectation of material benefits, while cooperation is the response to an action in view of future material benefits.

Another type of social preference is inequity aversion. Such a preference is concerned with achieving an equitable distribution of material benefits. That is, inequity-averse individuals tend to ensure the increase in monetary benefits of a co-worker, for example when they fall below the equitable benchmark and they decrease the monetary benefits of a co-worker when they exceed the reference benchmark. It might suffice to say that inequity-averse individuals and those that

engage in reciprocal fairness tend to behave in similar ways as they are both concerned with the fair distribution of payoff.

All these types of social preferences are different from pure altruism because these types of social preferences do not occur in response to an act of altruism. An altruistic individual is always positively concerned about the material benefits allocated to a co-worker and not both ways like an inequity-averse individual. In sum, altruism can be referred to as 'unconditional kindness'. The opposite of such altruistic behaviour is envious behaviour and this is a type of social preference that negatively values the material benefit of a co-worker. That is, such individuals would be willing to decrease the payoff the co-worker receives regardless of the payoff distribution or the fair or unfair behaviour of the co-worker.

Accounting for social preferences was emphasised by Fehr and Fischbacher (2002) to be important when dealing with some major economic questions about cooperation and competition. In the case of the cash posters, reciprocal fairness played an important role in their cooperation with the firm and accounting for this in the analysis will provide an understanding of the effects of material incentives. Fehr and Fischbacher (2002) stated that reciprocity influences the cooperation problem in two ways. First, an individual will be willing to cooperate if he/she is sure that other individuals will cooperate. Thus, there is the exchange of a gift because the cooperation of others is a gift that is repaid to the reciprocal individual. Second, the reciprocal individual is willing to punish any individual that engages in free-riding and this in turn induces cooperation so as to avoid being punished.

Not only does reciprocity induce cooperation, it also facilitates extra effort more than what is enforced by monetary benefits alone and this was the case in the reference case study (the cash posters). Also, there may be the possibility that monetary benefits are perceived as hostile and in turn reduces the extra effort that is based on reciprocity. Fehr and Fischbacher (2002) extensively explained the importance of reciprocity for cooperation and the functioning of incentives. They observed that reciprocity-based contracts tend to elicit extra effort than contracts with explicit incentives. They suggested that reciprocity involves the exchange of a gift, which in turn provides a strong incentive to exert extra effort, while explicit incentive contracts are likely to be perceived as hostile and may even induce negative reciprocity (being fined for shirking). In sum, all these arguments indicate

that social preferences such as concerns for fairness and reciprocity are important when considering incentives, cooperation and job satisfaction.

2.6.1 Empirical Evidence on Fairness and Diversity in the Workplace

The fact that employees' participation positively affects job satisfaction has been outlined but its combination with equal treatment can greatly influence employees' satisfaction with different aspects of the job. Some studies have focused exclusively on the incidence, nature, and impact of EO policies in the firm (see Hoque and Noon, 2004). Another segment of the literature has emphasised that participatory practices and EO policies may be complementary since participatory practices help to determine the EO policies needed to facilitate employees' wellbeing. According to Perotin and Robinson (2000), EO policies show the firm having a formal statement on fairness and appropriate strategies in the workplace to avoid differential treatment. These practices include the way recruitment, promotion, training and performance appraisal schemes (such as pay) are modified to suit employees of different genders, for example, in the same way thereby having a significant effect on a disadvantaged group within the firm.

However, the explanation regarding the concept of fairness of pay is quite mixed in the sense that it could mean paying all workers equally even when abilities are different or paying according to the output produced. That is, the absence of different treatments on the basis of irrelevant characteristics such as gender or ethnicity. It should be noted that the general feature of incentive schemes in firms is unequal allocation. Employers tend to take into account different abilities and performance of employees and this feature was suggested by Goerg et al. (2010) not to lead to conflict in the firm. Goerg et al. (2010) suggested that employees would perceive that type of allocation as being due to the heterogeneity inherent among them. Ross and Sicoly (1979), on the other hand, indicated that if there are workers who are egocentric and feel they always perform better than others in given tasks but are not considered in that way by employers, the unequal allocation may breed conflict.

It was however observed that paying employees equally reduces conflict and competition and increases the monitoring of co-workers. However, it could induce free riding risks, as some workers will shirk since pay is not allocated according to individual output. Goerg et al. (2010) thus suggested that the heterogeneity inherent

among employees may appear through hierarchies in the firm. This can be explained in the sense that when employees are paid according to their relative position in the workplace, thereby making such a relative position a hidden form of inequality, each individual's stake in the performance of the firm will be known and cooperation will be fostered. Cooperation is enhanced in the sense that employees with lower stakes in the firm have the feeling that those in higher positions in the firm will exert more effort and this in turn induces those in lower positions to exert more effort.[12] Winter (2004) also indicated that some principals might not recognise an asymmetric reward scheme as a form of discrimination if they feel that a particular group of agents will be sufficient to successfully implement a task. Thus, this group is induced to exert effort while others are not.

Moving to other issues of discrimination in the firm, studies like Hoque and Noon (2004) have argued that most equality plans in British firms are without value to employees. They suggested that if the adoption of EO policies is to signal a positive image of the firm, then, it might be 'empty shells'. However, if they are implemented to address certain issues in the firm such as the recruitment of disabled and ethnic minority groups, it may be of value. In order to ascertain the validity of these arguments, Hoque and Noon (2004) investigated the incidence of these policies in the UK, their rate of accessibility with regards to employees and the potential practices supporting these policies and the characteristics of firms that harbour the 'valueless' policies. Utilising WERS'98, evidence revealed that firms: with employees that have a voice through unions that are part of a larger parent firm and have an HR specialist, are most likely to adopt EO policies. The results also indicated that most British firms that adopted EO policies did not introduce the related EO practices and thus, appeared to be 'empty shells'. Also, the 'empty shells' evidence suggested that hierarchy (professional status) was an important determinant of access to EO policies in the workplace. Managers were observed to have more access to EO policies and the size of the firm was also important. Valueless policies were more likely to be evident in smaller firms and the private sector.

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[12] However, it might suffice to say that the asymmetric reward scheme was found to be successful as employees at lower levels had asymmetric information about the exertion of effort by employees with higher stakes.

Moreover, Drydakis (2012) investigated homosexual individuals' job satisfaction by considering pay, promotion and the sense of being respected by employers in Greek firms. The empirical results showed that homosexual employees reported being less satisfied than heterosexual employees. The author found that job satisfaction was negatively related with the level of respect received from line supervisors, promotion prospects and pay. With some employees being less satisfied, there will be some disgruntled workers in the firm and this is unhealthy for the firm. With the author utilising data from the Athens Area Study and conducting an ordered probit estimation, these findings may however be biased due to the hostile attitude of Greece towards homosexuality. That is, the sample may have impacted on the findings. Also, only the effect of the sexual orientation of males on job satisfaction was considered. The findings may be different if Greece was neutral about the sexual orientation of males and if females were also considered.

In addition to the effect of fairness on employees' wellbeing, Perotin and Robinson (2000) were able to provide evidence that equality plans improve productivity by conducting an ordered probit regression. The authors also suggested that the presence of equality plans in combination with employees' participation had greater positive effects on productivity than the individual effects of each practice. Their analysis emphasised employees' participation in control and EO policies to be complementary practices as participation in returns had a negative impact on productivity when combined with an equality policy. This negativity was explained in line with the non-disadvantaged group not wanting to share incentives as it might adversely affect the portion they receive.

2.7   Conclusion

This chapter has highlighted the motivational aspects of our definition of 'employees' engagement practices' – incentives as well as intrinsic motivation. Furthermore, we reviewed the motivation crowding out theory as well as the importance of non-discriminatory working environments. Based on the studies reviewed in this chapter, we suggest that the presence of incentives and non-discriminatory work environments are important and these practices may be largely interactional if they are complementary practices.

Employees' participation in the workplace –the delegation of authority to employees where a competent contribution can be made – is associated with employees'

increased motivation. This implies that there are more important practices in the workplace that promote participatory and engaging atmosphere in the workplace. The next chapter highlights the significance of employees' participation and involvement as well as other determinants of job satisfaction.

Chapter 3. Employees' Engagement Practices, Unions, Job Satisfaction and Firms' Performance

3.1 Introduction

The rise of industrial unionism in the United Kingdom in the nineteenth century showed unions seeking to improve employees' standard of living through collective bargaining for higher wages, ensuring decent workplaces for employees, expanding the rights of employees, ensuring employees have some degree of work self-respect and dignity and providing union members with insurance against unemployment, accidents, illness (Boyer, 1988). As a result of extending the rights of employees, labour contracts were detailed with information regarding various aspects of the job, such as promotion opportunities, anti-discrimination policies, disciplinary measures and procedures, procedures for leave of absence during illness or holiday and health and safety regulations.

Despite all these contractual provisions as a result of the presence and effort of unions, management was still found to dominate in workplaces and to retain authority over the operations of workplaces with employees having little opportunity to participate in decisions or influence decisions regarding their jobs and working life (Bluestone, 1977). This sort of work environment where management retains authority over operations is in contrast to the outside life of an employee who lives in a democratic society and has broad decision rights. The notion of employee engagement and participation in decision-making became a point of consideration in workplaces due to management's view of ensuring that an employee who lives in a democratic society also enjoys some degree of dignity, self-respect and freedom that are his as a citizen of that country (Bluestone, 1977).

As a result of ensuring such a democratic working atmosphere, a motivated as well as a co-operative workforce, studies have shown an increase in firms being characterised by horizontal hierarchical structures, the participation of non-managerial employees in decision-making, good labour-management relations, teams supervised by employees, incentives, skill acquisition through training, multi-

tasking and job rotation.[13] That is, the tayloristic form of operation like top-down hierarchical structures, centralised decision-making, collective bargaining, lack of task variety, close monitoring of employees, little or no problem solving tasks and salary type of contracts seems to have declined (Askenazy and Caroli, 2010; Askenazy, 2001; Kling, 1995; Bauer, 2004; Bayo-Moriones and Merino-Diaz de Cerio, 2001; Zhou et al., 2012; Kato and Morishima, 2002). Milgrom and Roberts (1995) suggested that these practices have been observed to be more effective when complementarity[14] exists among/between them (that is, they are more effective when jointly adopted). These practices that facilitate employees' motivation are broadly referred to as employees' engagement practices. In the context of this study, employees' engagement practices encompass employees' participation in decision-making, employees' involvement and payments based on individual or group performance.

 The common line of argument of firms adopting employees' engagement practices is that a high level of performance can only be achieved and sustained when opportunities to participate either in decisions or returns are made available to employees. These opportunities tend to build the knowledge capacity of employees and promote their creativity. Bauer (2004) and Kim (2005) also argued that another reason for such adoption is the enhancement of product quality. This is achieved through the utilisation of the untapped knowledge, ideas and creativity of non-managerial employees with the intention of being cost effective in the process.

Based on these arguments, the next section briefly outlines some reasons for employees' participation and involvement as section 3 highlights previous studies that have examined the relationship between the delegation of authority (employees' involvement and participation in decisions) and job satisfaction. Section 4 considers previous studies on participation in returns and job satisfaction, while section 5 considers the performance effects of employees' participation and involvement. The costs associated with the presence of employees' participatory and engagement practices as highlighted in the literature are presented in section 6. Section 7 considers various determinants of job satisfaction in different contexts: section 8

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[13] Job rotation defined as the assignment of employees to production areas that are overloaded so as to be able to meet deadlines – induces employees' flexibility and teamwork (Ichniowski and Shaw, 2003).

[14] Milgrom and Roberts (1995) who are proponents of complementarity adjudged that there are more gains for the firm through the joint presence of participatory practices.

highlights the relationship between unions and job satisfaction, section 9 relays the importance of examining different forms of job satisfaction and the last section concludes. The studies reviewed in this chapter have similar limitations regarding the use of aggregated and single-item measures of job satisfaction. The use of such measures has been criticized for low reliability because there is less information about satisfaction with specific aspects of the job. Moreover, some studies that used ordered logit regression models did not test for the parallel regression assumption underlying such models. This assumption states that the relationship between each pair of outcome categories is the same. In other words, ordered logit models assumes that the coefficients that describe the relationship between lowest and all higher categories, for example, are the same as the coefficients that describe the relationship between the second lowest category and all higher categories. This also means that the correlation between the explanatory and dependent variable does not change for the dependent variable's categories. As a result of the coefficients being the same, there is only one set of coefficients. The violation of the assumption facilitates wrong interpretation of results and alternative models should be used to find correct results instead of ordered logit models.

3.2   Major Reasons for Employees' Participation and Involvement

One major underlying theme of employees' participation in decision-making/control is that since the frontline workers are the ones doing the job, they will always have knowledge about how the work can be improved when offered such an opportunity (Levine, 1995).

A recent study by Chi et al. (2011) suggested that firms adopt employees' involvement programs when the business strategy of the firm shows the growth of market shares and also when they have other advanced workplace practices, emphasising complementarity among workplace practices. The motivation for the study arose as a result of the increasing adoption of employees' involvement programmes that were seen as being innovative in the U.S. As a result of the innovations accruing to such practices, the Commission on the Future of Worker-Management Relations encouraged the adoption of such programmes so as to improve employees' wellbeing and productivity. Based on an interview survey of 51 manufacturing firms, the study revealed that firms still chose to terminate the programmes, possibly because not all firms are compatible with such programmes.

In a related study, Huang and Cappelli (2010) suggested that the type of individuals hired also facilitates the adoption of employees' involvement practices. Huang and Cappelli (2010) investigated how HR policies like job screening can influence performance-related outcomes. They found that firms that engage in screening applicants to detect positive attitudes towards work are associated with less monitoring and greater use of teamwork. Conscientious employees are less likely to shirk and it will be more rewarding to appreciate such a gesture by allowing them to have greater discretion over their job through the availability of teamwork.

Also, such firms were associated with higher levels of productivity, lower rates of labour turnover and higher wages in the form of compensation for frontline workers (Huang and Cappelli, 2010). The underlying intuition is that complementarity may be said to exist between teamwork and screening. This means that by selecting employees who are willing to work and monitoring costs are reduced in the process, practices like teamwork can be utilised to empower employees. Also, with employees that are less likely to shirk, there will be an increase in productivity. However, the measurement of job screening (a practice to reducing shirking) impedes the generalisability of this study. Job screening was conceptualised as a practice of looking for individuals with positive workplace attitudes. Thus, the relations found in the study may not hold for other types of job screening.

3.3   Delegation of Authority (Employees' Participation and Involvement) and Job satisfaction

Appelbaum et al. (2000) suggested that employees' participation and involvement that are associated with opportunities to be involved in the day-to-day running of the firm, the use of initiatives and the acquisition of knowledge, enhance employees' sense of being trusted, respected and valued by employers. As a result, employees' interest in the firm is increased and employers are observed to be interested in the welfare of employees. Some studies however argued that such a gesture should be appreciated by reciprocating with an increased contribution to the improvement of the firm (Akerlof, 1982; Hirschman, 1970). Employees' loyalty to the firm and contribution in turn ensure low turnover costs and continued rewards for the firm. Thus the outcomes of the adoption of participatory practices are said to show a 'win-win' relation as both the employees and employers benefit through greater control over the pace of work and through improved performance respectively. However, critics of the advent of participatory practices (for example, see Ramsey et al., 2000)

have disapproved this assumption as they suggested that gains to the firm occur through work intensity and stress, showing a 'win-lose' scenario. Empirical work on Employees' Involvement and Participation (EIP) has mainly concentrated on the resulting impact on organisational performance and less on its impact on employees (Cox et al., 2006). The positive effects on employees is through ensuring employees experience meaningfulness in their work, engage in better use of their knowledge and skills as well as have greater responsibility over their jobs. As a result of this neglect, there have been limited studies on the relationship between EIP and job satisfaction.

Cox et al. (2006) considered the relationship between EIP and job satisfaction by analysing the embeddedness (the breadth and depth) of EIP and job satisfaction. The breadth of EIP is measured by the joint presence[15] of these practices: the use of Joint Consultative Committees (JCC), formal employee surveys, team briefings, Problem Solving Groups (PSG) and the provision of information on finance, investment and staffing in the workplace and the depth is measured by the proportion of employees participating in PSGs, the allocation of time to employee questions in team briefings and the selection of employees' representatives. Their empirical analysis is based on data from WERS98 and linear and ordered logit estimations. The authors suggested that the joint presence of the EIP practices (breadth) is more significant in predicting job satisfaction than single EIP practice. This result thus suggests that managers should implement multiple EIP practices in the workplace instead of single practices. Apart from confirming the complementary nature of these practices, the result also showed and supported the findings of Delbridge and Whitfield (2001) as direct forms of EIP were important predictors of job satisfaction. To note, the measure of indirect forms of EIP (JCCs) was not significantly related to job satisfaction.

There are some methodological limitations to the study by Cox et al. (2006). First, endogeneity is not dealt with so causal links are not defined because it is a cross-sectional study. Second, it is quite unclear as to what estimation results were presented because the authors conducted ordered logit estimation and linear regression. Third, if ordered logit estimation was done, there was no mention if the equidistance (parallel regression) assumption of this technique was violated or not.

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[15] The measurement of the joint presence of these practices was constructed by summing the scores of seven direct forms of EIP.

In a more recent study on employees' participation and job satisfaction, Cox et al. (2009) considered the concept of 'institutional embeddedness'. This term explores the effectiveness of employees' participation practices by accounting for the proportion of employees involved in the workplace or the selection techniques of employees' representatives. Cox et al. (2009) extended this term by considering the role played by managers (the effectiveness of managers) in the implementation of employees' participation practices in workplaces. Using data from WERS2004 and conducting linear regressions[16], their results suggested that employees' perceptions of participatory practices are more influential in predicting job satisfaction than management approaches to employees' participation. The results suggested that employees' perceptions of the usefulness of information and consultation processes (noticeboards, email, intranet, newsletters, union or employees' representatives and meetings between managers and employees) are positively and significantly associated with job satisfaction except in the case of intranet. The results suggested that face-to-face meetings between managers and employees were found to be an important form of employee participation. One reason could be that this type of mechanism is more of a consultation mechanism rather than being informative. All the other highlighted processes are more informative than consultative.

Also, Cox et al. (2009) suggested that a manager's effectiveness in employees' participation processes is an important predictor of job satisfaction. This was confirmed as employees' perceptions of management's effectiveness were found to be important predictors of job satisfaction. That is, employees' perceptions of a manager's attempt to seek their views and respond to suggestions are positively and significantly related to job satisfaction. Thus, it is revealed that management style is critical to employees' perceptions of their participation practices. This study is limited by the use of a job satisfaction index as it is quite difficult to understand the sort of workplace practices that are important for a particular dimension of job satisfaction. Also, the construction of the job satisfaction index that entails a combination of some forms of job satisfaction and the supportive nature of management is not clearly explained.

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[16] The authors used linear regressions because a continuous global measure of job satisfaction was constructed for different types of job satisfaction provided in WERS2004. These types of job satisfaction were limited dependent variables.

The study by Wood and de Menezes (2011) corroborated the findings of Cox et al. (2009) by suggesting the positive impact of consultative management on job satisfaction. Consultative management entails managerial styles of seeking the views of employees, responding to employees' suggestions and allowing employees to influence final decisions. The motivations of Wood and de Menezes (2011) and Cox et al.'s (2009) studies were different but their joint use of 2004 WERS may have influenced similar results on consultative management. Conducting PCA on eight different measures of job satisfaction, Wood and de Menezes (2011) used weighted multi-level regression models to examine the relationship between high involvement management and employees' wellbeing (anxiety-contentment and job satisfaction). The findings on consultative management suggest the importance of employees' voice, though not necessarily with bargaining rights because the presence of a trade union was found to be non-significant but an opportunity to engage in the workplace's affairs was found to be significant. Moreover, job control was found to be positively associated with job satisfaction and this is consistent with the longstanding tradition of job design[17]. A small limitation of the study is that the aggregated measure of job satisfaction may not be an adequately informed variable.

Berg (1999) also shared Wood and de Menezes' view as he pointed out that the impact of a participatory atmosphere sorely depends on the presence of work-life balance practices, good employee-employer relations and the organisation of tasks in the firm. The author conducted an ordered logit estimation and provided evidence that: employees, who (i) are involved in problem solving groups that entail the utilisation of skills and knowledge, (ii) have cordial relationships with their employers and (iii) believe that the firm is committed to ensuring a work-life balance, tend to have a higher probability of job satisfaction. However, the specificity of the research (analysis based on the US steel industry only) may pose some problems for generalisability. The non-significance of performance-related pay and employees' involvement in decision-making may not be the case in other industries. This problem will however not matter for our research as WERS data covers private and public sectors as well as various industries.

Examining the impact of employees' involvement on job satisfaction, Mohr and Zoghi (2008) analysed 'High involvement work design' and job satisfaction in

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[17] This refers to an arrangement or re-structuring of the job with the aim of improving job satisfaction.

Canadian workplaces. This sort of work design was conceptualised by analysing the frequency employees participated in seven high involvement workplace programmes: quality circles, employee surveys, suggestion programmes, information sharing programmes, job rotation, self-directed work groups and labour-management committees or task teams. Using data from 1999-2002 Canadian Workplace and Employee Survey and conducting ordered probit estimations; they found that suggestion schemes, information sharing, task teams and quality circles were positively and significantly related to overall job satisfaction. Moreover, participation in these programmes was not associated with increased work intensity as hypothesized. However, the use of an overall job satisfaction measure may not accurately capture the effect of these practices on employees' satisfaction with different aspects of the job. Employees' participation in these practices may be positively associated with pay satisfaction and negatively associated with job security satisfaction. Also, the measures of the HR practices may not be objective enough to capture the overall workplace environment as they were based on employee reports.

Supporting the findings of Mohr and Zoghi (2008), Zatzick and Iverson (2011) also found a positive relation between job satisfaction and employees' involvement[18] (as measured by employee suggestion schemes, cross training programmes, quality circles and self-directed teams). Zatzick and Iverson (2011) used the same dataset as Mohr and Zoghi (2008) in the examination of job satisfaction and absenteeism in high-involvement work systems; as such, the measures of employees' involvement are the same. However, some differences between these studies should be highlighted. First, Zatzick and Iverson (2011) used an aggregate measure of employees' involvement by conducting Confirmatory Factor Analysis (CFA) on the eight items of interest in contrast to the study by Mohr and Zoghi (2008). Second, Zatzick and Iverson conducted hierarchical linear modelling to test cross-level relationships.

As a result of retaining quality labour and ensuring the satisfaction of employees in the firm, workplaces have engaged in developing strategic programmes that would facilitate higher levels of job satisfaction. One of such programmes is the provision of opportunities to employees in order to participate in decision-making. Van der

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[18] Employees' involvement in Zatzick and Iverson's (2011) study is conceptualised as employees having some degree of autonomy and decision-making authority.

Westhuizen et al. (2012) used data from the European Values Study (EVS) and conducted ordered logistic estimation to examine the impact of culture on participative decision-making and job satisfaction. They found that employees are more likely to experience higher levels of job satisfaction when their freedom to participate in decisions increases. They also found that both male employees and employees with middle or higher levels of educational attainment were less likely to report higher levels of job satisfaction. As a result of the influence of cultural values on the results obtained, Van der Westhuizen et al. (2012) suggested that cultural values mediate the participative decision-making-job satisfaction link. There was no mention in this study of the test for the parallel regression assumption that is relatively important when using the ordered logistic techniques.

Timming (2012) corroborates the findings of Van der Westhuizen et al. (2012) using data from the 2004 WERS of Employees and employing structural equation modelling. He found that employees' involvement (through management: seeking the views of employees, responding to suggestions and allowing employees to influence final decisions) and the provision of information to employees concerning changes in the workplace are positively related to job satisfaction. Also, job influence was found to be positively related to job satisfaction. Thus it may suffice to say that the availability of such practices tends to provide a 'voice' to employees and in turn enhances their satisfaction with the job. However, the use of a composite index for job satisfaction restricts the findings of the influence of these practices on various forms of job satisfaction.

A more recent study by Knudsen et al. (2013) suggested that collective and representative forms of employees' participation are more prominent in promoting a quality work environment in Denmark than in New Zealand. This finding was based on some descriptive analyses of teachers in Denmark and New Zealand and the participation result for Danish teachers was partly attributed to the strong institutions of representative participation when compared to New Zealand. As suggested by Wood and de Menezes (2011), studies on job satisfaction and employees' wellbeing are important because policies from such studies are not only important to the industrial landscape; there has also been evidence that stress at work extends to the overall wellbeing of employees.

Table 3.1: Summary of Previous Findings on Employees' Participation, Involvement and Job satisfaction

Author	Aim of Study	Data	Empirical Approach	Findings (job satisfaction as dependent variable)
Cox et al. (2006)	Relationship between Employee Involvement and Participation (EIP) and job satisfaction	WERS98	Linear and ordered logit estimations	Joint presence of the EIP practices was more significant in predicting job satisfaction than single EIP practice.
Cox et al. (2009)	Effectiveness of employees' participation practices and job satisfaction	WERS2004	Linear regressions	- Employees' perceptions of participatory practices were more influential in predicting job satisfaction than management approaches to employees' participation. - Manager's effectiveness in employees' participation processes was an important predictor of job satisfaction.
Wood and de Menezes (2011)	Relationship between high involvement management and employees' wellbeing (anxiety-contentment and job satisfaction)	WERS2004	Weighted multi-level regression models	- They found a positive relationship consultative management on job satisfaction. - They also found a positive relationship between job control and job satisfaction.
Berg (1999)	The impact of a participatory atmosphere on job satisfaction	Data on US steel industry	Ordered logit estimation	They found that employees, who (i) are involved in problem solving groups that entail the utilisation of skills and knowledge, (ii) have cordial relationships with their employers and (iii) believe that the firm is committed to ensuring a work-life balance, tend to have a higher probability of job satisfaction
Mohr and Zoghi (2008)	High involvement work design' and job satisfaction in Canadian workplaces	1999-2002 Canadian Workplace and Employee Survey	Ordered probit estimations	They found that suggestion schemes, information sharing, task teams and quality circles were positively and significantly related to overall job satisfaction
Zatzick and Iverson (2011)	Job satisfaction and absenteeism in high-involvement work systems	1999-2002 Canadian Workplace and Employee Survey	Hierarchical linear modelling	They found a positive relation between job satisfaction and employees' involvement

Author	Aim of Study	Data	Empirical Approach	Findings (job satisfaction as dependent variable)
Westhuizen et al. (2012)	Impact of culture on participative decision-making and job satisfaction	European Values Study (EVS)	Ordered logistic estimation	They found that employees are more likely to experience higher levels of job satisfaction when their freedom to participate in decisions increases.
Timming (2012)		WERS2004	Structural equation modelling	• He found that employees' involvement and the provision of information to employees concerning changes in the workplace were positively related to job satisfaction. • Also, job influence was found to be positively related to job satisfaction.
Knudsen et al. (2013)	The impact of employees' participation on work environment	Data on teachers in Denmark and New Zealand	Descriptive analyses	They suggested that collective and representative forms of employees' participation are more prominent in promoting a quality work environment in Denmark than in New Zealand.
Weaver (1977)	The relationships among work autonomy, pay, ethnicity, gender, occupational status, supervisory role and job satisfaction	National Opinion Research Centre's General Social Survey	Bivariate correlation analysis	They suggested that that employees: who earn higher pay, who have white ethnic backgrounds, who occupy managerial occupational positions, who supervise other employees and those who have autonomy are more likely to be satisfied with their job.
Dawal et al. (2009)	Relationship between workplace practices and job satisfaction.	Data on 170 Malaysian male employees in two automotive industries	Correlation analysis	The effects of the workplace practices, which were examined on job satisfaction, were found to be influenced by age, marital status and work experience.

Barling et al. (2003) examined occupational injuries in workplaces, utilising the Australian WIRS95 data that includes similar questions to WERS. High quality work that is comprised of extensive training, task variety and job autonomy was found to positively predict job satisfaction. Moreover, job satisfaction was found to moderate the high-quality work and occupational injuries relationship. That is, employees are more likely to be satisfied with their jobs when the workplace provides opportunities for extensive training like on-the-job training and health and safety training, task variety and job autonomy and as such, tend to work more safely and enjoy greater safety orientation. However, the use of an aggregated measure for high-quality work in their empirical study makes it difficult to disentangle the source of positive effect on job satisfaction.

With the use of a national sample of U.S. full time employees (National Opinion Research Centre's General Social Survey), Weaver (1977) sought to establish the relationships among work autonomy, pay, ethnicity, gender, occupational status, supervisory role and job satisfaction. The bivariate correlation coefficient revealed that employees: who earn higher pay, who have white ethnic backgrounds, who occupy managerial occupational positions, who supervise other employees and are not subject to direct supervision (those who have autonomy) are more likely to be satisfied with their job. However, the partial regression results showed that only the supervisory position is significantly and positively related to job satisfaction when the effects of other variables are taken into account.

Departing from the use of a single-item measure of job satisfaction, Drake and Mitchell (1977) examined the effects of vertical (power relative to managers) and horizontal power (based on the combination of contributions from teams[19] before a decision is made) in decision-making on satisfaction with: personal influence within a team, a team's influence within the combined marketing-engineering team and overall personal influence in the combined marketing-engineering team. This experimental study was based on 151 marketing students and revealed that vertical and horizontal forms of power were positively and significantly related to satisfaction with personal influence in the team. Also, horizontal power was found to be positively and significantly related to satisfaction with the team's influence. That is, as the power of the team increased, the participants were more satisfied with the

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[19] The two teams used in the study were marketing and engineering teams.

team's influence. Further, both vertical and horizontal forms of power had a significant positive impact on personal satisfaction with overall influence. Overall influence was measured by considering participants' overall impact on the final decisions of the combined marketing-engineering team. The joint effect of horizontal and vertical power was significantly and positively related to satisfaction with overall influence. This study revealed the impact of participation in decision-making that could apply to workplaces. However, the generalisation of the findings to workplaces is constrained because of its experimental setting based on a students' sample.

Drake and Mitchell's (1977) study on the relationship between power redistribution and satisfaction is complemented by Driscoll's (1978) study of participation and job satisfaction. This study that was exploratory in nature was based on the faculty members of a liberal arts college in New York. The author considered two forms of job satisfaction: overall job satisfaction and satisfaction with participation in decision-making. Overall job satisfaction was constructed based on six forms of job satisfaction: promotion, the job itself, job security, present colleagues, present wage and the work done and this deviated in a way from the standard use of a single-item measure. The findings suggested that an individual's participation in decision-making is significantly and positively related to satisfaction with participation in decision-making.

The impact of an individual's participation in decision-making is as a result of the balance between desired participation in decisions and perceived participation in decisions. This implies that the effectiveness of participation in the decision-making process depends to a large extent on the desire to participate and not only on the perceived participation of the individual. However, as stated earlier, the suggestions were based on Pearson's correlation results and empirical analyses will establish these findings more adequately.

Dawal et al. (2009) also confirmed a significant correlation between workplace practices and job satisfaction. Workplace practices, such as job rotation, problem solving opportunities and goal setting were argued to facilitate the delegation of authority to employees and as such, are important determinants of job satisfaction. Using data collected on 170 Malaysian employees (males) in two automotive industries, the effect of these workplace practices on job satisfaction were found to

be influenced by age, marital status and work experience. The study is however not generalisable to the entire workforce.

In analysing the effects of employees' involvement (EI) practices[20] in the firm, Freeman and Kleiner (2000) tried to answer the question by considering the party that benefits most from such an adoption. The practices that were mentioned in the survey included autonomous work groups, employees' participation in designing the employees' involvement practices, Total Quality Management (TQM), Productivity issues' committees, the involvement of employee in work processes, informative atmosphere, suggestion schemes and opinion surveys. Suggesting that such practices increase productivity and profits, some studies have found them to either have a small positive effect on productivity (Cappelli and Neumark, 2001) or to be contingent on other factors in the firm (Black and Lynch, 2001).

Matching the data from the 1993 mail survey of firms of the Society of Human Resource Management (SHRM) to obtain measures of firm productivity with firm-level data on production and financial outcomes from COMPUSTAT between 1983 and 1993, Freeman and Kleiner (2000) observed that the rate of EI practices usage increased between 1983 and 1993. Estimating Ordinary Least Squares (OLS) and median regressions, the authors found that practices had little or no effect on productivity. However, the reliability of the OLS regressions is questionable.

Without any significant effect of such practices on productivity, Freeman and Kleiner (2000) investigated the potential effects on employees. The analyses showed that employees participating in firms with EI practices reported higher levels of involvement in decision-making than non-participating employees in firms with EI practices and employees in firms without employees' involvement practices. The cross tabulations revealed that the EI participants were more satisfied with the influence they had on the job, were more loyal to the firm, had trust in the firm to keep their promises and looked forward to going to work. In addition, employees reported that removing such practices would have drastic negative effects on them. In summary, workplace practices improved employees' wellbeing and the study even suggested a net benefit to the U.S. labour market due to the nonnegative effect on productivity and the improvement in employees' wellbeing.

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[20] These are a diverse set of human resource practices that facilitate employees' authority in decision-making and in workplaces.

As earlier mentioned, employees' participation also entails employees' participation in returns or the availability of employees' returns rights (Ben-Ner and Jones, 1995). The next section outlines previous studies on employees' participation in returns in the context of job satisfaction.

3.4   Employees' Participation in Returns and Job Satisfaction

Examining employee-owned workplaces and investigating the effect of ESOP on job satisfaction, Buchko (1993) empirically tested a causal model using a sample of employees from a medium-sized media and communications workplace. Path analysis was conducted so as to be able to identify the direction and magnitude of the effects of the independent variables on the dependent variables. This causal modelling showed that the perceived influence in workplace decision-making that is associated with the employee ownership nature of such plans is an important predictor of job satisfaction. The financial value of ESOP was not significantly related to job satisfaction; it is not the extrinsic reward of such plans that affects job satisfaction but the intrinsic reward. That is, employees value ESOP more because of the benefits it provides in daily work situations and not the financial value. Moreover, ESOPs can be viewed as deferred compensation schemes since employees do not get the shares attributed to them until the loan is paid back by the company. The way it works in the US is that the company takes out a subsidised loan that is used to buy the shares for employees and then it pays back gradually out of its profits. Employee shares are initially held in trust and released to employees as the loan is being paid back (Perotin, 2015). The results of this study are somewhat limited because it was based on a sample of employees from a single workplace.

In an earlier study, French and Rosenstein (1984) examined the effect of ESOPs on general job satisfaction in an employee-owned services workplace. This type of workplace represents a traditional employee-owned (owned directly not through trust) but management-controlled workplace; therefore, the degree of control among employees as well as the perception of common interest with others in the workplace varied even with the presence of ESOP. Managerial employees, who constituted about 20% of the workplace held 76% of the shares. The authors sought to examine the implications of shareholdings by employees with varying levels of control in this type of employee-owned firm. Conducting moderated multiple

regression analyses; they found that only perceived influence[21] amongst others was positively and significantly related to general job satisfaction. This result is similar to Buchko (1993) and emphasises the importance of influence when examining job satisfaction. Samples were different in that Buchko (1993) considered a workplace that transferred ownership rights to employees through the implementation of ESOP and not a management-controlled employee-owned workplace.

The results of the studies by Buchko (1993) and French and Rosenstein (1984) may be due to the nature and composition of the jobs being performed in the workplaces examined. Hammer and Stein (1980) found that when a high percentage of an employee-owned workforce is composed of skilled labour, such skilled employees have no interest in participating in decision-making at management level so as not to add more demand to their jobs.[22] Skilled jobs referred to jobs that were already complex, varied and required thought and judgement. Hammer and Stein's (1980) study was based on a small furniture manufacturing firm in the U.S whose employees bought when it was on the verge of liquidating. Through the help of the US government and private bank loans as well as the sales of stocks to residents and employees in the area, employees were able to buy the firm from the parent organisation. They observed the lack of interest of employees in participating in decision-making and linked this to the amount of investments employees had made in the firm: the more an employee had invested, the more he would lose if the investments failed. As a result of ensuring profitable investments, blue collar workers are more likely to delegate decision-making to management.

3.5   Performance Effects of Employees' Involvement and Participation

Apart from the effects of EIP on job satisfaction as emphasised above, some studies have also considered the performance effects of having such practices in the workplace. The framework developed by Ben-Ner and Jones (1995) suggested that employees' ownership through the influence of return and control rights on employees' morale and performance was considered to affect a firm's performance. Return rights were considered by most researchers to enhance employees' interest in

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[21] Perceived influence was measured based on: (1) if employees felt they actually had influence over the decisions made by their supervisors, divisional heads and management; (2) success as individuals or being part of a group in influencing immediate supervisors to change a decision.

[22] The proposition of an increase in job demand as a result of the implementation of participatory practices has been suggested in studies on the demand-control model.

the firm[23] and employees' job satisfaction and in turn reduced quit rates[24]. On the other hand, return rights were also beset by free riding risks.[25] A point to note is that if the cost of employees' exertion of effort exceeded their share in the returns, then the incentivising nature of such a right in the firm would be negative. This was the cost Ramsey et al. (2000) referred to in their study by stating that the gains to the workplace as a result of the presence of employees' participatory and involvement practices may occur through work intensity and stress, describing a 'win-lose' scenario. Moreover, the 'lose' scenario may also be associated with the workplace because of costs associated with the implementation of such practices. Another besetting risk, which is uncertainty associated with employees' income can adversely affect a firm's performance. If employees are risk averse, they may self-select themselves into firms with a stable income (Park et al., 2004; Dohmen and Falk, 2011), thereby reducing the quality composition of the labour force as employees.

Jensen and Meckling (1979) shared the negative view of return rights as they suggested that it could not be used in conjunction with monitoring individual employees' performance; the main reason being that returns are shared equally among those that exert high or low effort. Similarly, return rights based on group performance may have a negative effect on organisational productivity as employees will be concerned about the group's interest and not the firm's. Ben-Ner and Jones (1995) concluded by suggesting that the joint presence of control and return opportunities in the firm are associated with positive productivity effects. They observed that the individual presence of each opportunity tended to have positive effects in the initial stage but become negative after some time, particularly through increased conflict. This shows a link to the concept of diminishing marginal returns. However, the authors stated that with employee ownership being influential,

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[23] Through the alignment of employee's interest with that of the firm's (absence of agency problem)

[24] Quit rates were also discovered to be reduced through the utilization of participatory practices and were also found to be an employee behaviour that partially acts a mediator between participatory practices and productivity in the services context analysed by Batt (2002)

[25] This free riding risk has also been argued by Alchian and Demsetz (1972) as a major issue associated with team production but Kruse et al. (2004) found that with the presence of complementary HR policies in the firm that facilitates employees having control over the organisation of their job, there is the tendency for employees to be able to exert peer pressure over shirking co-workers.

productivity increases. This subsection highlights the performance-related benefits of such practices.

3.5.1 Productivity Effects

Studies have suggested the productivity-enhancing characteristic of various participatory practices. The participation of employees in decisions (at the management and production level) and returns (profit sharing and employee share ownership plans) were indicated to improve productivity (Kato and Morishima, 2002; MacDuffie, 1995; Colombo et al., 2007; Black and Lynch, 2001). Moreover, these studies emphasised the complementary effects of participatory practices.

Kato and Morishima (2002) found that the significant positive productivity effects were only evident after seven years, while MacDuffie (1995) suggested that teamwork systems and other HR policies were more influential on productivity when they were combined with manufacturing policies. It can however be argued that the findings of Kato and Morishima (2002) may be prone to the prosperity of the post-war era in Japan. Furthermore, there were drawbacks with the international data on 62 auto assembly plants utilised in MacDuffie (1995)'s study; only recognised automotive firms may have been included in the dataset. That is, only firms with publicly available data may have been sampled.

Black and Lynch (2001) on the other hand suggested that participation in returns only improves productivity when it is made available to frontline workers. They also suggested that the complementary effects on productivity are greater when employees have a voice through unions in the firm.[26] Bae et al. (2011) also suggested that the availability of discretion and autonomy facilitates the provision of suggestions by employees that improved productivity.

A panel study of French firms conducted by Fakhfakh (2004) revealed that the provision of ESOPs tends to align the interests of employers and employees effectively. This provision in turn reduces voluntary exits from the firm and this could be due to a change in the way employees perceived the workplace. Thus, employment stability is enhanced. The contextual basis of this study also plays a significant role in the empirical evidence provided as the French government offers

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[26] This finding was also supported by the analysis carried out by Bryson et al. (2005) who investigated the impact of High Involvement Management (HIM) on British firms' performance taking into account the presence of union.

tax concessions to employees who have owned shares in the firms for several years. However, conducting the same analysis on profit sharing and voluntary exits revealed non-significant results. The significance of ESOPs over profit sharing schemes may be explained in relation to the monetary and non-monetary benefits of the scheme. ESOPs not only promote the sense of ownership that facilitates stable employment but also has a monetary value attached.

In a more recent study by Fakhfakh and Perotin (2011), profit sharing was indicated to be associated with performance gains. With these performance gains being substantial, the authors suggested that gains would more than offset the cost of free riding associated with these incentives. The shift from fixed wages to collective performance related pay (profit sharing) was also shown to be associated with an increase in productivity (Lucifora and Origo, 2012). This study, which utilised a panel dataset for the steel industry in Italy indicated that productivity gains varied across firms as the high-tech and medium-sized firms with low union interference were found to be more productive. However, this finding is restricted to the steel industry so far.

On the other hand, Bandiera et al. (2012) suggested that forming teams with close friends will eliminate the free riding problems associated with teams and collective incentives. They found that the idea of pairing up with friends reduced as employees who were more concerned about their social status changed their perception of team composition when rank and monetary incentives were introduced. This is explained in the sense that employees tended to be organised into teams according to their ability when rank[27] and monetary incentives[28] were later introduced in addition to piece rates that were given first. The analysis also showed that with the reduction in friend-composed teams, average productivity reduced in the presence of rank incentives.

3.5.2 Financial Performance Effects

The implementation of participatory practices may not necessarily translate into higher profits as such implementation may be accompanied by some costs that the firm cannot ignore; for example, workers' recruitment costs, transaction costs or

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[27] This refers to when teams are ranked according to their productivity daily.
[28] This refers to the offer made to the most productive team at the end of each week and this offer is a monetary reward.

implementation costs. Also, the firm's profit may not necessarily increase with such implementation as the higher surplus associated with such practices is then allocated to employees in the form of rewards. That is, with employees contributing to reducing monitoring and to saving money for the firm, the firm may be motivated to reward them (Black and Lynch, 2004; Cappelli and Neumark, 2001; Freeman and Kleiner, 2000 and Huang and Cappelli, 2010). However, such adoption can also result in improved financial performance when benefits are higher than costs.

With the spreading of 'high performance' workplaces in Britain aiming to enhance increased productivity and to compete in world markets, Guest et al. (2003) found a positive relation between financial performance and Human Resource Management (HRM), which includes the reward structure, opportunities for participation, problem solving groups, training and development. However, by examining other objective measures of performance such as labour turnover, a non-significant relationship was found when past firm performance was controlled for.

However, without controlling for past firm performance, the objective measures of performance such as labour turnover indicated that greater use of HRM was associated with a lower rate of labour turnover and a higher rate of profit per employee. The findings however suggested a positive association between HRM and performance but not a change in performance. This is due to the non-significance of the relationship between financial performance and HRM after past firm performance was controlled for. This finding is identical to the study carried out by Wright et al. (2005). Their study also indicated a non-significant relationship between HRM and future performance after controlling for past performance. This analysis was done to determine the magnitude of change in firm performance.

Also, Colombo et al. (2007) confirmed the positive significant effects of TQM and profit sharing on firm profitability, while teamwork and job rotation were found to be non-significant. Huselid and Becker (1996) suggested that the firm's value increased with a one standard deviation increase in participatory practices. As mentioned earlier, there are costs associated with the presence of employees' participatory and involvement practices. The next section outlines studies on the costs of employees' participatory and involvement practices.

3.6 Evidence of the Costs of Participatory and Involvement Practices for Employees and Workplaces

The benefits of participatory and involvement practices have received wide recognition with only few studies concentrating on the after effects on employees. The studies that investigated the consequences accompanying the adoption of participatory practices have been conducted mostly on US firms (Askenazy and Caroli, 2010; Askenazy, 2001) except Bauer (2004) who concentrated on European countries. Most US firms view workplace health and safety training as part of the regular job skills training (a measure of providing a safe environment). Many reported injury cases have been suggested to be due to inadequate training and mastery of the methods of work. Ramsey et al. (2000) and Green (2004) for example have suggested that the adoption of participatory practices was not only associated with positive effects, as outlined above, but also accompanied by negative effects such as peer pressure from teamwork and work intensity. In teamwork, employees do not have control over the pace of work and this may breed hatred in the workplace resulting in conflict among employees. Also, due to increased responsibility and pace of work, employees' focus shifts from work routines and safety precautions to the product itself.

3.6.1 Psychosocial Hazard Costs

Investigating the impact of participatory practices on employees' wellbeing, empirical evidence showed that the work teams, TQM, job rotation and flexible work practices tend to induce workplace injuries such as back and muscle aches and musculoskeletal problems (Askenazy and Caroli, 2010; Askenazy, 2001). That is, employees in workplaces with these practices tend to be worse off than those in non-participatory firms. These workplace injuries were in turn found to promote absenteeism. The Chartered Institute of Personnel Development (CIPD) undertook a survey to investigate causes of absenteeism in British workplaces. The average level of absence was observed to have decreased from 8.0 days per employee in 2008 to about 7.4 in 2009 with the greatest decline in the private sector. The major causes of absence were flu and colds for both manual and non-manual workers, musculoskeletal problems and colds for manual workers, and stress as a result of work intensity for non-manual workers. Stress was found to cause long-term absence (EWCO, 2009).

Green (2004) who utilised WERS'98 found that work intensity is associated with high-commitment work practices and reduced union prominence. This analysis was based on a series of descriptive analyses. Moreover, Waehrer and Miller (2009), using a survey on US firms and conducting two-stage estimation, suggested that TQM was associated with an increased rate of reported injuries. The authors suggested that the presence of a formal health and safety training programme in firms can help to reduce severe injuries especially in large firms.

Wood and de Menezes (2011) also suggested that the acquisition of skills (through training) and problem solving groups were positively related to anxiety. A possible explanation for this result may be the fear of the distortion of organisational culture and practices accompanying the implementation of such practices.

3.6.2 Implementation and Transaction Costs

 Moving away from health and safety issues, there are other types of costs such as transaction and implementation costs that may inhibit the implementation or low rate of implementation of employees' engagement practices in workplaces. Since the implementation of engagement practices not only involves changing the entire system of work practices but also requires adopting new technologies, costs are incurred and this may discourage full adoption. Thus, firm performance is suboptimal when the adoption is incomplete (Kim, 2005). Also, the fear of altering the entire system of work practices accompanying such adoptions may hinder the cooperation of managerial employees. Cappelli and Neumark (2001) argued that increases in wages as a result of incentives may discourage the adoption of employees' engagement practices by employers. Cappelli and Neumark (2001) were able to provide evidence that the implementation of participatory practices increases costs to employers because of labour costs and with little positive impact on firm performance.

However, Kim (2005) in his analysis emphasised not only the benefits of participatory schemes and supporting practices to the firm but also the costs (implementation) associated with organisational outcomes. The analysis was based on a discontinued suggestion system so as to examine the motive behind the discontinuity. The study provided evidence that the implementation of employees' suggestions improved labour productivity and reduced conflict in the firm at the initial stage but the suggestion system was discontinued because employees'

suggestions did not improve productivity at a later stage. Also, the author found that the suggestion system incurred transaction and implementation costs and the costs may serve as a deterrent to other firms generally. A possible explanation for less effective suggestions at the later stage may be that employees are very sensitive to the type of incentive scheme (gain sharing) accompanying the suggestion system. The free riding problem inherent in such incentive schemes may have facilitated non-productive suggestions. Also, final decisions on the suggestions may be made by a small group of workers so as to minimise transaction costs.[29]

3.6.3 Suggested Solutions for Handling Psychosocial Hazards

The issue of workplace injury is an important one as it affects the society (health care), employers (disruption in the cycle of productivity and replacement arrangements) and employees (pain). Therefore, employers usually engage in health and safety training concerning the use of workplace equipment, provide equipments that help to ensure comfort and alertness and also implement various HR management practices that can ensure increased rates of employees' job satisfaction (Waehrer and Miller, 2009). Waehrer and Miller (2009) suggested that there are regulations in different countries governing the maintenance of employees' wellbeing in firms. However, James and Kyprianou (2002), based on the findings of the survey of Royal College of Nursing safety representatives, argued that only a few firms claim to know about the regulations and firms that are aware, lack understanding and tend not to comply with them.

Emphasising control, Delbridge and Whitfield (2001) argued that employees' involvement could either be direct (focusing on the production process) or representative (broader in scope, e.g. joint consultative committees) in nature. Ben-Ner and Jones (1995) also stated that firms with such direct practices tend to restrict employees' involvement to decisions regarding his/her immediate working environment. This implies reducing control in overall decision-making. With such control despite its restrictions to the production process, Levine (1995) pointed out that direct forms of control are still associated with lower levels of work intensity.

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[29] Numerous decision makers have been a major critique of employee ownership. Emergencies have been suggested to be hindered due to the time-consuming decision making process. However, the presence of cooperation in the firm has been argued to circumvent the issues of conflicting interest and transaction costs. This cooperative atmosphere in turn fosters the participation of employee-owners, especially non-managerial workers (who know their jobs best) and invariably improves productivity (Park et al., 2004).

Therefore, if the intensity of work is reduced, then, control should be encouraged. The least squares regression conducted by Delbridge and Whitfield (2001) that was based on data from WERS'98 suggested that involvement in decision-making over a broader scope enhances the sense of having a greater influence over tasks.

Robinson and Smallman (2006), estimating a weighted least squares log-odds function using WERS'98 data, found that when employees are assigned greater levels of control over their pace of work, workplace injuries and poor health status are reduced. This implies a positive impact of job control on employees' wellbeing and also corroborates the findings of earlier studies on the impact of job control. On the contrary, job rotation and multitasking were found to enhance stress. These practices were also indicated to ensure alertness and to reduce the stereotypical ways of carrying out a particular task, thereby reducing workplace injuries.

3.6.4 More Costs to Firms?

Studies have hypothesised that the assignment of absolute levels of control and return rights to employees through ownership and financial participation – cooperatives – may promote a safe working environment and improve firm performance. If this assertion is valid, then the empowerment of employees and the restructuring of firms should be considered because employees' interests are aligned with the management's interest. However, counter arguments about producers' cooperatives arise when the priority of employees who are also firm owners shifts from health and safety issues to increased cash dividends. This was confirmed in the study carried out by Rooney (1992) on employee-owned firms and non-employee-owned firms. The study showed that employees tend to ignore health and safety issues in favour of increased cash dividends. Thus, employees in such firms are more likely to be worse off than those in non-ownership firms. Less concern for their wellbeing may not only be about profit, but also about ensuring the survival of the firm against larger and well-established firms including increased working hours.

Grunberg et al. (1996) uncovered similar results on cooperatives regarding workplace injury experiences. The producer cooperatives recorded more 'loss of days'. The authors however concluded that these findings may be due to the act of ensuring survival against larger and more financially stable organisations in highly unfriendly environments. The findings may also be due to the fact that the cooperatives had no incentive to under-report injuries, contrary to conventional

firms. Thus, these findings may confirm the additional costs associated with the availability of absolute control that has been suggested as an antidote for workplace injuries.

Park et al. (2004) obtained similar results using data of employees' shares in all U.S public firms between 1988 and 2001. The estimation was a two-stage analysis with the first being a regression of the OLS models of labour productivity and the second a 'Weibull model'. The latter model was used because it takes into account the firms that were still surviving at the end of the period being observed so as to be able to articulate the extent of the survival of employee-owned firms. They were able to empirically confirm that firms with employee share ownership tended to survive longer than conventional firms but probably at the expense of employees' health and safety. This survival was as a result of employment stability as participation in control and return opportunities are associated with greater job satisfaction, which induces long-term employment but possibly at the expense of health and safety.

Apart from the effect of employees' participation on job satisfaction and on employee and firm performance, some important determinants of job satisfaction have been highlighted in the literature and the next section highlights these factors in different contexts.

3.7   Cross-Cultural Perspectives on the Determinants of Job Satisfaction

Using the first wave of the British Household Panel Survey (BHPS), Clark (1996) analysed job satisfaction in Britain by relating job satisfaction to a number of individual and job characteristics. He observed higher levels of job satisfaction among women, older employees and those with low levels of education. He also analysed the relationship with workplace characteristics and uncovered that employees working short hours, in small workplaces, who are not union members and with promotion opportunities tend to be satisfied with their jobs. Also, Clark (1996) confirmed that an individual's satisfaction from work is positively related to income and negatively related to hours of work. This supports the proposition of the standard economic model and suggests that employees are less happy when they have to work long hours. This study is quite constrained in the sense that workplace characteristics were reported by households and there was no matching of employee-employer data to provide more objective measures of workplace characteristics.

Gazioglu and Tansel (2006) also conducted a similar research study to Clark (1996). They argued that job satisfaction is closely related to labour market behaviours such as quits, absenteeism and productivity. This study had an edge over that of Clark (1996) because of the possibility of merging employee-level data and workplace-level data when using WERS'98. The results were similar to Clark (1996) as male employees reported lower levels of job satisfaction. Gazioglu and Tansel (2006) also analysed job satisfaction in relation to the sectors of the economy and they found that employees in the electricity, gas, water and construction sectors were more satisfied than employees in the wholesale and retail sectors. Another interesting finding was about employees in the educational sector and health sector: they were more satisfied with their sense of achievement than their pay. Employees, who had training opportunities, as such opportunities invariably increasing their value in the labour market, were also found to be more satisfied than their counterparts without such opportunities. An updated analysis with a more recent survey like the 2011WERS would be useful as working environments may have changed with the recession.

Wood and de Menezes (2011) study confirms the analysis of Gazioglu and Tansel (2006) based on WERS98 as male employees were less satisfied than female employees. Also, university educated employees are less satisfied with their job than those who were not university educated, while employees over 60 years are more satisfied with their job than younger employees. Moreover, managers who provide support to employees in different aspects of the job and inform employees about workplace changes and financial matters were found to positively affect employees.

Still on the satisfaction of women in the workplace, Clark (1997), using data from BHPS OLS and Probit estimations, was able to provide evidence that women tend to show more satisfaction with their job than men because of their lower expectations concerning the job. That is, since they expect less from the job, possibly due to worse experiences in the past, they will be satisfied with any given job. Moreover, the work values variables[30] that were proposed to account for the job satisfaction differential between men and women were not found to be determining factors. However, women who are at the top of their career, younger, managers or working in workplaces with a larger male-group size tend to have higher expectations about

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[30] These 'work values' variables include promotion prospects, pay and job security.

their job. One impediment of this study is that job characteristics were reported at household level. This will be avoided in our study as we explore both employee- and firm-level data from WERS2011. Also, the findings may be prone to omitted variable bias as the job satisfaction measure was based on work only.

Conducting a similar study on Swiss employees, Sousa-Poza and Sousa-Poza (2007) investigated the effect of job satisfaction on quits by gender using the first two available waves of the Swiss Household Panel dataset. The estimation of ordered probit and multinomial logit models showed that job satisfaction influences job mobility and this implied that employees tend to enter jobs so as to maximise their job utility. However, the findings showed no evidence of job mobility, which is influenced by job satisfaction, to be gender-based. A study based on a particular country may not be generalisable.

In an earlier study, Sousa-Poza and Sousa-Poza (2000) conducted a cross-national analysis of the levels of job satisfaction and its determinants. Using the Work Orientations dataset that covers 21 countries, obtained from the 1997 International Social Survey Program, they found that all the countries were associated with remarkably high levels of job satisfaction, with Denmark ranking first, the United States seventh and Great Britain fifteenth. A comparison with the previous wave of data (1989 ISSP) showed a decline in job satisfaction in the United States, Germany and Norway, while Dutch employees appeared to be more satisfied with their jobs in the '90s. Levels of job satisfaction appeared to differ across countries because of the level of work inputs and outcomes.

Countries like the United States that were associated with more satisfied employees had a relatively high level of work outcomes such as pay and job security when compared to work inputs such as effort. The reverse was the case for Eastern European countries that were associated with low levels of job satisfaction. The major determinants of job satisfaction included: good employee-employer relationship, autonomy and high income. The estimations of probit models for individual countries suggested that pay is an important determinant of job satisfaction in Eastern European countries. Two limitations of the study were: (1) job satisfaction was based on a single item measure and (2) instrumental variable estimation may have been able to show causal links.

The study conducted by Nielsen and Smyth (2008) focused on the relationship between workplace incentives and job satisfaction. Workplace incentives have been suggested to attract new employees and retain existing employees. The workplace incentives included HR practices implemented in the firm such as monetary incentive (high income), professional development, provision of social insurance and work-life balance practices. The authors considered those practices as they have been nominated by Chinese employees in urban areas to be important. However, these incentives can only be effective when they align employees' goals with those of the firm and provide returns to employees for effort. This study was carried out in the context of Chinese employees in 32 cities.

Estimating an ordered Probit Model, using data from the 2003 wave of the China Mainland Marketing Research Company (CMMRC), Nielsen and Smyth (2008) suggested that monetary incentives and guaranteed employment (secure job) are the most important workplace incentives as a result of the changing economic environment. The choice of these workplace practices was shown to be dependent on education as the less educated were more concerned about guaranteed employment, social insurance and practices fostering work-life balance. Comparing the findings with the literature, the authors found support for the findings as the studies have shown that the less educated and low skilled are the ones mostly affected by retrenchment. Also, it was suggested that unmarried and young employees were more concerned with income and job designs probably because they are of the generation of unstable employment (thus it is observed as a 'normal state'), while older and married employees prefer jobs with guaranteed security, social insurance and work-life balance practices. Thus, with the different categories of employees in their desired workplaces, high level of satisfaction with the job will be enhanced. The study utilised a single-item measure of job satisfaction that has arguably been emphasised not to be able to provide an adequate way of capturing job satisfaction.

The effect of organisational characterization on job satisfaction that has been outlined above was also highlighted in the study undertaken by Tansel and Gazioglu (2013). They focused on how job satisfaction is related to managerial attitudes towards employees and firm size. A good management-employee relationship was suggested to be an important determinant of job satisfaction as it is needed for afirm's performance, productivity, employees' loyalty and overall job satisfaction.

In this study, managerial attitudes that refer to management's concern towards employees regarding health and safety, staffing issues and pay issues has also been used to measure either: (1) social support in the firm or (2) informative management by studies investigating the extended version of the job demand-control model.

Using the 1997 WERS, ordered probit estimation showed that managerial attitude variables such as staffing, pay and health and safety were negatively related with firm size. Employees were less likely to be asked about their views on pay and staffing in large firms than in smaller firms. Other measures such as employees' discussion rate with management about training needs and the chances for promotion were positively associated with firm size, while employees' discussion with management about 'how they get on with the job' was not seen a concern in large firms. In the job satisfaction regressions, the results showed that job satisfaction declined as firm size increased. In order to examine if the decline in job satisfaction in larger firms is due to managerial relationships, Tansel and Gazioglu (2013) included management-employee relationship variables in the job satisfaction regressions. The results showed that the decline in job satisfaction for large firms might be attributed to poor management-employee relations. That is, employees in large firms may be less satisfied as management tend to show less concern about their pay or health and safety. However, large firms tend to discuss training needs and promotion possibilities more frequently. As such, improving management-employee relations in large firms could have positive impacts on productivity and labour turnover.

A further investigation of the impact of organisational change on employees' wellbeing was conducted by Bryson et al. (2013). They examined the effect of organisational change based on a measure that explored the introduction of performance-related pay, introduction or upgrading of computers and other types of new technology, the introduction of initiatives to involve employees and another measure that captured changes in: working time arrangements, work techniques and the organisation of work on employees' wellbeing whilst exploring the moderating role of trade unions.

Using WERS2004 and OLS regression analyses, Bryson et al. (2013) found the mediating effect of union coverage on the relationship between organisational change and job-related anxiety (a continuous measure of employees' wellbeing).

That is, increasing job-related anxiety as a result of organisational change disappeared if employees were covered by a union involved in the process of the change. Further, weak effects of organisational change were found for job satisfaction (the second measure of employees' wellbeing). This implies that organisational change has a greater effect on job-related anxiety. This supports the demand-control model where higher demands that are associated with such organisational changes were found to be more related to stress than learning or job satisfaction.

Considering different types of changes, union coverage was found to be a significant mediator of labour-related changes such as changes in: work time arrangements, the organisation of work, work techniques and procedures as well as the introduction of initiatives to foster employees' involvement. However, unions may only serve as a buffering mechanism when employees are involved in the introduction of change. The findings on the mediating effect of unions can be related to the bargaining power of such institutions to: negotiate the sort of changes that will not be detrimental to employees' wellbeing, guarantee that such changes would not lead to job loss and negotiate higher wages in return for productivity-enhancing changes. There might not be a potential endogeneity problem with these results because employee data was used and union coverage is a workplace-level variable.

To better understand the determinants of job satisfaction, Vila and García-Mora (2005) analysed the impact of employees' education and other employee and workplace characteristics on job satisfaction among Spanish workers. Using data from the 1998 Spanish Household Survey Panel, Vila and García-Mora (2005) considered satisfaction with six aspects of the work (satisfaction with pay, job stability, the work itself, number of hours, working schedule and conditions of work) as well as overall job satisfaction. Their ordered logit analyses showed that having a university degree positively influences satisfaction with pay, working schedule, the work itself and overall job satisfaction when compared with the reference category (upper secondary education). Specifically, short-cycle university degrees are associated with increases in satisfaction with job stability and working schedule while the lack of formal education and the completion of primary education are associated with a reduction in satisfaction with most aspects of the job. Also, the study showed that job stability satisfaction increases with age. Employees who are single are more likely to be satisfied with working conditions and less satisfied with

the job itself and job stability. Women are found to be less likely satisfied than men with the pay, the job itself, hours of work, working schedule, working conditions and their overall jobs.

However, when job attributes such as public sector, total number of hours worked, independent work[31] and total earnings from work are controlled for in the analysis, university education was only positively related to satisfaction with pay. Further, public sector employees were more satisfied with all aspects of the job and the overall job. Although Vila and García-Mora (2005) were able to show the effects of educational qualification on different forms of job satisfaction and overall job satisfaction, they did not test the parallel regression assumption. Also, the authors argued that the sample distributions of specific forms of job satisfaction are not homogenous, and as such, should not be combined as a single measure of job satisfaction. That is, these forms of job satisfaction provide complementary information about total job satisfaction.

Unlike Vila and García-Mora (2005), Origo and Pagani (2009) argue that employment stability is one of the most important predictors of job satisfaction and it is desirable for both workers and workplaces. Employment instability results in the loss of human capital investment as well as the presence of selection and screening costs and these have negative consequences on workplaces. Conducting panel data analyses on European countries by using micro-data from the 2001 Special Eurobarometer 56.1, Origo and Pagani (2009) suggested that perceived job security is more important in predicting job satisfaction than actual job stability (proxied by the type of contract). As such, the study highlighted the fact that perceived job security and job stability are not the same and should be treated as such.

Farrell and Rusbult (1981) used the investment model to analyse the determinants of job satisfaction; the model is similar to the demand-control model. The investment model suggests that job satisfaction is a function of rewards – including autonomy, pay, employees' participation and promotion opportunities – and costs, including job demand caused by undesirable shifts, inadequate resources, associated with the job. This proposition is generally accepted as job satisfaction is associated with increased

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[31] The study selected individuals aged between 16 and 64 years old who work at least 15 hours a week as employees in workplaces or independent workers.

rewards and reduced costs. However, in the investment model, job satisfaction is based on a reward-cost analysis that is compared to a general standard of evaluation (comparison level). This comparison level represents the average quality of outcomes that employees expect from workplaces.

The aim of Farrell and Rusbult (1981) was to use the investment model to determine the predictors of job satisfaction. Based on self-reported measures by 107 male and 56 female industrial employees, the correlation results showed that job reward and cost values were major predictors of job satisfaction (Farrell and Rusbult, 1981). Since job satisfaction is concerned with employees' positive appraisal of the job, it is expected that the positive and negative characteristics of the job will influence such an appraisal. In the analysis, different aspects of the job that were single measures such as pay, opportunity for promotion, fairness of promotion, autonomy, task identity, feedback and co-worker relations were summed to form the global measures of job rewards and costs. These measures were used with the intuition that the presence of a specific job reward generally implies the absence of a cost. However, a limitation of this 'summation method' is that information may be lost in the process and the index obtained may not be an adequately informed variable.

Apart from the effects of direct forms of 'employee voice' that are made available through the presence of participation in decisions and/or returns as well as employees' involvement, previous studies have also emphasised the impact of unions that represent indirect forms of 'employee voice'.

3.8   Unions and Job Satisfaction

Moving from the job characteristics emphasised by the demand-control model to other firm characteristics like unionism, Grund and Schmitt (2011) found a positive relation between works council[32] and job satisfaction. These councils can use their negotiating skills in making changes to the working conditions, job content and working environment of employees by ensuring cooperation between employees and management. That is, they can use their co-determination rights to negotiate working practices that would cost less to the employees. This positive association between works council and job satisfaction was found to be higher for women than

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[32] Although works council do not necessarily have power like the unions to negotiate wages or to engage in strike activities, they can still use their powers to improve the position of employees in the firm (Lazear, 2011).

men. Lazear (2011) in his book argued that institutions like works council that empower workers affect the distribution and amount of profit generated by the operations of such institutions in the firm. That is, the greater the influence of works council, the greater the proportion of the profit to the employees. The analysis conducted by Lazear (2011) showed that with the works council having limited but definite influence in the firm, the total profit to the firm would be improved. Also, works council was found to enhance the communication link between management and employees as they ensure the use of employee-provided information by the firm. With job security being fostered by the codetermination rights of the councils, employees would invest more in firm-specific skills. Thus, with such an investment, it may be suggested that employees are satisfied with their job.

3.8.1 Job Satisfaction and Economic Behaviours

Job satisfaction has been argued to be associated with important economic behaviours such as quits, absenteeism and productivity because it reflects employees' expectations about their future wages and working conditions relative to alternative job opportunities (Lévy-Garboua et al., 2005, Freeman, 1978).

The importance of job satisfaction in predicting absence from work was revealed in the research study carried out by Drago and Wooden (1992). The study outlined other predictors of absence like working hours, wage, work discipline and work groups –that may also refer to unions or works council – whilst accounting for the labour-leisure hypothesis. Using data from a cross-national dataset (Australia, Canada, New Zealand and the United States) collected on employees in 1988 and estimating a log-odds regression model, empirical evidence suggested low rates of absenteeism to be associated with closely knit employee circles in the presence of a high level of job satisfaction and vice versa. In this study, job satisfaction is confirmed to be a predictor of absenteeism.

Patterson et al. (2004) were able to study empirically whether job satisfaction mediated the relationship between organisational climate and the economic aspect of a firm's performance (productivity). Organisational climate was measured by employees' perception of a firm's policies and practices. Since organisational climate factors such as the involvement pattern, autonomy structure, and availability of supervisory support overlap in one way with job satisfaction, the authors proposed that organisational climate may not directly affect productivity. With the

aid of hierarchical multiple regressions and data collected from 42 manufacturing firms in Britain, eight measures of organisational climate were found to be correlated with productivity and the correlation was stronger when the measures of climate had more satisfaction-inducing elements.

Apart from confirming the suggestion in the Economics literature that job satisfaction influences retention, Delfgaauw (2007) also suggested that job satisfaction influences the direction of a job search. Exploring a large Dutch sample of employees in the public sector and estimating a two-step sample selection model, the study showed employees' assessment of how facets of jobs differ across jobs within the firms and industries. In general, the findings suggested that the reasons for labour turnover at the firm level include the earnings structure, management and work pressure, while at the industry level, policies to aid the reduction of labour turnover should be associated with more priority on working conditions, financial prospects and job duties.

Delfgaauw (2007) examined the direction of job search either within the firm or industry, while the study by Card et al. (2012) that is similar to Clark and Oswald (1996) revealed that relative pay comparison influences job search and job satisfaction. With the establishment of a website where the salaries of all state employees in California were listed, a subset of employees at the University of California were informed about the website (the treatment group) while others were not (control group). The experimental study by Card et al. (2012) revealed that information about the website increased the number of people who accessed the website and they reported investigating the pay of co-workers in the same work unit. Thus, knowledge about colleagues' pay was created. This knowledge about colleagues' pay was shown to cause a reduction in the job satisfaction level of workers whose earnings were below the median in their work unit/job and increased their intentions to search for jobs, while those with earnings above the median were associated with no change in job satisfaction and job search intentions. These findings thus suggest that job satisfaction is more closely associated with workers' rank in the salary distribution than relative pay rates. With these findings, it is suggested that firms will be more induced to implement pay secrecy rules so as to reduce labour turnover rates since the costs associated with lower paid workers are greater than the benefits of high paid workers.

3.8.2 The Negative Union-Job Satisfaction Link

Most studies analysing unions and job satisfaction found negative associations. The negative results may be due to the fact the presence of unions exposes the problems in the workplace (Borjas, 1979). Also, union members in workplaces covered by collective bargaining may report dissatisfaction because non-members benefit from collective bargaining without having to join union in the UK, for example (Bryson et al., 2004). Borjas (1979) who sought to analyse the effect of unionisation on wages and job satisfaction with after effects on quits, suggested the presence of a negative relation between unionism and job satisfaction. He based his hypothesis on the fact that the presence of unions may make the discrepancies of the firm more obvious to the employees. The exit-voice hypothesis (proposed by Hirschman, 1970) states that for employees' voice through unionisation to be effective in the firm, the union has to make the employees aware of the firm's problems. This awareness was suggested by Borjas (1979) to result in less job satisfaction. Also, it was suggested that such unionised firms might have always been characterized with grievances, a possible reason for union creation.[33]

Borjas (1979) was able to confirm his proposition of union members reporting lower levels of job satisfaction. This negative relation was found to be dependent on job tenure in the sense that union members with longer job tenure tend to report lower levels of job satisfaction. A possible explanation may be that the presence of a union tends to be more significant in early years in the job and diminishes after this point. Thus, the evidence suggested a strong negative relation between unions and quits in the early stages of the job. This implies that job satisfaction is an important determinant of labour force mobility. Supporting the labour force mobility argument, Freeman (1978), using American panel datasets was able to provide empirical evidence that job satisfaction is a good predictor of quits. Freeman (1978) also suggested the negative relationship between union membership and job satisfaction.

However, the evidence provided by Borjas (1979) is limited in the sense that it utilised the National Longitudinal Survey of Mature Men- aged 50-64 (U.S. Department of Labour, 1970) and did not study women. Also, the age range was restricted and a different relationship may be achieved if younger males or

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[33] This statement shows the issue of reverse causality with respect to the empirical investigation of union membership and job satisfaction.

employees were considered. Also, Borjas's (1979) and Freeman's (1978) studies could also be prone to the self-selection problem. If the presence of unions represents voice, dissatisfied workers may not leave the firm so as to be able to voice their grievances and this would show a relationship between job dissatisfaction and the presence of unions.

The negative relationship between unions and job satisfaction found in some studies (Gazioglu and Tansel, 2006; Meng, 1990, Borjas, 1979) was suggested by Bryson et al. (2004) to be due to the absence of accounting for the endogenous nature of unions. Using data from the 1998 WERS, Bryson et al. (2004) were able to provide evidence of a nonnegative causal relationship between union membership and job satisfaction. They suggested that the negative relation found by other studies was due to the inaccuracy in modelling the endogeneity of union membership and overall job satisfaction. They highlighted that due to unobserved differences such as high expectations about work and working conditions associated with union membership status and job satisfaction, workers tended to sort into union and non-union jobs in a non-random fashion. Thus, by adequately accounting for the sorting characteristic, the study found that there is no significant relationship linking job dissatisfaction with union status. The study, when restricted to pay satisfaction also provided evidence regarding the power of the union in providing a wage premium to its members.

Apart from union membership, Pfeffer and Davis-Blake (1990) suggested that a negative relation between unionisation and job satisfaction could be avoided if job attributes are controlled for. It was suggested that since it is more likely for an undesirable job to be unionised, the omission of variables such as the attributes of such jobs would result in biased results. They advocated for positive effects as unions tend to enhance employees' control over working conditions, reduce wage discrimination, increase wages through their bargaining power and facilitate employees' commitment to the job. Exploring the 1977 Quality of Employment Survey and conducting single stage and simultaneous modelling, empirical evidence was provided for the positive effect of unionisation on job satisfaction when workplace attributes were included in the model. Also, the analyses revealed that involvement in union activities and feeling of control had a significant positive effect on satisfaction. However, this study utilised a single item measure of job satisfaction with basic econometric techniques.

With reference to the study carried out by Borjas (1979), Theodossiou and Zangelidis (2009) suggested that the job tenure-job satisfaction link is contingent on career development opportunities. With the study exploring a two-tier labour market framework by utilising the first 14 waves of the BHPS, the findings revealed that employees in jobs without career development opportunities do not exhibit higher levels of job satisfaction as their tenure accumulates. On the other hand, employees with career opportunities at their disposal tend to reveal a decline in job satisfaction initially but as the employment relationship matures and career opportunities become more evident, higher levels of job satisfaction are shown. Thus, the inclusion of the availability of career development opportunities in the study carried out by Borjas (1979) may have elicited a positive result.

3.8.3 Variations in the Analysis of the Union-Job Satisfaction Relationship

Most studies on the analyses of unionisation and job satisfaction have compared union members to their non-member counterparts. The evidence on the relationship between unions and job satisfaction has been mixed. Some studies found significant positive relations, while some studies found significant negative relationships or non-significant relationships. Some studies have also argued that the negative relationship was found because some relevant factors were not accounted for and the measures of some concepts were inadequate. The negative relationship is quite puzzling as the reason for joining a union is to experience an improvement in working conditions.

Advancing the study of unions and job satisfaction, Haile et al. (2012) analysed another dimension of the unionisation-job satisfaction relationship. They envisaged that the presence of a union could cause job dissatisfaction among non-union workers in a unionized workplace when compared to their colleagues in non-unionised jobs. They suggested that the negative effect of unions on job satisfaction may be due to the fact that unions breed discrimination or probably non-union workers were reluctant to join unions. Utilising the 2004WERS, they found a negative relationship between union status of the workplace or co-workers and job satisfaction of non-union workers (a proxy for wellbeing).

The other measure of wellbeing used (the absence of job-related anxiety) was discovered not to be related to the union status of the workplace or co-workers. The job satisfaction analysis was based on a measure constructed from eight forms of job

satisfaction. Despite the use of a very rich dataset and matching estimator, it may be suggested that analysis of the level of satisfaction with each aspect of the job would have been more accurate rather than using a measure that was constructed from eight forms of job satisfaction. This may also serve as a possible explanation for the non-significant link between the absence of job-related anxiety and union status.

Also, investigating the relationship between unionism and job satisfaction but without using the traditional measurement of unionism, Leigh (1986) was able to provide empirical evidence on the relationship between employees' desire for unionism and job satisfaction. Using the 1980 wave of the young men sample of the National Longitudinal Survey, the logistic analyses revealed that the probability of desiring union representation was the same among dissatisfied, moderately satisfied and satisfied union employees. Focusing on non-union employees on the other hand, those that were dissatisfied with the job tended to desire union representation more than their satisfied colleagues. These findings were consistent with the union-voice hypothesis and the literature (an increase in job dissatisfaction increases quit rates among union and non-union employees but with the quit rates more prominent among the latter). By controlling for some factors, the hourly wage rate was discovered to increase the desire for union representation among both union and non-union workers. However, these findings are not generalisable as the literature shows that the rate of satisfaction is different between males and females. Also, if it is claimed that the study is representative of male workers, the findings may still be restricted as it was just the young men sample of the survey that was considered.

Despite the three known important effects of unions (the wage effect, collective voice effect through grievance procedures and the collective bargaining effect) in the firm, most studies have neglected the union bargaining effect. Advancing the understanding of the union membership-satisfaction puzzle, Bryson et al. (2010) proposed that the inclusion of union bargaining coverage into the relationship would be important. This is essential in countries like Great Britain where up to 40% of employees covered by collective bargaining are non-union members (this category can be considered as free riders as they tend to benefit from collective bargaining without joining the union), while 26% of those that are not covered are union members.

Using 1998 WERS and controlling for the selection of workers into covered and non-covered jobs, Bryson et al. (2010) found that covered union members tend to be less satisfied than their covered non-member colleagues. This result reveals an inherent free riding element in the British context in that the covered non-members enjoy the benefits of collective bargaining. In the same vein, union members in non-covered jobs tend to express dissatisfaction with their job and this is consistent with the voice effect. A possible explanation may be that union members in non-covered workplaces tend to voice their dissatisfaction because there is no union representative to act on their behalf. Also, the analyses revealed that employees tend to be more satisfied in covered jobs than their counterparts in uncovered jobs.

However, Gordon and Denisi (1995) were able to provide empirical evidence suggesting that with collective bargaining ensuring a similar working environment for both members and non-members, there should not be a job satisfaction differential between union and non-union members. They argued that the satisfaction differential associated with studies could be due to the fact that unionised and non-unionised work environments are compared.

3.9   Methodological Issues of One vs Several Indicators of Job Satisfaction

Apart from the endogeneity issues besetting Borjas' (1979) and Freeman's (1978) studies, another issue was the reliability of the measures utilised as both studies measured job satisfaction using a single item. This might possibly be the reason for similar findings. That is, the measure made reference only to the feeling about the job in general. Such single-item measures have been criticised for bias as they may not adequately capture satisfaction based on all facets of the job. Locke (1969) who argued against the use of a single item measure suggested that a job is a combination of various tasks carried out by an employee with the aim of being rewarded. Thus, a measure of overall job satisfaction should encompass measurements of satisfaction with all the facets of the job. In light of this, single-item measures have been criticised for lower reliability (Weaver, 1977). Moreover, Weaver (1977) proposed that an overall index of satisfaction could be obtained by summing all the measures of satisfaction with different facets of the job that the employee responded to.

Meng (1990) confirmed that union members were less satisfied with the quality of their job than non-union members, while union members were more satisfied with financial compensation and job security. Thus, this study emphasised the importance

of considering different forms of job satisfaction. Meng's (1990) study was quite different from that of Borjas (1979) and Freeman (1978) as the analysis was conducted using Canadian data and three forms of job satisfaction. The analyses supported the findings of Berger et al. (1983) as unionised employees were discovered to be satisfied with pay and job security. One interesting finding was that union membership was negatively related to overall job satisfaction. This implies that: despite the fact that unionised employees were revealed to be satisfied with pay and job security, it would be incorrect to state that they are satisfied with the overall job.

The deficiency arising from the use of a single item measure was made apparent in the study carried out by Berger et al. (1983). In their own study, based on the theoretical framework developed by Locke (1969), they proposed that there is no direct relationship between unions and job satisfaction as such effects occur through work values (what an employee wants or desires from the job) or work perceived outcomes that are received (what is perceived to be offered by the job). Using data from the 1973-1977 Quality of Employment Survey Panel and running multiple regressions, no relation was discovered between unionisation and satisfaction with the job itself. The findings also confirmed that there is an indirect positive relation between unions and pay satisfaction as unions tend to increase wages and promote the possibilities of fringe benefits. That is, the positive relation between unions and pay satisfaction was moderated by work perceived outcomes.

Negative associations were found between unions and satisfaction with supervision and colleagues as well as satisfaction with promotion opportunities. When the effect of unions on overall job satisfaction was estimated, union members were discovered to be less satisfied than their non-union colleagues. Thus, it can be stated that the negative effects of unions on satisfaction with supervision and colleagues, the job itself and promotion more than offset the positive effect of unions on pay satisfaction. If a single item measure was used, it could have just been assumed that union is negatively related to job satisfaction by ignoring the fact that there are different facets of satisfaction. Evans and Ondrack (1990) replicated the findings by Berger et al. (1983) in their Canadian dataset. The study restricted the analysis to males that were fully employed and estimated the model using hierarchical multiple regression analysis.

Skalli et al. (2008) also emphasised the fact that overall job satisfaction is a weighted outcome of the employee's levels of satisfaction associated with different facets of the job, thereby criticising the use of a single-item measure. They observed that job satisfaction depends on the variety of feelings associated with job characteristics such as working conditions. That is, satisfaction with pay is different from satisfaction with the level of achievement. However, each form of job satisfaction is still a component of overall job satisfaction. In order to determine the effects of satisfaction with different aspects of the job on overall job satisfaction, the authors explored the European Community Household Panel (ECHP) and estimated a two-layer model. Empirical evidence revealed that the overall job satisfaction of employees depends on how satisfied they are with different aspects of the job. Satisfaction with the type of job was identified to be the major criterion used for job evaluation. Thus, with the results provided by this study, it is suggested that the way a job is designed is very important as it impacts on employees' satisfaction with the job. This study is quite different from other studies analysing the effect of job characteristics on job satisfaction because it focuses on employees' own evaluation of job characteristics.

3.10 Conclusion

This chapter has reviewed the concept of employees' engagement practices, unions, job satisfaction and performance as well as the costs associated with employees' engagement practices. The solutions provided to deal with these costs in workplaces were observed to be inadequate. As such, an important point that is drawn from all these arguments is that the forms and compositions of employees' engagement practices are to be considered when analysing the effects of these practices. Also, the literature showed that there are other important determinants of job satisfaction that should be considered in such analyses.

Apart from these practices facilitating job satisfaction, scholars in the Work Psychology, Industrial Relations and HRM literature have examined the concept of 'employees' engagement practices' as employees having control over their jobs. The practice of employees having job control is suggested to be beneficial when the level of job demand faced by employees is less than or equal to the level of job control available to employees. Thus, these scholars suggested that employees' wellbeing depends on two job characteristics: demand and control. In analysing employees'

wellbeing, these scholars have widely utilised Karasek's model (also known as the demand-control model). The next chapter reviews the demand-control and demand-control-support models in detail and previous studies on employees' wellbeing that have relied on these models.

Chapter 4. Demand-Control and Demand-Control-Support Models

Demand-control and demand-control-support models have been widely used to analyse employee's wellbeing, both theoretically and empirically (psychological strain – job stress, job satisfaction, learning opportunities). Before highlighting previous studies on these models, we outline in detail the theoretical foundations of these models.

4.1 Demand-Control Model

The demand-control model developed by Karasek (1979) has appeared to have rapidly dominated the work and organisational psychology field. The model emphasises that a job is stressful when there is a high level of job demand and a low level of job control (strain hypothesis). That is, the model assumes that a work environment is characterised by a combination of job demand and the amount of job control available to the employee to cope with such demand. This is the basic tenet of the model as it postulates job control is a moderator of the potential negative effect of job demand on employees' wellbeing (Panatik et al., 2011; McClenahan et al., 2007). The job is argued to ensure employees' optimal motivation as well as learning and growth when a high level of control is associated with a high level of job demand from the job (learning hypothesis). Based on this model, wellbeing can be defined as diminishing stress on the one hand and facilitating learning opportunities on the other hand.

This model is one of the major theoretical models used in studies on mental health and psychosocial work conditions. The model proposes psychological strains and subsequent physiological illness as the consequences of the joint effects of job demand and job control depending on the availability of the job characteristics to the employee. It suggests that the job stress that causes psychological strain is associated with the two job characteristics, which include job demand and job control. Job demand refers to the quantity and pace of work associated with the job. In other words, job demand includes both psychological and physical demands. The physical demand may take the form of the demand on employees to acquire new workplace skills so as to be able to deal and cope with rapid technological changes

and competition that beset most work environments. Karasek's (1979) definition of job control constitutes two elements: decision-making latitude and skill discretion. That is, the rate employees decide for themselves what tasks to do, how and when to do them. It is the individual's ability to meet the job demand and it consists of how employees make decisions about work and working conditions and their ability to utilise their skills.

While most studies have confounded the concept of job control by broadly defining or measuring it as the decision latitude that employees have in their job, studies such as the one conducted by Weststar (2009) distinguished between two aspects of job control: social and technical control. Social control refers to control over individuals and management activities and includes ownership and decision authority. Some studies on employees' participation in the firm refer to this type of control as participation in decision-making at the management level. Sainfort (1991) in his study identified such type of control as conceptual control and that it occurs at the work unit level. Technical control on the other hand refers to the control of tasks performed and autonomy in the work domain. This is also referred to as employees' participation at employee level by the employees' participation studies. Sainfort (1991) referred to this type of control as instrumental control and it occurs at the task level. Weststar (2009) remarked that the distinction between the two forms of job control is essential as an employee may have control over his/her own technical task but not have any form of authority in management decisions and vice versa.

The demand-control model, which has been extensively utilised in the research studies on job stress, became prominent because of an increase in the concern over mental health. Prior to the development of the model, most studies considered the effect of physical hazards on employees' health. However, due to the shift to service jobs and the computerisation of tasks in the firm, the relevance of job demand increased as well as concern for the mental health of employees.

Karasek (1979) and De Witte et al. (2007) suggested that job demand does not necessarily have negative effects. They suggested that a high level of job demand facilitates a state of arousal and if this state of arousal is not associated with effective coping strategies through the availability of discretion, it may result in psychological strain (also known as unresolved stress). Karasek and Theorell (1990) suggested that organisational reconstruction emphasises control opportunities

through participative decision-making and is characteristic of the work environment of a healthy job. That is, sense of control improves wellbeing because it encourages active problem solving and allows employees to change their environment so as to be able to deal with job demand (Wallace, 2005). This means that the effect of job demand on employees' wellbeing varies with the amount of control an employee has over tasks (McClenahan et al., 2007). This in turn results in the standpoint of Karasek (1979) as he maintains that the interaction effects (the joint presence of job demand and control) should be more significant in predicting job stress than the additive effects. In sum, Karasek (1979) argues that job stress has its origins in the structural aspects of the job and not in individuals' attributes.

Supporting Karasek's (1979) proposition, De Jonge et al. (1999) also highlighted the fact that the demand-control model is a 'situation-centred model' because it goes beyond the employee rather than the innate characteristics of the individual (habits, feelings). Psychological and physical strains are used to refer to the measureable effects of internal stress that are caused by one or more 'workplace stressors'. Some studies that have named the physical and psychological demand at work 'workplace stressors' (that is, stress-causing factors) considered such factors as being perceived by the employee to be problematic and these include: role ambiguity, role conflict, role overload, tight schedules, responsibility for others, and concern for quality (Beehr et al., 1990; Winnbust et al., 1982; Marcelissen et al., 1988). Individual strain can take the form of issues with quality or performance, psychological malfunctioning, absence or disruption of interpersonal relationships and health complaints.

With varying degrees of job stress/strain conceptualisation that has caused terminological confusion in the literature, Söderfeldt et al. (2000) considered job stress as job pressure that is a result of disequilibrium between job demand and job control. In summary, the job demand-control model explores the impact of job design on employees' wellbeing as it has been used to analyse the relationship between the work environment and cardiovascular disease and psychological distress. In analysing job stress, Marcelissen et al. (1988) utilised the 'Michigan model'. This model was developed at the Institute for Social Research at Michigan University and considers job stress as a relationship between an individual and the environment. This model defines job stress as a situation whereby an employee perceives that there is a substantial imbalance between the demand from the job and

his/her response capability or resources available to match the demand (Marcelissen et al. 1988; Pelfrene, et al., 2001). This occurs in an environment where failure to meet job demand induces important consequences (Winnubst et al., 1982). This model posits that an individual may be stressed as a result of two situations: (1) when the resources available are insufficient to meet the demand from the work environment and (2) when there are insufficient opportunities to meet the needs of the individual. In line with the proposition by the demand-control model that workplace stressors result in physiological and psychological strain, the Michigan model assumes that such strains will eventually result in illness.

In sum, Karasek and Theorell (1990) outlined the two major predictions of the demand-control model as:

- ✓ The presence of high level of job demand and low level of job control available to the employee results in job stress (strain hypothesis)
- ✓ Personal grooming/growth, learning, motivation and skills acquisition are associated with active jobs (learning hypothesis). Active jobs can be defined as jobs where job demand is matched with adequate levels of decision-making authority. Thus, such jobs provide the ideal work situation, which promotes psychological growth and learning as employees have job control opportunities to experiment with various ways of dealing with job demand.

With active learning associated with active jobs and being one of the dynamic processes that underpin the demand-control model, this implies that the workplace environment and job design (job demand and job control) play significant roles in the motivation to undertake learning activity (Weststar, 2009 and De Witte et al., 2007). According to Karasek and Theorell (1990), learning at work can be defined as the motivation to develop new strategies, which facilitates improved competence and behaviour at work. Learning is traditionally defined as a system of teachers and learners. However, learning is a continuous process as adults engage in learning through the changing aspects of everyday life. This motivation to learn is argued to be intrinsic, thus, autonomy is identified as an important determinant of intrinsic motivation (Van Yperen and Hagedoorn, 2003). Workplace learning ranges from the basic forms of learning and involves low level of job control to more advanced or complex productive learning, which is associated with high levels of job control and

active engagement in problem solving to deal with job demand (Bergman et al., 2012).

Karasek and Theorell (1990) and Daniels et al. (2011) observed that the active learning hypothesis is related to employees using their high-control opportunities to neutralize job demand into challenges that in turn facilitates learning (this implies job demand increase the possibilities of learning on the job). Karasek and Theorell (1990) in explaining the active learning hypothesis suggested that most learning should occur in demanding situations and especially when individuals are able to exercise control and decision-making capabilities. That is, with control, employees use their initiative to deal with problems, determine how to cope with such problems and learn from such problems about what is effective and ineffective so as to be able to deal with future problems.

This resulting learning process has been suggested by Karasek and Theorell (1990) and Taris et al. (2010) to result in the development of mastery and self-efficacy and in turn will reduce stress. As such, a job composed of low job control and high job demand as well as low job demand/low job control will breed relatively low levels of self-efficacy and feelings of mastery because there will be little or no opportunity for learning and development. With the emphasis on keeping the workforce up-to-date through the learning process and the utilization of the knowledge capacity of employees, a good understanding of workplace learning activities is important. Most learning is informal in nature. That is, a type of learning that occurs when individuals analyse the experiences they encounter at work on a daily basis. This implies that this type of learning depends on the work environment and includes characteristics such as job demand, job control and social support. Despite strong focus on educational attainment and workplace-sponsored training in the workplace, there is also the learning-by-doing aspect that results in firm-specific human capital when such learning is specific to a particular firm.

In the same vein, in order to avoid providing unclear support for the demand-control model, de Jonge et al. (1999) suggested that researchers should be careful not to confuse job demand and job control with other job characteristics because constructs like 'hectic work' may mean various things in different work contexts. Also, they pointed out that another reason for inconsistency in the literature on demand-control model is the assessment of job characteristics. Since the model is concerned with

how the work environment predicts job stress, it implies that job demand and job control are job characteristics and not individual characteristics. However, job demand and job control, which are reflections of the objective work environment, are generally reported by employees and this can make their measurements prone to bias. The job characteristics are reported as perceived by employees and thus may not represent the objective task accurately. It may be suggested that the combination of a workplace's perception as a reflection of the objective environment with employees' perception of job characteristics may neutralise the bias associated with such measures of job characteristics when only reported by employees.

4.2   Demand-Control-Support Model

Since Durkheim's work on 'suicide', social scientists have seen the importance of individuals being integrated/embedded into a social group on wellbeing and as such the absence of social ties tends to have negative effect on wellbeing and mental health. Based on this exposition, social support by workers and supervisors (apart from job control) has been argued as an important potential psychosocial resource that can moderate and improve understanding of the demand-strain relationship (Johnson and Hall, 1988 and Karasek and Theorell, 1990). This is seen as an expansion of the demand-control model with the inclusion of social support. This job demand-control-support model is also referred to as a model of job design and firm performance. Social support is considered as a potential psychosocial factor because individuals are involved in social networks that influence their strengths and weaknesses and this in turn affect their attitudes and outcomes. Social support has its foundation in the Hawthorne experiments in the 1920s as social support like support from colleagues and supervisors were suggested to directly determine productivity through 'norms of fair performance' (Karasek and Theorell, 1990).

Before the extension of the demand-control model to include social support, series of studies examined the effect of social support on employees' strain by utilising the 'Michigan model'. According to this model, it is assumed that it is the behaviour of an individual (that is, a competitive, hurried and aggressive striving style of coping with stress) and social support that moderates the workplace stressors-strain relationship (Marcelissen et al., 1988). Thus, social support is seen as a factor that buffers the negative effects of workplace stressors on an individual's wellbeing. Based on the moderating factors highlighted by the 'Michigan model' (the model

does not consider the level of control available to the employee), it predicts that the availability of a high level of social support at work reduces the likelihood that workplace stressors will result in physical and psychological strain and vice versa. The model proposes that social support (colleagues and(or) supervisors) will have a positive effect on employees' wellbeing even in the presence of a high level of workplace stressors by facilitating motivation in dealing with job demand, providing solutions to problems, by giving clearer work directions or allocating tasks to other employees in order to prevent work overload.

As a result of the stress literature showing the importance of social support in the workplace through the use of the Michigan model, Johnson and Hall (1988) saw the importance of extending Karasek's model to include such factors in order to further explain the determinants of employees' strain and how demand-strain can be moderated. With the introduction of social support as an important moderator of the negative effects of job demand (just as in the case of job control), Johnson and Hall (1988) argued that employees have the highest risk of poor wellbeing when they are in a high isolation-strain (iso-strain) job. This is a job characterised by high job demand, low social support and low job control.

Social support relations at work refer to the overall levels of helpful social interactions obtainable at work from colleagues and supervisors/managers (Karasek and Theorell, 1990). Helpful social interactions include: emotional concern and sympathy from colleagues and supervisors, informational support, practical support (advice) and appraisal (Brough and Pears, 2004; Marcelissen et al., 1988). Karasek and Theorell (1990) suggested that such relations in the workplace might affect wellbeing in diverse ways. Apart from social support affecting wellbeing by being a moderator of the psychological stressors and adverse health outcomes relationship, it has also been suggested to facilitate active coping patterns that in turn may affect productive behaviour (Söderfeldt et al., 2000). Furthermore, social support was suggested to promote a positive sense of identity based on the confirmed value of the employee's contribution to a collective goal.

In the same vein, Daniels et al. (2011) suggested that with social support allowing for the collective discussion of problems, it also facilitates problem solving and information sharing. Apart from problem solving, Brough and Pears (2004) indicated that social support also entails obtaining advice from colleagues,

supervisors or managers. Akerlof (1982) also outlined the importance of social support in the firm using the gift-exchange theory. Social support that involves the interaction of employees results in the development of sentiments for co-workers and the firm. Akerlof (1982) argued that an increase in minimum standards as a result of better performance by some workers that in turn puts pressure on the less able colleagues, will result in the view of such action as a non-reciprocal gesture in exchange for the gift of collective increased productivity by the group of workers. Akerlof (1982) suggested that with the presence of social support in the firm, employees gain utility by supporting their less able co-workers and working harder in excess of the minimum standards. This extra effort represents a gift to the firm for not punishing less able workers (through dismissal).

The scenario used in Akerlof's (1982) study also corroborates the suggestion of Daniel et al. (2011) in the sense that the outputs of some workers that are higher than the minimum standards serve as media for solving the problems of their less able co-workers. The problems of the less-able co-workers are solved in the sense that the gifts of outputs that may not be given to the firm are provided by their supportive colleagues. Thus, it might suffice to say that social support not only breeds sentiments but also ensures collective accountability that is seen as the norm of the work group. Another point to note is that the control for individual-difference factors or social preferences such as reciprocal fairness and intrinsic motivation is important when analysing social support in the firm. This is so because in the case of the 'Cash Posters' that were examined by Akerlof (1982), those who worked in excess of the minimum standards did so not because they were expecting monetary benefits in return but because of their interest in the welfare of their co-workers that they valued highly.

Also, these cash posters' motivation negates the economic reasoning based on the self-interest hypothesis. This is the assumption that all individuals are motivated by their 'material self-interest'. This reasoning is in contrast not only with heterogeneity as a result of intrinsic motivation and social preferences but also with economists' arguments about heterogeneous tastes and preferences regarding consumption activities.

The two major types of social support outlined by Karasek and Theorell (1990) include:

Socio-emotional support: this moderates psychological stress at work. It is measured by the extent of trust, social and emotional relations with colleagues and managers. It also takes the form of providing sympathy (Beehr et al., 2000).

Instrumental social support: support from colleagues or managers with regards to assistance with job tasks. However, a setback of such support is that the assistance with complex tasks may result in task interdependency and this may result in stress.

With the inclusion of social support, the model predicts that the combination of high level of job control and high social support results in a 'participatory leader'. The individual is a 'participatory leader' in the sense that the employee shares power, has influence and may also affect some collective decisions. The combination of low control and high level of social support results in an 'obedient employee', while high job control and low support result in 'cowboy hero' (an independent employee) and the combination of low level of job control and low social support results in an 'isolated prisoner'.

Figure 4.1: Demand-Control-Support Model
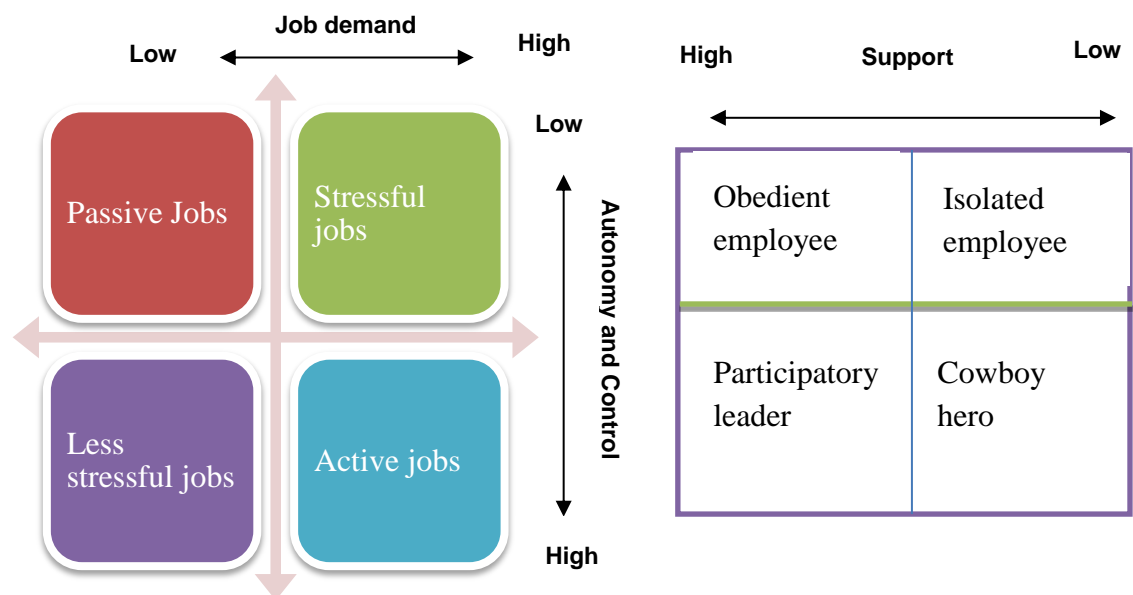
Source: Adapted from Karasek and Theorell (1990)

Social support, which is seen as a means of de-stressing employees has been investigated in stress research studies but its supporting evidence is inconsistent. Some studies have found it to have a significant buffering effect; some have found it to be effective above a certain threshold while others have also discovered it to be non-significant. This inconsistency has been said to be due to methodological (measurement unreliability) and/or conceptual problems. The conceptual problems

refer to the ambiguity associated with the form of support that is been analysed. Some studies fail to specify the form of social support that is being examined or that various types of social support are combined into a composite measure of social support. The conceptual problem is quite major as the form of social support in the firm might determine whether and how it buffers the demand-strain/job satisfaction relationship. Beehr et al. (1990) pointed out that social support is mainly about communication and as such what is discussed in the workplace may vary. This variation in what is discussed may influence the stressor-strain relationship and this means the content of communication could act as a moderating factor. The content of communication may be positive or negative and could even be non-work related. As such, they may have different buffering effects. A more recent study by Beehr et al. (2000) outlined the importance of using more specific measures of social support and stated that such measures ameliorate the non-significant buffering effects.

Having outlined the assumptions and compositions these models, subsequent sections consider analyses of the hypotheses of these models in different contexts and on different outcome variables. Also, previous studies, which have advanced the models by including different individual-difference variables, were considered.

Table 4.1: Summarised Findings of Previous Analyses on Job Satisfaction

Author	Data	Measures of Job demand and control	Empirical Approach	Findings (job satisfaction as dependent variable)	
				Job demand (-ve)	Job control (+ve)
Wood (2008)	WERS2004	Composite indexes based on different measures of demand and control	Weighted regression analysis	Yes	Yes
De Witte et al (2007)	Data on Flemish adults who were 23 years	Autonomy- Job control Workload- job demand	Binary logistic regression	Yes	Yes
McClenahan et al (2007)	A sample of lecturers at a UK university	Not specified	Hierarchical regression analysis	Yes	Non-significant
Noblet et al (2006)	Data on an Australian medium-sized public sectior firm	Job demand and job control	Two-step hierarchical regression analysis	Not examined	Yes
Noblet and Rodwell (2009)	Data on an Australian state-based law enforcement agency	Job demand and job control	Multiple regression analyses	Yes	Yes
Mikkelsen et al (1999)	Data from Norwegian postal service	Job demand and job control	Hierarchical regression analysis	Yes	Yes
Morrison et al (2003)	Employees of Hospital Trust in Britain	Individual-level measures of Job demand and job control	Multi-level analysis	Yes	Yes
Mikkelsen et al (2005)	Employees in 13 Norwegian electric companies	Quantitative and emotional forms of job demand Job control	Covariance structural modelling	Yes	Yes
Akerboom and Maes (2006)	Carers of mentally disabled people from 3 public residential institutions in	Job demand Job control – decision	Hierarchical regression analysis	Yes	Yes

Author	Data	Measures of Job demand and control	Empirical Approach	Findings (job satisfaction as dependent variable)	
				Job demand (-ve)	Job control (+ve)
	the Netherlands	latitude and skill discretion			

4.3 Main Effects of Job Demand, Job Control and Social Support on Employee and Workplace Outcomes

Karasek's (1979) theory suggested that the empowerment of employees and job demands are positively and negatively related to job satisfaction respectively and a wide range of studies have supported these propositions. Wood (2008), who utilised WERS 2004 and conducted weighted regression analyses, found results that were consistent with the strain hypothesis of the job demand-control model. The findings revealed that employees tend to be more stressed when they are faced with a high level of job demand and a low level of control. The result also supported the theory by revealing a negative relationship between job demand and the two measures of employees' wellbeing (job satisfaction and anxiety-contentment) and a positive relation with job control. Having a voice in the firm (measured by the perception of consultative management) was found to be related to the measures of wellbeing.

The study by de Jonge et al. (1999) also suggested individual-level measures of job demand and control as predictors of adverse health outcome (emotional exhaustion and job-related anxiety). These measures are based on workers' perception of job characteristics. The findings revealed that the demand-control model might be classified as a person-centred model. The person-centred model focuses on how an individual's feelings and cognition influences job stress.[34] Also, the findings corroborated the literature on job redesign and job stress. Thus, the findings provided suggestions regarding the redesign of workplace practices such as the provision of employees' support that appeared to reduce emotional exhaustion and job-related anxiety. In summary, the study suggested that it is important to consider working conditions when predicting employees' health and expedient to focus on employees individually too.

Weststar (2009) also considered an extended version of the job demand-control model by investigating the less explored learning hypothesis (instead of the employees' strain). He emphasised the limitations associated with the measure of job control by distinguishing between social (broad decision-making) and technical (control and autonomy in the work domain) types of job control. Using the Work

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[34] The person-centred model seeks to understand the relationship between job characteristics and employee reactions.

and Lifelong Learning (WALL) data[35] that provided detailed information on employees' engagement in formal and informal learning as well as job characteristics, Weststar (2009) tested an extended version of the job demand-control model including job demand, social and technical forms of job control and work-related learning. The workplace-related learning was conceptualised into two categories: formal learning (further adult education) and informal learning (informal education and non-taught learning).

The analysis, using the logistic estimation method revealed that: job demand was positively associated with the two categories of learning, social job control was associated with the two types of informal learning and technical job control was associated with non-taught learning. These results imply that job demand creates learning opportunities and increases employees' participation in decision-making as well as discretionary control in their jobs. These types of job control also facilitate the smooth running of learning activities and ensure the timeliness and relevance of learning. As such, with a high level of demand and control, employees will be induced to engage in learning and to utilise the knowledge gained from learning and this in turn will improve productivity and efficiency. The firm will benefit from redesigning the job. One of the limitations of Weststar's (2009) model is the use of a single-item measure for the dependent variables and a cross sectional survey.

De Witte et al. (2007) found the same results as Westar (2009) and also corroborated the Karasek strain hypothesis. They used data on employed young Flemish adults born in 1976 and aged 23 at the time of data collection, and who were in their first job. The binary logistic estimations showed a positive relationship between autonomy (measure of job control) and job satisfaction and a negative relation between workload (measure of job demand) and job satisfaction. They, thus, confirmed the main effects of Karasek's model and concluded that the presence of a high level of workload and a low level of job control will result in high strain jobs.

Ouweneel et al. (2008) also found the same main effects by testing the demand-control-support model on informal learning among 1,588 Dutch home-care managers. The authors assumed that managers tend to develop new strategies in the face of a challenging work environment and achieve new levels of competence.

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[35] This is a large representative sample of the adult Canadian population (18 years and above).

They used stepwise linear regression analysis and showed that job demand, job control and social support (support from supervisors and colleagues) were positively associated with informal learning in the workplace. Job control and social support were found to have a stronger positive influence on informal learning. However, no significant interaction effect was found. Some minor points of criticisms about the study are that: (1) it was a cross-sectional study, which hinders causal interpretation. (2) The subjectivity of the self-reported measurements may have affected the results. The inclusion of more than four job characteristics could have improved the results.

Investigating the effects of job demand on psychological distress over time, Dalgard et al. (2009) found support for the reverse causal effect. The authors conducted hierarchical multiple regression analyses on a sample of 439 Norwegian workers of different occupations (who stayed in the same profession in the 11-year follow-up). Psychological distress was found to be associated with an increase in job demand over time as against job demand, resulting in psychological distress over time. A possible explanation for this finding may be that the anxiety and depression associated with some workers may negatively affect their perception of the workplace over time.

Examining the demand-control model in more demanding contexts and providing support for context-specificity in the work stress research studies, Lourel et al. (2008) analysed the impact of Karasek's demand-control model on the mental health of fire fighters. Using data on 101 French fire services volunteers and conducting structural equation modelling, they confirmed hypothesis 1 as emotional exhaustion and loss of sense of identity were both found to be positively associated with job demand and negatively associated with job control. They additionally found that job control was not related to personal sense of achievement (hypothesis 2). The confirmation of the first hypothesis signifies that such jobs are associated with psychological stress. The study presented some limitations. It may only be applicable to French fire fighters, as the data were self-reported. Despite these limitations, the study provides an understanding of the mechanisms of psychological stress and ways to improve French fire fighters' health and wellbeing.

In another attempt to capture the effects on a sample characterized by high level of stress, Tucker et al. (2008) tested Karasek's demand-control model on US soldiers. The study focused on six waves of the dataset that were collected three months

apart.[36] The descriptive statistics and then hierarchical linear regression analysis confirmed previous studies and found that job demand, as measured by work overload, was positively related to affective strain at each time point, while job control was negatively related to affective strain at each time point.

However, the results revealed that the effects of increased demand and control were not carried from one quarter to the next. These findings support the argument that soldiers are more likely to be strained at the outset of a stressor[37] (within three months) and they can either adapt to the increased job demand associated with deployments or are provided with support so that their perceived strain does not exceed three months. Despite the fact that the buffering effect of control was not supported, evidence was provided for the additive effects of the components of the demand-control model. Considering the reverse causal effects, the study provided empirical evidence that soldiers who experienced strain tended to report increased job demand and low level of control in the next quarter. This implies that workplace characteristics are associated with emotional and psychological responses that affect employees' subsequent appraisal of the workplace. That is, stressors increase strain, which in turn increases stressors.

Taking into consideration the level of inconclusiveness associated with the buffering effect of social support in the literature and identifying various workplace stressors (job demand) and their effects, Beehr et al. (2000) used more specific measures of social support and workplace stressors. They considered the relationship between workplace stressors and psychological strain and performance among sales personnel and how co-worker support could weaken the relationship. They distinguished between various types of workplace stressors: acute job-specific stressors[38], job-specific 'chronic' stressors[39] and generic 'chronic' stressors.[40]

Correlation and regression analyses revealed that workplace stressors are related to psychological strains, especially depression and to a lesser extent to frustration. Moreover, the job-specific 'chronic' stressors were found to strongly explain

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[36] The authors utilised these six waves to test if stress effects persisted over time as showed in Dalgard et al. (2009).

[37] Stressors also refer to job demand facing employees.

[38] Acute job-specific stressors refer to job-specific events that occur on the job probably during an average work week (short-term stressors).

[39] Job-specific 'chronic' stressors are thought of as being constant for an employee.

[40] Generic 'chronic' stressors are stressors that are constant for employees such as role ambiguity and work overload.

psychological strains. This implies that such stressors assess more important aspects of the job and are more salient to the employee's work environment than work overload or role ambiguity. The workplace stressors were also found to predict the measures of job performance, particularly the dollar value of sales while the number of demonstrations was not as relevant. Focusing on the direction of effects, employees with work overload were found to be more productive. Despite the authors' use of specific measures of social support, only the main effects of social support were found. However, the study showed that workplace stressors that are specific to the job are more important in predicting psychological strain and performance.

In an earlier study, Beehr et al. (1990) investigated how the contents of communication[41] had different effects on the job demand-strain relationship. Using data collected on nurses in seven hospitals in Michigan and hierarchical regression analyses, the authors showed that the presence of positive work-related and non-work related communication with supervisors facilitated employees' perception of tangible support and assistance from supervisors (functional social support), while negative work-related discussions showed little relation. Also, communication with supervisors, especially positive communications, mainly impacted employees' strain (emotional exhaustion, depression and depersonalisation). These findings imply that the sort of issues discussed in the firm have varying effects on employees' strain.

Embracing the findings from Beehr et al. (1990) and Beehr et al. (2000), Brough and Pears (2004) examined the influence of practical and emotion support (from both colleagues and supervisors) on job satisfaction and the psychological health of workers in Human Services. This occupation was particularly of interest because it involves heavy workloads and responsibility for others. The findings revealed that social support from co-workers did not significantly predict job satisfaction and the psychological health of workers. On the other hand, a supervisor's support was positively and significantly related to job satisfaction and not the psychological health of workers. An implication of this finding is that the source of social support is essential when analysing the effect of social support in the workplace.

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[41] The contents of communication are key factors in social support regardless of whether it is positive, negative or non-work related.

In line with this, the findings revealed that the type of social support was also important. A supervisor's practical support was the only factor significantly related to job satisfaction. This is somewhat expected as employees would prefer to utilise problem solving support from supervisors to solve work-related problems rather than emotional support. Therefore, the specificity of the type of social support is very important as the impact of emotional support is different from practical/problem solving support. The small sample size of this study (N=95) may have affected the results. Also, the study was cross sectional in nature and did not allow for causal interpretations. Finally, there may also be the problem of common method variance due to self-reported measures.

A causal exploration was undertaken by Marcelissen et al. (1988) using a longitudinal panel design of employees of Dutch companies sampled at three different points in time. They, conducting Linear Structure Relationship (LISREL) analysis, found similar results to Brough and Pears (2004) that a supervisor's support was more important than a colleague's support. Social support from supervisors had a causal effect on most of the workplace stressors examined in the lower occupational level. This lower level of autonomy and high level of dependence of workers in this context may explain this finding. In contrast to the arguments in the job strain literature, the LISREL analysis revealed that affective strains (such as depression, anger, irritation) and worry reduce social support, not the other way round. It is suggested that those who are often depressed or tend to get angry easily may become burdensome to colleagues or supervisors. On the other hand, there could be a reduction in the rate social support is sought to help in dealing with strains so as to avoid being negatively evaluated by a supervisor. One of the limitations of the study was to disregard the mention of jobs under the lower or upper occupational category, which inhibits the generalisation of the results.

An earlier study by Winnubst et al. (1982) using a longitudinal Dutch sample found, like Marcelissen et al. (1988), that social support was negatively correlated with workplace stressors (job conflict, job ambiguity and future uncertainty about workplace), psychological strains (depression, anxiety) and several health problems. Focusing on the effect of social support on stressors, the correlation was stronger with a supervisor's support than co-workers' support, showing the importance of the source of support. A supervisor's support was also found to buffer the relationship between stressors and health problems as measured by blood pressure. Moreover,

one of the examined stressors (responsibility for others) revealed a positive correlation with social support. One of the limitations of this study is that advanced quantitative techniques may have been more adequate. As social support is important in the job satisfaction of employees, we will include managers' support in our framework.

As a result of the importance of social support on employees' health, Johnson and Hall (1988) introduced social support into the demand-control model because previous studies on employees' health (e.g. Marcelissen et al., 1988; Winnubst et al., 1982) had concentrated on the Michigan model. The Michigan model suggests social support and the behaviour of an individual as moderators of the demand (stressors)-strain relationship. Using data on Swedish employees, Johnson and Hall (1988) confirmed the predictions of the demand-control model and found that increasing levels of job demand were associated with increasing prevalence of CVD. They also found a low level of social support (from co-workers) to be associated with a high level of employees' strain. In the absence of job demand, low social support and low job control were both found to be associated with high prevalence rates of CVD. This implies that a low level of interpersonal relationships and a low level of decision latitude over work lead to poorer health.

Also supporting context-specificity in job stress literature, McClenahan et al. (2007) tested the main, additive and interaction effects of the demand-control-support model in a homogenous occupational sample (lecturers and senior lecturers at a UK university). Conducting hierarchical regression analyses on a sample of 121 lecturers and 45 senior lecturers, they found little support for the additive effects of demand, control and support and none for the two-way (demand-support) or the three-way (demand-control-support) interactions. Likewise, the active learning hypothesis of the demand-control model, that is, employees are motivated to learn as a result of job demand, was not supported. Job demand and social support had additive effects on job satisfaction, while job control was non-significant. Interestingly, authors included job insecurity in the model, which was found to predict job satisfaction, burnout and psychological distress. Karasek and Theorell (1990) also used job insecurity as a factor that influences the stressor-strain relationship and this will also be tested in our study. Some minor points of criticism: the study may not be generalisable to other universities in the UK or to other occupations. Various Universities and other occupations operate on different

policies and regulations and may not be similar to the policies and regulations of the UK University investigated in this study. Furthermore, self-reported measures may lead to biased results.

Examining a refined demand-control-support model in a more hazardous context, Janssen et al. (2001) focused on employees from three Dutch Construction firms. Their structural equation modelling showed that support from co-workers and supervisors were negatively related to burnout and health complaints, while physical job demand (such as carrying heavy loads) had a weak relation with burnout only. These findings imply that employees' burnout in the construction industry comes more from physical demand than from mental demand (like work pressure).

Still emphasising the effect of work characteristics on active learning, Bergman et al. (2012) tested the effects of job demand and job control on problem solving strategies using data on Swedish individuals. Problem solving includes 'time and energy', 'possible development', 'information seeking' and 'organise and plan. Data were collected twice with a three year time gap (1998-2000 and 2001-2003) so as to adequately account for the learning effects of working conditions over time. Their logistic estimations revealed that job control as measured by skill discretion and task authority was significantly associated with problem-solving strategies. On the other hand, job demand and problem-solving strategies were weakly associated; this may come from the variables being self-reported. The perceptions of job demand among employees in the same workplace may differ with individual characteristics; some may view job tasks as being challenging while others may view them as difficult.

Considering self-efficacy as a learning-related outcome, Taris et al. (2010) examined the relationship among self-efficacy, emotional exhaustion and job characteristics using data collected as part of a two-wave longitudinal survey on Dutch police officers. Their structural equation modelling analysis showed that job demand, unlike job control, was positively related to emotional exhaustion (strain). On the other hand, job control was found to be positively related to professional efficacy. It appears that job demand can lead to stress while job control matters for self-efficacy.

The empirical findings also revealed that emotional exhaustion prevented self-efficacy. Strained police officers may prefer to use the tried and tested ways of dealing with job demand rather than investing in new learning skills. Professional efficacy on the other hand reduced emotional exhaustion, which may mean police

officers tend to deal with job demand more effectively due their experience and this in turn reduces strain. Testing police officers' perception of tasks over time, the authors found that emotional exhaustion makes Dutch police officers perceive tasks to be demanding over time, while professional efficacy did not change their perception of tasks. An explanation for the result may be that self-efficacious police officers tend to take on challenging tasks and exert the same effort and control, which does not alter their perception. The usual points of criticism apply to this study: generalisability of the results and self-reported data.

Dollard et al. (2000) examined the significance of the demand-control-support model in a multi-occupational sample of human service workers. Their structural equation analysis also showed the main effects and additive effects of job demand, control and social support but not interaction effects. They additionally demonstrated the additive effects of job control and job demand with regards to the active learning hypothesis and concluded that high job demand and high level of control facilitated competency and personal accomplishment. Their findings revealed that job demand did not necessarily have negative effects on employees' wellbeing when combined with job control and the level of control mattered. In sum, the study recommended that in order to reduce stress and enhance productivity, a reduction in job demand was not the solution but redesigning the job by increasing the level of job control and social support was a solution. A limitation to their study is that the use of subjective measures of job characteristics and strain may have improved the interaction model.

Extending the study on the active learning hypothesis, Taris et al. (2003) partially confirmed the main effects of job demand and job control on learning. They conducted hierarchical regression analysis of a two-wave survey of 876 Dutch teachers. They found a positive lagged main effect of job control on learning motivation and personal accomplishment, while job demand had a negative relation and reduced employees' learning. The longitudinal aspect of the study did not appear to matter for the test of the development of learning across time. This study is also prone to the standard criticism of self-reports and generalisability.

Baillien et al. (2011) used similar two-wave longitudinal study data (with a 6-month time lag[42]) as Panatik et al. (2011) but investigated the role of job characteristics as

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[42] Data was collected in November 2007 and April 2008.

outlined in the demand-control model on the emergence of workplace bullying[43] with a focus on the targets and perpetrators of workplace bullying in Belgium. Regarding the target's perception of workplace bullying in time 2, the lagged moderated hierarchical regression analyses revealed direct negative effects of job control at time 1 and direct positive effects of job demand at time 1. Further, the interaction of both job characteristics at time 1 was not significant for being a target of bullying at time 2.

Noblet et al. (2006) analysed the job characteristics that are closely related to Organisational Citizenship Behaviours[44] (OCBs) and employees' wellbeing (measured by job satisfaction and psychological health). These OCBs are facilitated by the rate of employees' use of their personal initiative and how they perform tasks that are not formally defined by their supervisors or by their job descriptions. Using data collected on employees in a medium-sized public sector firm in Australia and conducting a two-step hierarchical regression analysis, the results showed how the relevance of job control, work and non-work support of the demand-control-support model mattered for OCBs, job satisfaction and psychological health. Although the demand-control-support interaction effects were not significant, job control and social support were found to contribute significantly to job satisfaction, OCBs and to a lesser extent, psychological wellbeing. The findings suggest that working conditions are important factors to consider when designing strategies to improve employees' wellbeing and to enhance citizenship behaviours. Study limits include the cross sectional aspect of the data and self-reported data.

Noblet and Rodwell (2009) examined the job characteristics that predict wellbeing, satisfaction and employee commitment using data from a state-based law enforcement agency in Australia that had undergone various extensive organisation-wide reforms consistent with the term New Public Management (NPM).[45] In sum, the authors utilised the demand-control-support model to reflect the sort of work conditions characterising a managerial public sector firm. Conducting multiple

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[43] Workplace bullying may be called harassment, emotional abuse in the workplace and mobbing.
[44] These behaviours are defined by the study as actions that are not formally required or rewarded but that contribute significantly to the success of the firm.
[45] This is a term that broadly defines a wave of public sector reforms so as to modernize the public sector. These reforms are characterised by flatter and more flexible organisational structures, performance-based and responsive HRM and emphasis on consumers' needs rather than on producers'.

regression analyses, they found that the components of the model were significantly associated with job satisfaction and psychological health (measures of employees' wellbeing) as well as employees' commitment to the organisation. They also found curvilinear relations[46] between job demand and workplace support. With social support and job control being closely linked to job satisfaction, psychological health and employees' commitment to the organisation, this implies they are important health-improving resources for public service employees.

 Regarding curvilinear effects, work-based social support was found to be associated with diminishing returns. Moreover, the authors suggested that regular consultation with employees to determine if the work-based support is strengthening commitment is required. The curvilinear effects of job demand on the other hand indicate that low and high levels of job demand can affect employees' wellbeing. High level of job demand was found to affect employees' health irrespective of the level of control, and low level of job demand was also found to negatively impact on employees' health and job satisfaction. This means that some level of job demand is required for employees' wellbeing. That is, managers have to consider the "dose-response effect" associated with each job characteristic. In sum, this study was able to provide support regarding the importance of job control and support from supervisors and colleagues in reducing the aversive effects of job demand associated with the NPM strategy. However, the study did not mention the multiple regression analyses utilised and this makes the appraisal of econometric techniques difficult. Also, the study was cross-sectional and this means the causal links could not be tested and the subjective data used may impact on the results.

Investigating the extent the demand-control model can be related to the increase in the rate of suicide that is said to be partly due to the job stress among Japanese workers, Kawada and Otsuka (2011) considered 371 male workers of a company (between 20 and 50 years old). The logistic regression analysis was able to provide support for the predictions of the demand-control-support model in that job dissatisfaction was related to lack of social support and low level of job control. However, this study was restricted to male employees.

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[46] The under- or over-supply of a particular job characteristic could be harmful to employees' wellbeing.

Investigating the major proposition of the demand-control model by considering the impact of job characteristics on employees' health, Karasek et al. (1981) analysed the relationship between job characteristics, Coronary Heart Disease (CHD) and related mortality rate. They utilised data collected on employed male workers from the Swedish National Level of Living Surveys. The multivariate logistic regression revealed that a job with intense psychological demands is associated with the risk of having the signs and symptoms of CHD and premature death. In addition, the significance of the decision latitude of employees conceptualised as intellectual discretion and autonomy was investigated.

Controlling for individual characteristics, low intellectual discretion was found to be associated with the signs and symptoms of CHD. Also, lack of autonomy among workers with the minimum educational requirement was associated with increased probability of premature death. This study contributes to the literature on work reorganisation so as to reduce /prevent job dissatisfaction, illness and subsequently untimely death. However, there are some minor points of criticism. The study is restricted as it focused on employed male workers. Also, despite the fact that there was no mention of the type of job, the sector of the economy or industry, it may be argued that workers in highly demanding jobs will have affected the result.

Taking the analysis of the demand-control model a step further, Grönlund (2007) examined the relationship between job characteristics and work-to-family conflict. They suggested that balancing work and family life[47] were potential sources of stress. The multivariate linear regression analysis of the Swedish data revealed that job demand increases work-to-family conflict while job control reduces it. This implies that the demand at work may impair family life. However, the findings also revealed that the magnitude of control does not have any impact on the high level of job demand as job demand also affects the balance between work and family life. Thus, the buffering effect of control was not supported. Also, by controlling for gender, similar results were found among men and women but a more detailed analysis of female employees revealed that having a very high level of job control reduces work-to-family conflict.

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[47] The family life can also be viewed as another component of overall wellbeing and implies that wellbeing in the job may have an influence on other components of the overall wellbeing of an individual, thus making the study of on-the-job wellbeing very important.

Comparing jobs, Grönlund (2007) found that women and men in active jobs who experience the same working conditions and family situations experience the same work-to-family conflict. However, in high strain jobs, there is a significant gender difference in balancing work and family life. A more flexible approach to measuring the components of this study as well as the inclusion of social support might produce more significant and adequate results. On a lighter note, the study revealed that not only should working time be considered when analysing gender and family policy but also the issue of improving the work environment should be assessed.

Extending Karasek's model to the work-family interface, Butler et al. (2005) explored the effects of job demand and job control on work-family conflict and how engagement in the workplace makes participation at home easier. Conducting multi-level analysis on forty-six couples in the US, Butler et al. (2005) suggested that daily variation in job demand and job control caused daily variation in work-family conflict and work-family facilitation. Job control was found to be associated with reduced work-family conflict while more job demand was found to be highly associated with work-family conflict. The level of skill was not found to be significant. Also, job control was found to amplify the effect of job demand and work-family conflict rather than attenuate it. Thus, active jobs are likely to be detrimental to work-family balance.

Westerlund et al. (2010) found that Attentive Managerial Leadership (supportive leadership) explains employee-reported stress. Using data collected on Finnish, German and Swedish employees in the forestry industry and conducting stepwise logistic regression analyses, they found that, even after controlling for job demand, job control and social support, less considerate managerial leadership was associated with high levels of stress in the three countries for both white- and blue-collar employees, and negative managerial behaviours were more prevalent towards blue-collar employees.

German employees reported the highest levels of stress and Finnish employees, the lowest. This cross sectional study pointed out the impact of supportive managerial leadership on employees' wellbeing. From the findings, it may be suggested that Attentive Managerial Leadership that is conceptually close to social support or supportive management needs to be more geared towards blue-collar employees in

the forestry industry based on the countries examined. This category of workers who go through the ordeal of the job should be given more support from the management.

With the inconclusive findings in the literature regarding the demand-control interaction model, Beehr et al. (2001) stated that researchers have to go back to the basics[48] and re-examine the conceptualisation of job demand and control. They explained that most studies either tended to ignore the test for the buffering effect of job control on the job demand-strain relationship or argued that the additive effects of demand and control were sufficient evidence for the theory. With the extension of the outcome variable to include turnover intent and job satisfaction, job demand was shown to be negatively and positively associated with job satisfaction and turnover intent respectively. These findings also revealed that psychological strain and job (dis)satisfaction cannot be used interchangeably when analysing job strain because demand tends to have different effects on each of the terms. Considering methodological issues, data were self-reported and cross sectional.

In view of comparing the demand-control-support model that included learning opportunities with the classical demand-control-support model, Mikkelsen et al. (1999) examined the impact of learning opportunities on employees in the Norwegian Postal Service. The hierarchical regression analysis revealed that demand, control and social support were all associated with most of the health indicators: job stress, anxiety and subjective health problems like muscle pain, colds, gastrointestinal problems and 'pseudo neurological' problems, and organisational outcomes: job satisfaction and commitment. Furthermore, when including learning opportunities in the model, decision authority was found to be unrelated to any of the subjective health measures, learning opportunities significantly impacted all the dependent variables considered and social support significantly impacted all the indicators of health.

Also, no significant two-way interaction effect between decision authority and learning opportunities was found. With the non-significance of the interaction between decision authority and learning opportunities, it means these two workplace practices should be considered as independent instruments in work restructuring. Also, the non-significance of the results may be due to the sample of employees

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[48] The term 'back to basics' refers to: using the original constructs of the model, focusing on psychological strain as the dependent variable and testing job control.

used, which consisted of clerks and operators. Moreover, the fact that the data were self-reports may have had an effect on the findings. These categories of employees have similar high demand but little control over their jobs. In sum, the study was able to show that the broader formulation of decision latitude to include learning opportunities is significant in explaining the health situations of employees as well as organisational outcomes.

Relying on previous findings about the relationship between the job demand-control-support model, stress and learning, Kwakman (2001) investigated how the model predicts the effect of stress on teachers' learning. He restricted the analysis to the main effects of demand, control and social support. Using data collected on Dutch teachers in secondary education and estimating simultaneous equations, the study confirmed that the presence of a high level of job demand and a high level of job control was associated with a lower level of job stress and a higher frequency of engaging in work-based learning. Additionally, the demand-control model was shown to explain stress better than work-based learning activities.

Social support from co-workers was significantly associated with stress as well as work-based learning. Identifying different types of job demand, control and social support was shown to be important as it was easy to identify the type of social support that had a significant effect. Moreover, the level of job control was shown to be significant when teachers were faced with a high level of quantitative and emotional demand. Additionally, the controls for other job characteristics might have improved the results.

Exploring the learning dimension of Karasek's model, Paulsson et al. (2005) examined learning at work by conceptualising the components of this model differently. As a result of rapid workplace changes in the past decade due to globalised competition and rapid technological changes, the authors conceptualised job control as employees' control over the learning process and job demand as the demand for new workplace skills and competencies so as to be able to deal and cope with rapid workplace changes respectively. Using data collected on employees in three Swedish firms, the correlation matrix revealed that when employees have increased control over the learning process, their competence and skill development tended to improve, work becomes simplified and stress is reduced. Similarly, demand for new skills was associated with increased stress while competence

development was stimulated. The study further revealed that learning is mainly achieved through colleagues and organisational courses and learning through external courses tended to stimulate competence development while learning through colleagues as well as supervisors tended to reduce the burden of work. It is important to note that the study was undertaken on a small sample, and this may have affected the results.

Considering legal professions, that are sometimes tagged as 'greedy' because they are associated with excessive work demand and long hours, Wallace (2005) sought to examine the effects of time demand on married lawyers' wellbeing and potential spill over effects on family life. The study focused on time demand such as work overload, office hours, and working hours at home. They hypothesized that the presence of control over working hours will buffer the negative effects of job demand. With the sample consisting of practicing lawyers in Alberta, the regression analysis revealed that job demand was positively related to depression and work-to-family conflict. Also, control over working hours was found to have a direct negative effect on wellbeing. However, the use of more time-based job control did not buffer the negative effect of job demand as the interaction between time-based demand and time-based control was not significant.

In Wallace's (2005) analysis of the influence of social support from four different sources: co-worker, organisation, spouse's emotion and spouse's support of career, the author found that spouse's support of career was the most important form of social support that directly reduces depression and work-family conflict. Further, emotional support from spouse was found to reduce depression but increase work-family conflict. This study showed the additive effects of control and the moderating effects of social support and suggested that coping strategies are different in the context of married lawyers. The same limits applied to the study as data were cross sectional and self-reported.

In line with the studies by Van Yperen and Snijders (2000) and De Jonge et al. (1999), Morrison et al. (2003) contended that job should be considered along with the employee as the unit of analysis when analysing the demand-control and/or – support models. They posited that because Karasek's model is about the impact of job characteristics and analysis based only on individuals' perception of the job, this may result in inadequate results. Multi-level analyses that allow for the comparison

of results obtained at each unit of analysis are appropriate for this. Morrison et al. (2003) carried out an analysis of employees of Hospital Trusts in Britain and provided support for the additive effects of demand, control and support on strain and job satisfaction when individual-level measures were used, while little support was provided when workplace-level variables were used. The small significance of job-level variables may be as a result of the nature of the dependent variables. Individual-level variables such as personality and ability are better predictors of psychological strain and job satisfaction.

As a result of current changes such as restructuring, deregulation and rapid exposure to the competitive labour market, the requirements for the ability to analyse and solve problems as well as to make decisions in unexpected situations have been on the rise. In line with these changes, employees face different components of job demand and job control. Mikkelsen et al. (2005) evaluated Karasek's model by using various dimensions of job demand, job control as well as social support. Using a survey on employees in thirteen Norwegian electric companies and conducting covariance structural modelling, the use of these broader formulations improved the explained variance of job stress, job satisfaction and subjective health complaints. While quantitative and emotional job demands were found to be better predictors of job stress, health complaints and job satisfaction; cognitive, emotional and sensorial job demands were better predictors of mastery. Emotional job demand that is evident in human services professions was found to be a good predictor of job stress and this supported the literature on burnout where job demand was linked to emotional exhaustion. The correlation results show that cognitive learning demand was correlated with high skill discretion and quantitative demand (workload) with job stress.

Peeters and Rutte (2005) sought to examine the moderating effect of time management on the demand-control relationship. They did this by examining the job demand-control model in the context of emotional exhaustion and personal accomplishment among elementary teachers in the Netherlands. The hierarchical regression analysis revealed significant relationships between job demand and emotional exhaustion as well as autonomy and personal accomplishment. Support is provided for the literature on burnout among human service workers as job demand, especially emotional demand that results from intense and frequent contact with

people, has been suggested to be related to emotional exhaustion.[49] Also, findings on personal accomplishment confirm previous studies as employees who have the autonomy to plan and schedule their tasks according to their circumstances tend to have a personal feeling of accomplishment.

Still on burnout associated with the profession of teaching, Näring et al. (2006) analysed the demand-control-support model by examining three dimensions of burnout: emotional exhaustion, depersonalisation and personal accomplishment. The hierarchical regression analysis of the data collected on Dutch mathematics teachers in secondary schools suggested that quantitative demand, job control and social support were significantly related to emotional exhaustion, while only job control and social support were associated with depersonalisation.

In line with the studies by McClenahan et al. (2007) and Näring et al. (2006) that examine stress in academic life, Chambel and Curral (2005) analysed the job demand-control-support model in the context of undergraduate students from three programmes at a large Portuguese university. The hierarchical regression analysis revealed the significant main effects of work demand, work control and social support on students' satisfaction with academic life and levels of anxiety and depression. That is, work demand was positively and negatively associated with anxiety and satisfaction respectively, while work control and social support were positively and negatively associated with satisfaction and anxiety respectively.

Exploring employees' attitudinal outcomes in the context of the carers of mentally disabled people in the Netherlands, Akerboom and Maes (2006) provided support for the main effects of job demand, job control and social support from co-workers and supervisors. Job demand and decision latitude were found to be major predictors of emotional exhaustion and job satisfaction, while skill discretion and co-worker support were predictors of job satisfaction only. Further, supervisor support was only associated with psychological distress. These findings showed the importance of specifying the types of job demand, control and social support. The sample was homogenous in the consideration of profession, age and gender, thereby restricting the study.

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[49] This is the feeling of being emotionally overextended and drained of one's emotional resources.

Despite the presence of ergonomic improvements in the workplace, studies have suggested the presence of work-related musculoskeletal problems in the industrialised world (Karasek et al., 1981). Seeking to explore the causes of such problems among female employees in the Swedish human services sector, Larsman and Hanse (2009) conducted a two-wave longitudinal study that was theoretically grounded in the demand-control-support model. Conducting bivariate logistic regression analyses, Larsman and Hanse (2009) were able to provide support for the main effects of job characteristics as hypothesised in the model. Job demand, decision latitude and social support were found to be related to musculoskeletal symptoms in at least one of the body regions considered (neck, lower back and shoulder).

Conducting a similar study in the Swiss context, Canjuga et al. (2010) used data on a representative sample of a working population from the fourth wave of the European Working Conditions Survey. Using binary logistic estimations, they showed significant effects of physical and psychological job demands on neck and back pain with physical demand having more pronounced effects. The association of physical demand such as lifting items was expected as this type of demand may have more effect on back and neck pains than on emotional exhaustion.

In an earlier study, Choobineh et al. (2009) through multiple logistic regression analyses showed that reports of extended seating time with a static posture as well as manual handling of employees in the Iranian petrochemical industry were associated with musculoskeletal symptoms in different parts of the body. Also, psychological job demands such as conflicts at work and disruptions made by others at work were also found to be associated with musculoskeletal problems. It might suffice to say that perceived psychological job demand partly necessitates physical job demand. This may be the reason for the relationship between perceived psychological job demand and musculoskeletal symptoms. Additionally, any disruption at work facilitated delay of work and the need to spend longer hours at work, potentially resulting in musculoskeletal symptoms.

As a result of challenges regarding patients' safety and in particular medical errors, Parhizi et al. (2013) sought to consider the association between job characteristics (demand, control and social support) and fatigue among registered nurses in the United States. They considered fatigue as the outcome variable because it influences

changes in employees' wellbeing, satisfaction and performance. The correlation results revealed that skill discretion, decision latitude, co-worker support and supervisor support were all negatively related to all the dimensions of fatigue while psychological job demand was positively related to all the dimensions of fatigue considered. The study was able to provide policy recommendations on how the aversive effects of fatigue can be mitigated among nurses in the US. A minor point of criticism of the study was the sole consideration of nurses' reported data and the absence of data from the management's perspective.

Advancing the stress literature to include job stress as perceived in knowledge-intensive firms, Wallgren and Hanse (2007) explored 'motivators' as mediators of the job characteristics – stress relationship. The authors considered Information Technology (IT) consultants because their jobs are intellectually demanding. Conducting structural equation modelling on data collected on frontline IT consultants, the authors showed that job demand was positively related to stress while job control was non-significant.

Extending the job design literature, Sainfort (1991) considered the relationship between job demand and control and stress outcomes among 170 clerical workers and professionals in a public service organisation. Although not theoretically grounded in the demand-control model, the author considered job control[50] as the most crucial determinant of stress outcomes and suggested that the effects of all other job characteristics such as job demand, job content and career concerns on stress outcomes only occurred through job control. However, the regression analyses showed inconsistent job control relationships. Control over tasks was found to be positively associated with mood disturbances while job demand and career concerns were consistently related to stress independently of job control. That is, job control was not found to be a mediator of the demand or career concerns – stress relationships. These findings suggest the importance of distinguishing between the two types of control as both relate differently to stress outcomes.

Conducting structural equation modelling, Pisarski et al. (2008) provided empirical support for the effects of social support and job control on work-life conflict and the health of nurses at a large Australian hospital. Expanding the 'job control' concept

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[50] This study distinguished between instrumental control that is task-focused and conceptual control that is decision latitude.

to include task autonomy and control over workload, the study suggested that perceived control over the job was positively related to nurses' psychological wellbeing. Similarly, social support from supervisors and colleagues in conjunction with health and safety related management support was found to aid garage workers' compliance with health and safety routines (Torp and Grøgaard, 2009). In summary, it might suffice to say that apart from social support influencing economic factors such as absenteeism, productivity, performance and job satisfaction, this factor also ensures the cooperative attitude of workers.

4.4   The Buffering Effects of Job Control on Job Demand (Two-way Interaction Effect)

The findings on the synergistic effect of job demand and job control have been mixed and confusing. Some studies have been able to provide significant findings while some studies have only been able to provide support for additive effects (for example, Tucker et al., 2008; McClenahan et al., 2007; Grönlund, 2007). In line with studies finding support for the main effects of job demand and job control, some go to the extent of explaining the evidence on the main effects as evidence of job control acting as a buffering mechanism. Studies like that of Beehr et al. (2001) even went back to the basics and used the original constructs of job demand and job control as outlined by Karasek (1979) but the buffer hypothesis was not supported.

The study by Van Yperen and Snijders (2000) confirmed the propositions of the demand-control model as shown in Wood (2008) but using different data. The sample that was drawn from white-collar employees of a national bank in the Netherlands explored the way employees were nested within workgroups[51] in an organisation. The multi-level analysis revealed the occurrence of negative health outcomes (sick days) when perceived job demand exceeded perceived level of control. The increase in the number of sick days was suggested to be due to the combination of employees' own evaluation of job demand when compared with colleagues in the same working group, and the workgroup's evaluation of job control being low. In other words, it can be suggested that the employees' assessment of the work environment is related to employees' wellbeing. Despite the fact that the study was able to show job demand and job control as having both individual- and group-level foundations, there are some limitations associated with

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[51] A workgroup consists of employees who have the same roles, job demands and responsibilities as well as reporting to the same supervisor.

the study. We will carry out an analysis similar to that used by Van Yperen and Snijders (2000) but utilise a refined version of the demand-control model, which includes supportive management and EO policies. Also, we will consider how employees are nested within workplaces and not within workgroups in an organisation. Furthermore, the underlined limitations of most studies with regards to generalisation will be avoided in our analysis as our dataset is a representative sample of British workplaces.

Providing support for the significant buffering effect of job control and also testing the demand-control model by using both group- and individual-level indicators of job characteristics was the study carried out by De Jonge et al. (1999). Conducting multi-level analysis on a random sample of 8 hospitals and 8 nursing homes drawn from Dutch hospitals and nursing homes[52], they found support for the interaction effect hypothesis between job demand and job control. With one of the interaction effects found at the group level, it confirmed the position of the demand-control model as a 'situation-centred model'. This is a model that emphasises the fact that the work environment predicts job-related strain. Further, the findings showed that group-level variables measuring job demand and job control were better predictors of attitudinal outcomes (job satisfaction and work motivation) than individual-level variables. Thus, the study suggested a redesign of working conditions when intending to improve job satisfaction and motivation.

Apart from the additive effects, De Witte et al. (2007) also examined the interaction effect of job demand and control. The findings revealed that job control as measured by autonomy served as a buffering mechanism for the relation between workload and job dissatisfaction. The clear evidence of this interaction effect that has been inconclusive may be associated with the specificity of the dataset as the employees who were examined had no job experience. With data collected on employees from four British manufacturing companies, Wall et al. (1996) suggested the use of more specific/focused and descriptive measures of job demand and job control. Conducting multivariate moderated regression analysis, they found job demand explained more than ten per cent of the variance in depression for those with low job control and less than one per cent for those reporting high levels of job control.

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[52] The dataset took the form of a three-level nested structured dataset.

Using a homogenous sample of Dutch nurses from eighteen intensive care units, de Rijk et al. (1998) not only replicated the study of Wall et al. (1996) with burnout[53] being the dependent variable, but also investigated the moderating role of individual characteristics[54] (active coping and need for control) on the explanatory power of the demand-control model. Despite the fact that more descriptive and focused measures of job demand and job control were used respectively, the hierarchical regression analysis did not confirm the two-way interaction effect. No significant effect was found for including 'need for control' in the model. However, with the inclusion of active coping strategies as a moderator, a significant interaction effect was found. That is, for employees with active coping strategies/ attitudes, high levels of control tended to attenuate emotional burnout as a result of job demand. On the other hand, high levels of control tended to enhance emotional burnout due to job demand in the case of nurses with low active coping. In a way this result added to the literature on the interaction effect of demand and control by showing the importance of controlling for individual-difference factors. This study lent more support to the arguments in the literature on the importance of including variables measuring individual differences in studies on the demand-control model.

Also corroborating the evidence on the buffering effect of job control, the 11-year follow -up study used in Dalgard et al. (2009) also suggested policy implications for firms in the Norwegian regions. They examined the fact that the two-way interaction effect as the combination of low control and high demand that causes psychological stress might affect employees' perception of the workplace over time.

Examining the interaction effect of job demand and job control on being a target and perpetrator of workplace bullying in Belgian workplaces, Baillien et al. (2011) conducted a two-wave longitudinal study. They carried out this study because the literature suggested longitudinal studies on the demand-control model with short time lags so as to gain an understanding of the shorter term consequences of job characteristics (demand and control).This study considered workplace bullying as a type of behavioural outcome as it was also associated with strain. From the target's

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[53] Burnout was considered to be quite accurate because intensive care nurses are associated with a high level of workload that they must react to with ultimate urgency. Thus, with little control over the job, exhaustion may occur as a result of prolonged stress.

[54] These characteristics have been regarded as important variables to be included in analyses examining the impact of the demand-control-support model on psychological strain, job satisfaction and workplace stressors (Panatik et al., 2011; Mulki et al., 2008 and Roelen et al., 2009).

(the person being bullied) perspective, workplace bullying occurs when poor job characteristics lead the employee to feel insecure. This insecure attitude in turn results in the adoption of negative work attitudes and this may facilitate negative reactions by colleagues, personal conflicts and ultimately turn him/her into a target of bullying. From the perpetrator's perspective, bullying can occur through the transfer of aggression to co-workers as a result of poor job characteristics.

Baillien et al. (2011) found a significant interaction effect of demand and control when a perpetrator's report of workplace bullying was considered but not for target's report. The interaction of the job demand and control at time 1 was significant in relation to being a perpetrator at time 2. That is, high strain jobs[55] at time 1 are associated with becoming a perpetrator at time 2. This can be explained in the sense that when employees have a high level of job demand with a low level of control, they are likely to transfer aggression to their colleagues. With the 6-month time lag used, the findings revealed that the joint presence of job control and demand can facilitate workplace bullying in the short term. However, with the self-reported data by employees and the dominance of white collar workers in the survey, this study may not be representative enough of workplace behavioural outcomes and the Belgian working population.

Considering the hypotheses of the demand-control and demand-control-support models, Van Yperen and Hagedoorn (2003) sought to examine the types of job demand and control that minimise job strain and maximise intrinsic motivation to engage in learning activities. Conducting hierarchical regression analyses on the data collected on nurses dealing with patients with a mental deficiency, they confirmed the buffering effect of job control on the negative effects of job demand.

In addition to the main effects of demand, control and social support, Mikkelsen et al. (2005) showed the moderating effects of some types of job control and social support. Considering the type of job demand, the study showed that neither job control nor social support moderated the relationship between quantitative demand and job stress. Moreover, skill discretion was shown to buffer the negative effects of emotional demand on employees' health. These findings showed that distinction between different types of job demand and job control is important for interaction

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[55] They are jobs that are characterised by high workload and low level of control.

effects. However, this study used measures of demand whose terminologies were quite similar to the measures of control, thereby resulting in difficult interpretations.

Examining the demand-control model, Peeters and Rutte (2005) provided empirical support for the two-way interaction effect. They found that irrespective of teachers' time management behaviour, autonomy buffered the negative consequences of job demand on teachers' emotional exhaustion and depersonalisation. The study by Chambel and Curral (2005) only revealed support for the buffering effect of job control (the three-way interaction effect was not significant) as job control was found to moderate the negative effects of job demand on students' satisfaction with academic life.

Apart from providing support for the main effects, Larsman and Hanse (2009) also suggested that the presence of both a high level of job demand and a low level of decision latitude resulted in increased risk of developing shoulder and lower back musculoskeletal symptoms irrespective of the level of social support available to employees. Canjuga et al.'s (2010) study that was similar to Larsman and Hanse (2009) did not support the strain hypothesis or the three-way interaction effect. This non-significance may be due to the specification of the model; that is, not including adequate control variables. Again, data self-reported by individuals could be called into question and data collected from management could be more objective to represent the situation in the firm. Furthermore, the restriction of the sample to only nationals who speak the national language fluently is not representative of the workplace as there may be foreign employees.

4.5   The Buffering Effects of Social Support on Job Demand (Two-way Interaction Effect)

The findings on the moderating effect of social support on job demand/workplace stressors have also been mixed. For instance, the study by Beehr et al. (2000) and Brough and Pears (2004) revealed the non-significant moderating effects of social support despite using more specific measures. However, an earlier study by Beehr et al. (1990) that examined three different contents of workplace communication as measures of support from supervisors, provided evidence of the moderating effect of having supportive supervisors on workplace stressors. The findings revealed that non-work related conversations between employees and supervisors moderated the negative effects of workplace stressors on employees' wellbeing. In sum, Beehr et al.

(1990) found that support from supervisors or managers, who are more experienced in dealing with work-related issues, was more helpful than a co-worker's support. One minor point of criticism about this study is that job satisfaction as well as other strain measures were investigated but there was no discussion about the job satisfaction measures. A possible explanation may be that all the outcome variables were classified as measures of employees' strain that should technically not be so. Depression or exhaustion, which is concerned with psychological health is different from dissatisfaction with the job.

As a result of the policies of NPM that tend to overlap with the sort of reforms associated with the promotion of a participatory work environment, Noblet and Rodell (2009) found the demand-control-support model to be able to provide an accurate description of the channels through which NPM strategies and policies impact on job strain. In addition to confirming the additive effects of the components of the model, the interaction of job demand and social support was significant for the two- and three-way interaction effects. This finding implies that social support is considered as an important psychosocial resource, which moderates the negative effects of job demand.

In Wallace's (2005) study on married lawyers, the author found that co-workers' support was only significant as a moderator of the negative consequences of job demand on wellbeing and not for the main effects. This implies that those studies that do not test the moderating relationships may be drawing inaccurate conclusions. Further on the moderating effects of social support, Wallace (2005) found that the moderating effects of social support vary for different types of job demand. Co-worker support was found to buffer work overload while it exacerbates hours at work (another measure of job demand). This highlights the importance of specifying the types of job demand and social support mechanisms and examining their individual effects rather than combining them into one global measure. A possible explanation for the direction of effect of a co-worker's support on hours of work may be the case where an employee faced with such job demand seeks support from a co-worker faced with the same job demand. In such a case, they are more likely to transfer the stress to each other, thus exacerbating the negative effects of such demand.

Exploring mediating relationships, Pisarski et al. (2008) found that the interaction between social support and job control reduced work-life conflict and in turn improved the physical and psychological health of nurses. That is, the presence of instrumental support from supervisors as well as support from colleagues resulted in nurses reporting a higher level of control over their work and this in turn improved the nurses' wellbeing. This finding in a way supports the prediction of the demand-control-support model, although the model was not used.

4.6   The Learning Hypothesis

The findings on the learning hypothesis have been inconclusive as most studies have only been able to provide support for the additive effects of job demand and control on learning (McClenahan et al., 2007; Ouweneel et al., 2008). This hypothesis has been associated with confusing interpretations. It should however be noted that this hypothesis deals with the interaction effects and not the additive or main effects. Only a few studies have found significant evidence for the learning hypothesis, that is, the interaction of a high level of control and demand. For instance, De Witte et al. (2007) not only corroborated the findings of Weststar (2009) on additive effects but also examined the joint effect of demand and control on learning. The interaction effect model revealed that employees with high levels of control and demand tend to acquire more skills. The interaction effect was stated to exceed the additive effect. This implied that the availability of control increased the potential to engage in learning when an employee is faced with high job demand. The corroboration of Karasek's hypotheses by this study provides ways to ameliorate jobs but this study is quite restricted as a result of specific characteristics (first job, young workers and age group) of the sample used. In addition, the dependent variables were single-item measured. Further, the decision latitude emphasised by the demand-control model should include the decision authority and autonomy available to employees and not only autonomy as measured in the study.

Also, Bergman et al. (2012) provide support for the learning hypothesis of the demand-control model. The findings of their study revealed that the joint presence of high demand and high job control is associated with the likelihood of individuals engaging in all four problem solving strategies. Thus, this study supports the proposition in the literature that control is essential for learning to take place.

4.7 The Three-way Interaction Effect (joint presence of job control, job demand and social support)

Reviewing the three-way interaction effect, the literature showed very little support for these effects considering the vast studies on the demand-control-support model. Most studies only found support for the main effects and this resulted in some studies concentrating on exploring the main effects whilst ignoring the interaction effects proposed by the model. By main effects, we mean the individual effects of these job characterisitics. For example, Ouweneel et al. (2008), Noblet et al. (2006), Canjuga et al. (2010) and McClenahan et al. (2007) reported the non-significant interaction effect of job demand, job control and social support. On the other hand, providing support for the use of multi-level analysis, Bliese and Castro (2000) imposed a little twist in their study by examining the impact of work clarity (in place of control) and support from non-commissioned officers[56] on the job demand-strain relationship. They utilised a homogenous sample of lower enlisted male soldiers, similar to the sample used by Tucker et al. (2008). The step-by-step multi-level analysis confirmed their assumption as role clarity was found to ameliorate (or buffer) the negative effects of high job demand on psychological strain but only in the case where officers were supported. Thus, it might suffice to say that both role clarity and job control have theoretical and conceptual similarities as they both enhance effective performance. Also, the study not only showed the importance of social support in the demand-strain relationship but also emphasised the importance of contextual (group/firm-level) factors that are more objective than individual-level factors.

Considering interaction effects, Janssen et al. (2001) were able to provide empirical evidence suggesting that social support to an extent determined the buffering effect of job control on the job demand-burnout relationship. Employees with high levels of social support and low levels of control tended to report an increase in burnout when physical demand increased (the same findings for low support and high control), while those with high levels of social support and high levels of control tended to report no increase in burnout when physical demand increased (the same result for low support and control). An explanation for the low support-high control scenario may be that with little or no social support, highly autonomous employees are left to do their jobs and this may enhance stress. The study showed that

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[56] This type of social support was treated as a group variable that varied across the 53 firms

employees in the construction industry benefit substantially from social support but could not make causal inferences as a cross sectional study.

With the inconclusiveness about the interaction effect of demand, control and social support, Mikkelsen et al. (1999) considered learning opportunities as a replacement for social support. The hierarchical regression analysis revealed a significant three-way interaction effect (demand-control-learning opportunities) with measures of subjective health. This implies that in the presence of a high level of demand and a low level of job control, the availability of learning opportunities moderates the negative effects on employees' health.

Testing the interaction effect of demand, control and social support on intrinsic motivation among nurses, Van Yperen and Hagedoorn (2003) found that in the presence of increasing job demand, job control only improved intrinsic motivation when social support is low. Further, increasing instrumental social support was found to be the most effective means of enhancing intrinsic motivation irrespective of the level of job demand and control. Thus, the specificity of the type of social support contributed to theory as the study showed that support with job tasks was more important for the category of nurses examined. Also, the findings showed that an organisational redesign should include autonomy measures so that nurses could effectively manage increasing job demands associated with such a design, thus, enhancing intrinsic motivation in the process.

Considering the moderating effect of the time management behaviour of elementary teachers in the Netherlands on the demand-control model, Peeters and Rutte (2005) confirmed the three-way interaction effect. They found that in the presence of low autonomy, if teachers engaged in time management, they tended to be less emotionally exhausted than those who did not engage in time management activities when work demand was high. Thus, time management behaviour was suggested to be a moderator when autonomy was low. However, this behaviour as a moderator was not significant for personal accomplishment as work demand was less predictive of personal accomplishments. This finding on time management behaviour being a moderator instead of social support showed the fact that these elementary teachers were not prone to influences at work in order to avoid burnout; burnout measured as emotional exhaustion and depersonalisation. That is,

elementary teachers could reduce the risk of burnout by managing their time through setting and prioritising goals, planning actions and monitoring their progress.

The three-way interaction effect was not supported in the study carried out by Chambel and Curral (2005). However, by examining the mediating effect of satisfaction with academic life on the work characteristics-student performance link, they found a positive effect of work control on performance that disappeared when satisfaction was accounted for. The non-significance of the demand-control-support model may be as a result of the measures used in the study. The measures were based on a workplace survey and this might have excluded some features pertaining to an academic context. Nevertheless, this study provided support in a way for the work design models as they emphasise the relationship between work characteristics, job satisfaction and performance.

Extending the studies on the Human Services industry, Akerboom and Maes (2006) showed the demand-control-support interaction effect. They found high levels of skill discretion and supervisor support to be moderators of the negative effects of high level of demand (psychological stress). An implication of this result is that the specificity of the dimensions of job demand, job control and social support were very important to uncover the types of job demand, control and social support moderating the job demand-employee outcome relationship.

The three-way (demand-control-support) interaction effect examined in the study by Larsman and Hanse (2009) was only confirmed for one of the outcome variables (neck symptoms). That is, a high level of social support was found to buffer the negative consequences of a high level of demand on neck problems in the firm when the decision latitude level was low. However, the combination of high demand and a high level of decision latitude along with a low level of social support was found to be associated with increased risk of shoulder and lower back problems. A recommendation may be that the availability of decision latitude is limited because too much of it can cause stress. Also, with social support being high and job demand and control being low, the risk of developing neck problems increased. These findings may be as a result of the type of sample used as it was a job that entailed having contact with individuals almost every time. This type of profession has also been found to be associated with burnout.

4.8　Non-Western Perspectives and Cross-country Studies on the Job Demand-Control and Job Demand-Control-Support Models

With job demand and job control having varied meanings among individuals in different cultural contexts, the analyses of these models in different contexts provide advancements in this literature as well as providing validity of these models across diversed contexts. Most of the studies have been representative of Western settings and only a few have been carried out in non-Western contexts.

Taking the above expositions into account and examining highly demanding situations like the studies carried out on the French fire fighters and US soldiers, Mohan et al. (2008) considered the rate of prevalence of job strain among male shop floor foundry workers in India. Manufacturing processes that entail foundry activities such as melting, fettling, moulding and core and pattern making were considered as sources of high job strain due to the hazardous activities that take place. Conducting basic statistics on the survey constructed with the help of Karasek's Job Content Questionnaire, the prevalence of job strain among the workers was found to be 25 per cent.

Also, lack of job control and the prevailing hazardous work conditions in the case of the melting and moulding workers were found to be the main determinants of job strain. The lack of control may be due to their occupational category because decisions were only made by the management. High job strain was evident among workers between the ages of 31 and 45 years, possibly because they were restricted to make decisions about their job. In sum, the authors provided policy recommendations for the firm in that if more care and attention were given to the workers in the melting and moulding sections and employees were given more control over their job, job strain was suggested to be reduced. However, more attention to the melting and moulding sections might breed conflict as it might be seen as differential treatment. Also, the contextual basis as well as the non-inclusion of females in the study may have affected the results.

Advancing the study on the stress associated with nurses, Baba et al. (2009) investigated the rate the demand-control-support model predicted stress among nurses in four different contexts (China, Japan, Argentina and the Caribbean) and also tested if cross-cultural differences had any effects on the results. With the data collected on nurses in these countries (composed mainly of females) and the hierarchical moderated regression analysis employed, the findings revealed that job

demand, job control and social support were major predictors of stress among nurses in the countries examined. However, their rate of prediction varied in different contexts. Focusing on the main effects, job demand and supervisory support predicted stress in all the countries, while the effect of job control varied across countries.

The moderating effect of job control on job demand was only significant in Japan, and this only occurred at low and moderate levels of job demand, while the interaction effect of supervisory support and job control on job stress disappeared below a certain threshold of job control for China. However, the extension of the buffer hypothesis to include social support was significant in all countries except the Caribbean. The combination of high demand, low job control and low supervisory support causing strain (the iso-strain hypothesis) was only significant in Argentina. The three-way interaction effect of the model revealed a threshold effect. In China, Japan and Argentina, the presence of low job control and high supervisory support was only effective when job demand was below a certain threshold. This implied that the demand-control-support model was robust until the threshold effect became evident. These findings revealed that country differences played a significant roles in the results produced, as what is effective in a particular country might not work in another. Also, the analysis revealed that there was an extent to the moderating effect of job control and supervisory support on the negative effects of job demand.

In a longitudinal cross-national study that was based on 542 administrative employees from Belgium, England, Spain, Italy and Israel, Rodriguez et al. (2001) using a moderated hierarchical regression analysis were able to show that employees with high social support, high job control and internal locus of control tended to be satisfied with the job. That is, a significant additive effect was found with respect to job demand, job control, social support and locus of control.

Testing an extended version of the demand-control model, which included social support and locus of control[57], Rodriguez et al. (2001) found no significant interaction effects for the demand-control-social support and job demand-job control-internal locus of control interaction; although the findings revealed the expected main effects. Conversely, the authors found significant three-way

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[57] Locus of control could be internal (personal control) or external (control depending on external forces).

interaction effects but in another dimension. Too much job control – perceived job control and internal locus of control – in jobs with a high level of social support and a high level of job demand was found to be associated with job dissatisfaction, which is contrary to the prediction of the job demand-control-support model. The study was associated with some limitations in the sense that only administrative employees were considered and this may impede the generalisability of the study. Also, the data used were self-reported by employees and this has been criticised by some studies such as de Jonge et al. (1999). This cross-cultural analysis improved the validity of the job demand-control-support model in different cultural contexts as analyses of the model have mostly been carried out in Western settings.

Shifting from the analyses of Europe to Asia, the demand-control model was also analysed in the context of technical workers in Malaysia by Panatik et al. (2011). Malaysia is collectivist[58] in nature and this was reflected in the findings. The two-wave longitudinal study considered the moderating effects of job control and individual differences (self-efficacy) on the work related psychological responses of psychological strain, job satisfaction and turnover intentions. In contrast to the buffering role of job control as proposed by the model, the hierarchical regression analyses revealed that active jobs[59] increased anxiety and turnover intentions. Job control in this study was comprised of three measures: skill discretion, method control and decision-making. This implied that technical workers preferred to be told what to do when they had high job demand. The order tasks were carried out (timing control) was found to moderate the relationship between job demand and job satisfaction.

Panatik et al. (2011) also discovered the impact of individual differences among the technical workers as self-efficacy was found to buffer the negative impact of job demand on psychological strain only. They argued that the non-moderating impact of self-efficacy on the relationship between job demand and job satisfaction and turnover intentions might be due to the cultural context. An employee is viewed as a group and not as an individual. With more job demand, an employee is viewed as being of help to the group, thus, demonstrating loyalty to the firm. This implied that the link between job demand and job dissatisfaction and turnover intentions might

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[58] In Malaysia, the system of ownership and control of the means of production are collectively owned by society.
[59] Active jobs are jobs characterised with high level of job control and high job demand.

be weak and this explained the result. The findings of this study indicated the importance of considering various factors in the firm that may serve as moderators of the positive relationship between job demand and work-related strain. However, the focus of the study on technical workers only was a limitation as the findings might not be generalisable to other workers or even to other collectivist societies.

Focusing on the strain and learning hypotheses of the demand-control model, Taris and Feij (2004) conducted a three-wave longitudinal study on newly recruited individuals in the labour market working as machine operators and office technicians in Belgium, England, the Netherlands and Israel. The analysis of variance and structural equation modelling provided support for all the predictions based on the job demand-control model. That is, high levels of demand and control were associated with high levels of learning, while low levels of demand and control were not associated with learning. Also, a high level of control and a low level of demand were associated with a low level of strain. Examining cumulative effects, the joint presence of high demand and high control was found to be associated with reduced strain over time, while high demand and high control were not found to be associated with learning over time.

Taris and Feij (2004) also found strain to slightly increase over time when employees were in jobs characterised by low demand and low control. This can be explained based on Karasek's model as this type of job reveals a dormant worker and the gradual loss of skills might result in strain. Learning was only found to increase over time in the absence of strain, that is, job with low demand and high job control. Taris and Feij (2004)'s study was prone to some issues; job demand and control were not measured in all three waves of the study; the study was quite vague about the effects that were tested and explained; and it was quite difficult to distinguish additive and interaction effect.

Probst (2000) examined the moderating effect of control opportunities on the negative effects of job insecurity. This analysis was carried out with the thought that organisational changes, such as the flattening of organisational hierarchies, is the major cause of job insecurity but such changes indirectly provide participative decision-making opportunities for employees. The multiple regression analysis on data collected from six firms in the U.S and China revealed the negative effects of psychological demand associated with job insecurity on employees' job attitudes

and behaviours (these include satisfaction with co-worker, work and supervisor, intentions to quit and work withdrawal behaviours like absenteeism). Also, employees' participation in decision-making was found to be positively associated with the employees' outcomes. Based on the theoretical foundations provided by the demand-control model, the two-way interaction effect was tested. Job control through participative opportunities buffered the psychological demand associated with job insecurity and thus, improved employees' job attitudes and behaviours. That is, employees' outcomes were negatively correlated in high-strain jobs.

These findings suggested that apart from the overwhelming positive effects of employees' participation in decision-making, employees' participation in decision-making is also found to moderate the negative effects of job insecurity perceptions. This finding confirmed Wall et al.'s (1996) suggestion that the interaction effect will be supported when job control is conceptualised as being able to influence work-related decision-making.

4.9 Effects of Individual-Difference and Economic Factors on the Demand-Control and Demand-Control-Support Models

Roelen et al. (2009) focused on the relationship between occupational rewards[60] and the frequency and duration of absence due to sickness using the demand-control model in conjunction with the Effort-Reward Imbalance model.[61] They considered absence due to sickness as being a major health issue as it impacts negatively on the economy through insurance costs and the reduction in productivity. Using data collected in 2005 on workers in three Dutch companies and conducting basic statistics, Roelen et al. (2009) found a negative relation between job esteem and sickness absence frequency among men and a negative relation between income and sickness absence frequency among women. This implied that male and female workers were affected by different rewards in the firm. Men tended to be more engaged with the work when they were appreciated, while women preferred the income they received possibly because they were less likely to be appreciated. On the other hand, these occupational rewards were not associated with the duration of sickness absence. For men, a negative relation was found between absence due to sickness and job perspectives (this included job stability, promotion perspectives

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[60] The rewards considered include job esteem, income and job perspectives (status control).
[61] This model emphasises more of the role played by rewards more than job control, that is, it is the imbalance between effort and rewards that causes job stress.

and educational opportunities). Thus, it can be concluded that Dutch male employees in the companies' survey defined work based on job esteem, the promotion perspectives, educational opportunities and job stability.

Emphasising self-efficacy as an important individual-difference variable in the examination of the stressor-strain relationship and job satisfaction, Mulki et al. (2008) highlighted the main effects of self-efficacy on workplace stressors. Conducting a structural path analysis of the data collected on salespeople in a large retail outlet[62] dealing in the sale of new and used boats, the findings revealed that self-efficacy was negatively related to role conflict, role ambiguity and work overload. This finding may mean that self-efficacious employees tend to develop an increasing sense of competence and confidence in each encounter with demanding customers. The results suggested that self-efficacious employees tended to have a more positive view about job roles and thus, viewed workload to be less overwhelming. This study was able to provide evidence in that self-efficacy as pointed out in the study by Panatik et al. (2011) did not only act as a moderator but also impacted on stress associated with job roles. However, the subjective scales that were used may have affected the data.

Giving a twist to the empirical investigation of the job demand-control model, Söderfeldt et al. (2000) examined the model in relation to the sense of coherence in three contexts namely: the health context[63], the psychophysiological context[64] and the burnout context.[65] This test of the influence of employees'sense of coherence entailed the examination of both the Salutogenic and the demand-control paradigms. The Salutogenic paradigm refers to a model that focuses on the factors that enhances employees' wellbeing. Thus, such studies that tend to focus on how active coping strategies, self-efficacy, intrinsic motivation and sense of coherence tend to attenuate negative health situations can be classified as studies of the Salutogenic paradigm.

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[62] The salespeople in this outlet were used because this type of firm operate in a competitive market with highly demanding customers and this type of firm appears to show how salespeople are able to cope in the face of high levels of stress.

[63] Components of this context include psychological, musculoskeletal, gastrointestinal and immunological symptoms.

[64] Components of this context include physiological stress indicators like immunoglobulin G that relates to the immune system.

[65] Components of this context include emotional exhaustion, depersonalisation and reduced sense of personal achievement.

This study also falls in line with the arguments in the literature concerning the inclusion of individual-difference variables when examining the impact of job control and demand on employees' wellbeing. An employee with a high sense of coherence was hypothesised to deal with job demand better than an employee with less sense of coherence. Using data on employees in social welfare and social insurance agencies in Sweden, Söderfeldt et al. (2000) found a significant individual effect of sense of coherence in most of the models and this lends support to the discourse on the special importance of including individual-difference variables like sense of coherence when examining the demand-control model on health. The musculoskeletal, gastrointestinal symptoms as well as sense of accomplishment models did not perform very well.

On the other hand, job demand (measuring pressure) and sense of coherence variables were revealed to be significant in psychologically related models. Job demand had an effect on prolactin while sense of coherence had significant effects on cortisol and psychological symptoms only when interacted with emotional job demand (in contrast to quantitative job demand). Thus, support was provided for the proposition that employees handled stressors better when they had a high sense of coherence. These findings revealed that distinguishing between quantitative job demand (workload) and emotional job demand is quite important as some jobs that entail dealing with humans could be associated with more emotional exertions than workload.

Still on the demand-control model, the study by Daniels et al. (2011) focused exclusively on the link between problem solving demand, job control and social support in the generation and implementation of ideas. That is, the study focused on how the model relates to creativity and innovation. They measured job control as the number of times an employee changed aspects of work to solve problems, while social support was defined as the extent employees discussed problems with their colleagues to solve problems. Similar to the study by Panatik et al. (2011), Daniels et al. (2011) also tested the moderating effect of an individual-difference variable (personal initiative) on the relationship between change in work activities to solve problems and the generation of ideas on the one hand and the implementation of ideas on the other hand.

Using data on workers in five UK firms and conducting three-level analyses[66], Daniels et al. (2011) found that changing aspects of work to solve problems (job control) was more closely related to creativity while discussing problems was suggested to be associated with innovation when workers had high level of personal initiative. This study points out that the model can be extended to explain creativity and innovation and it adds to the literature in this regard. The findings revealed the problem solving potential of job demand, control and support rather than only showcasing their motivational potential. Also, it posited that personal initiative was another moderating factor and should be considered as being important. However, considering the data that was used, the findings might not be generalisable to all workers in those firms as it was managers, engineers, consultants, designers and researchers that were considered. Apart from the fact that the data was self-reported and may have inflated the reports, the measure of job control could also confound the concept of innovation as changing aspects of work could also mean innovation.

In another study, Karasek (2004) tried to establish success criteria for firms with a view of how risks of stress[67] can be reduced. Analysing 19 international case studies, he observed that employees' participation is associated with the reduction of job stress. He further stated that such participation could only occur when the management provided facilities for such practices; possibly in the form of labour-management committees. Participatory practices not only promote trust in open communication but also facilitate the feeling of not being punished for discussing job stress and the required changes in the work environment[68]. A job redesign such as employees' involvement can be self-sustaining when: employees are made to understand that the job is associated with stress, problem-solving groups are created to discuss how job stress can be reduced, employees are made to understand the firm's problems and action plans for solutions, and economic and technical resources are available for the redesign to be successful.

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[66] The three-level multi-level regression was conducted because the dataset was three-level in nature because the hourly responses are embedded in 89 participants and the participants nested into five organisations.

[67] A peek into the literature reveals that increased risks of stress are caused by the modern techniques of production.

[68] The reorganisation of work environment requires a joint programme in the sense that the workers have a better idea of the aspects of work that need to be changed and the support of the management ensures such a change.

Bradley (2007) hypothesised that the stressor-strain relationship of Karasek's model varies with job tenure. He argued that the work environment of new starters in the job would be different from that of experienced workers and so it would be more appropriate to consider the moderating effect of job tenure on stressor-strain relationships. With such a proposition in mind, the author carried out analyses on 670 Australian teachers on two occasions (8 month follow up). Focusing on the baseline (demand-control-support) model, the descriptive statistics revealed that demand and control were positively and negatively correlated with the indices of strain (job stress, job dissatisfaction and intention to quit) respectively. However, the moderated regression analyses revealed the small main effects associated with job control and supervisor support while the interaction effects were non-significant. Testing the moderating effect of job tenure, the descriptive statistics revealed that the main effects did not differ with job tenure. The moderated regression analysis showed job tenure as a moderator because the interaction effect was significant for job dissatisfaction and intention to quit.

By conducting separate analyses for new starters and experienced teachers, Bradley (2007) found that control moderated the relationship between demand and intentions to quit as well as stress for the sample of new starters. This may be explained based on the adjustment model. That is, as teachers become more experienced in the job, they rely less on the level of control as a moderating resource as they can utilise the practical and psychological resources that have been accumulated over time. Also, the experienced teachers may have access to task variety, promotion or training opportunities as well as support from spouses, which could all be used in managing stress at work. In sum, this study suggested that interventions such as control and social support tested by the study may help to improve employees' wellbeing among Australian teachers and that the stress-strain relationship may differ with job tenure. Some minor points of criticism are that: (1) a more advanced regression analysis such as multi-level analysis may have provided clearer results of the hypotheses (2) the study may not be generalisable to other occupational groups as it was a teacher-only sample that was used. The teacher-only sample was further restricted to primary and secondary public school teachers excluding those in private schools.

A very recent cross-country study by Cottini and Lucifora (2013) examined the link between mental health and working conditions in Europe by considering fifteen European countries. This study considered the working conditions of employees

with its theoretical foundations in the job control-demand model. As a result of industrialised countries being associated with increased competition in the market and rapid technological innovations that has in turn increased demands on employees' performance in recent times, job quality has been argued to be deteriorating in Europe. The authors considered mental health problems as being important as they not only have spill-over effects on co-workers but they also affect the economy through increases in health expenditure such as increases in disease and disability claims. They used the 1995-2005 EWCS as the survey provided sufficient and detailed information on working conditions, job attributes and mental health indicators.

Cottini and Lucifora (2013) found that a male manager who has a permanent contract at a large firm that is in the service industry is associated with almost a 40% probability of reporting mental health problems. However, the estimated probability reduced to 6% when the same individual is employed in the manufacturing industry. Females in the service industry were associated with the lowest probability of reporting mental health problems. These findings showed that working conditions such as job demand and job hazards were related to mental health and varied between males and females as well as among industries. Also, the findings revealed that job demand in contrast to job hazards had a significant impact on mental health, as shown by men in the service industry. Focusing on country variation that may include different health systems, labour market regulations or environmental characteristics, the probability of an employee reporting mental health problems would be 11% higher if he/she is Swedish and it would be 3% lower if he/she is French. Further, the findings on the marginal effects of job quality revealed that the presence of a properly regulated labour market and efficient health systems (accessibility) and the financing of health care services improved the trade-off between working conditions and mental health problems.

4.10 Criticisms of the Demand-Control and Demand-Control-Support Models

The job demand-control model has been criticised for being too basic. That is, it lacks some important factors such as social support as well as individual-difference factors that may determine the way employees react in the firm. These criticisms led to the inclusion of social support in the demand-control model by Johnson and Hall (1988). Also, several studies tended to include individual-difference factors such as

self-efficacy, time management, and locus of control in analyses to check for any improvement on the model. Roelen et al. (2009) stated that despite the fact that so many studies on mental strain have analysed the relationship between work characteristics and health issues using the job demand-control model, one of the limitations of the model is the non-inclusion of coping strategies. Employees responded to various working conditions differently and this in turn created different health outcomes.

The non-significance of the proposed interaction effect by the demand-control model was argued by Wall et al. (1996) to be due to inadequate operationalisation and measurement of job demand and job control. They criticised Karesek's (1979) model based on the measures of: (1) job demand in that it incorporated affective judgements and (2) decision latitude included descriptive as well as affective items, that is, it is a mixture of job control, skills discretion and job complexity. They argued that the measures researchers mainly use were generic or broad and more descriptive measures would be less likely to be affected by self-report bias. Also, Mikkelsen et al. (2005) observed that the model did not distinguish between qualitative and quantitative types of job demand. The dimensionality of these types of demand was necessary to determine the type that affects or improves employees' wellbeing.

Apart from the concepts of job demand and job control being argued to be prone to measurement or conceptual problems, Beehr et al. (2000) also stated the same about social support. They pointed out that social support that is considered as an important workplace characteristic when examining employees' strain should have significant influence on attitudinal and workplace outcomes. However, they explained that due to the fact that the factor was normally not properly defined or measured, inconsistent results were obtained. They emphasised that the source and type of social support should be clearly stated so as to be able to determine the type and source of social support that is significant in a particular context.

Apart from the problems of conceptualisation or measurement reliability, Weststar (2009) also argued that the confounding nature of the 'decision authority' construct of the 'job control' concept of the model was a major problem. The author suggested that the form of decision authority should be identified. That is, employees may participate in broad decision-making at the management level and/or may make

decisions about his/her work and in the work domain. Thus, the non-distinction of these forms impeded the results obtained.

In methodological terms, studies like that of Morrison et al. (2003) have argued that the models need to be redefined and reconceptualised at the employee level of analysis as well as at the job level. They argued that the employee's perception of job demand, control and social support is different from the management's perception. They also attributed the inconclusive results obtained in the literature to the types of dependent variables examined. Individual-level variables tended to explain individual-inclined consequences like strain/stress better than workplace/job-level variables. This may explain the significant results obtained by studies that examined job stress using the models whilst ignoring job as a unit of analysis. In examining the effects on other factors like sickness absence or labour turnover, job-level variables will have higher explanatory power. In sum, they suggested that with most of these studies conducted on workplace data, the employees and workplaces should be considered as the units of analysis and not either of employees or workplaces.

4.11 Conclusion

This chapter has outlined previous studies that have examined the major tenets of these models. An important recommendation that was evident in most of these studies is that scholars should clearly distinguish between various forms of job demand, job control and social support. A possible explanation for this is that different forms of job demand, control and social support may have opposite effects on employees' wellbeing. To progress with the empirical analyses of the main aim of this study, we outline the conceptual framework, which aids the development of our major hypotheses. The conceptual framework outlined in the next chapter combines the propositions of the models we have reviewed in this chapter and the utility theory.

Chapter 5. Conceptual Framework

5.1   Introduction

The utility function that we use in this study is a combination of the standard economists' model (basic utility theory) and the demand-control-support model. According to the basic utility theory, an individual gets utility from wages and leisure and disutility from effort. Effort will not be directly measured here but job demand will be used as a proxy for effort. The concepts of job demand and employees' engagement practices in the firm such as the availability of autonomy and participation in decisions are linked to the demand-control model as we have seen in the preceding chapter.

The adapted utility theory that is analysed in this study is based on an approach to the consumer theory developed by Lancaster (1966a). This utility theory will be explained in more detail in subsequent sections. Lancaster (1966b) suggested that the consumer maximises his/her utility based on the characteristics of the good and not the good being the direct object of utility. The traditional approach to consumer theory differs from this approach as it omits the characteristics (intrinsic properties) that make a good different from another, so that a consumer who consumes good A is as rational as the consumer who consumes good B. Thus, the traditional theory only builds on the property shared by both goods, which basically means they are goods. However, despite the fact that intrinsic properties are not accounted for by the traditional approach, economists still take account of these properties by analysing substitute and complementary categories of goods; with the suggestion that butter and margarine are substitutes while cars and fuel are complementary. By classifying these goods under the substitution category, this means that the goods are believed to have some intrinsic properties that make them substitutes.

This chapter extends the utility function as highlighted in Lancaster's (1966a) consumer theory approach. We incorporate the demand-control-support model into the utility function to explain employees' utility on-the-job. In line with this, the chapter briefly summarizes the theoretical foundations of the major components of our utility function, which have been outlined in detail in previous chapters. Following this introduction, the section 5.2 briefly summarizes the main

assumptions of the demand-control model. Section 5.3 summarizes the assumptions of the demand-control-support model while section 5.4 briefly highlights the theoretical framework of wage that is given in part for the exertion of effort. Section 5.5 focuses on our conceptual model and section 5.6 concludes.

5.2   Demand-Control Model

Karasek's model, which is also called the demand-control model, suggests that a job is stressful when there is a high level of job demand and a low level of job control (Karasek, 1979). This refers to the strain hypothesis where job control serves as a moderator of the potential negative effect of job demand on employees' wellbeing. Also, another tenet of the model is that the job ensures employees' optimal motivation as well as learning when a high level of control is associated with a high level of job demand (learning hypothesis). For the interest of this study, job control is broadly defined as having decision authority at the management and employee level.

5.3   Demand-Control-Support Model

Johnson and Hall (1988) extended the demand-control model to include social support. The basic tenet of their model is that employees have the highest risk of poor wellbeing when they are in a high isolation-strain (iso-strain) job. That is, a job characterised by high job demand, low social support and low job control. Social support by workers and supervisors (apart from job control) is argued to be a potential psychosocial resource that can moderate and improve understanding of the demand-strain relationship (Johnson and Hall, 1988; Karasek and Theorell, 1990).

5.4   Theory on Wage

The incentives given by the firm to workers for the exertion of effort not only constitutes favourable work rules but also consists in part of a wage that is fair according to the norms governing gift-giving (Akerlof, 1982). Based on the reference level theory, these incentives of the firm are regarded as being fair when co-workers in the reference set are treated the same way.

Akerlof (1982) in his exposition of the gift-giving idea stated that the norms governing the effort of workers in a work group depends in part on the average wage paid by the firm (for the employed and unemployment benefits if unemployed) and the incentive in the firm that rewards various levels of effort/outputs. The part of the

norms of effort equation as suggested by Akerlof (1982) that is of interest to this study can be summarized by the following equation:

$$e_N = e_N[W(e,i)] \qquad (5.1)$$

Where e_N is norms of effort and $[W(e,i)]$ is the function that represents the wage system of the firm. It is a function that relates the wages of an employee of certain characteristics/tastes i with his/her effort e.

In the same vein, the utility of an employee depends on the norms surrounding effort (eq. 5.1), the effort itself e, the wage rate w if employed and unemployment benefits if otherwise. Thus for an employed worker with characteristics i, the utility function can be represented as:

$$u(e_N, e, w, i) \qquad (5.2)$$

This employed worker chooses an effort level that maximizes utility u subject to the employment requirement to remain in the job and this will be effort exceeding the firm's minimum requirement ($e \geq e_{min}$).

$$\max_{e \geq e_{min}} u(e_N, e, w, i) \qquad (5.3)$$

For the firms, they have an output that depends on the effort of the employees, which can be represented as:

$$Q = f(e_1, e_2, \dots, e_k) \qquad (5.4)$$

where e_k is the effort of employee k and K is the number of employed workers

With wages being paid to employees and being influenced by the type of employee i and effort ($w(e,i)$), there is a wage cost to the firm and this can be represented as:

$$\sum_{k=1}^{K} w(e_k, i_k) \qquad (5.5)$$

where i_k is the tastes/characteristics of employee k.

The firm chooses the wage function, work rules and the number of employees it wishes to recruit to maximise profits:

$$\pi = pf(e_1, e_2, \dots, e_K) - \sum_{k=1}^{K} w(e_k, i_k) \qquad (5.6)$$

where p is the price of output. However, the behaviour of the firm is subject to the constraint of whether the individual joins the firm or not and this is based on whether or not the firm offers a good contract.

5.5 Our Conceptual Model

As we have mentioned, we will be incorporating the extended model (demand-control-support model) in our adapted utility function. We suggest that such job characteristics for example through the amount of control available will be rewarding enough to offset the level of job demand and improve job satisfaction.

An individual's wellbeing in the job that constitutes part of their overall wellbeing can be represented as:

$$w = w[u, v] \tag{5.7}$$

where w represents overall wellbeing, u is wellbeing in the job and v is wellbeing derived from other aspects of life. Thus, the utility from working in accordance with the utility function described in equation (5.2) can be presented as a sub-model of equation (5.8) and it has a standard form of:

$$u = u[e_N, e, w, i, j] \tag{5.8}$$

where e_N, e, w, i, j represents norms of effort, effort itself, wage, employee and job characteristics respectively.

This utility function will be slightly modified in the sense that we will not be testing the norms of effort and the main focus of this study is individual incentive schemes in comparison to collective incentive schemes and not the wage rate of the employee in its entirety. Also, the incorporation of the demand-control-support model that was mentioned earlier will be in the form of job characteristics. Thus, we suggest that the utility of each employee depends on effort, which we will consider as job demand and job control (considered as employees' engagement practices). An employee's utility is thus summarised by the equation:

$$u = u[w, c, p, t, f, s, m, jd, i] \tag{5.9}$$

w represents individual incentive pay, c is job control (job control here refers to influence over the work domain and the tasks performed – participation in decisions at the employee level), p is participation at the management level through suggestion schemes, t is the presence of consultative management, f represents

informative management, s represents secure job, m is supportive management (measure of social support), j_d denotes job demand, and i denotes employee characteristics. All these components of the utility function (excluding job demand and employee characteristics) will be generally referred to as Employees' Engagement Practices (EEPs) from now on.

In analysing job satisfaction (the measure of utility in this study), Skalli et al. (2008) suggested it is important to note that the overall utility obtained from working is a weighted portion derived from the employee's level of satisfaction with different aspects of the job such as the job itself, hours of work, level of autonomy, pay, sense of achievement, skill development. This suggestion is drawn from the approach to consumer theory developed by Lancaster (1966a). Lancaster's approach deviated from the traditional approach by suggesting that utility is derived from the characteristics of the good and not directly from the good itself. That is, with a meal being composed of nutritional characteristics in different proportions, the utility derived from the meal depends on the utility associated with the nutritional characteristics.

This approach to consumer theory developed by Lancaster (1966a) assumes that the consumption process is an activity that has goods (in combination or individually) as the inputs and characteristics (referred to as the intrinsic and objective properties of consumption activities) as outputs. Lancaster (1966a) contended that the structure of consumption activities differs from production activities in that there are joint inputs and a single output in a typical production activity. On the other hand, a typical consumption activity is comprised of a single input (some consumption activities may require several inputs – goods) and joint outputs (a collection of characteristics). In this approach, the collection of characteristics is core. A single good may possess more than one characteristic and a characteristic may be associated with more than one good. In the latter case, such goods may have other characteristics that are qualitatively different or the same characteristics but in quantitatively different combinations.

Thus, utility ranks collection of goods indirectly based on the characteristics that they possess. The structure of the relationship between goods and a consumer's preferences is assumed to be objective in the sense that the characteristics of a good (s) are the same for all consumers and are in the same quantities. By so doing,

individual differences (consumer choice) are made evident only in the choice between the collections of characteristics. Relating these arguments to our study, we suggest that the employee's overall wellbeing (measured by overall job satisfaction) depends on the satisfaction levels associated with different aspects of the job as a result of the presence of different individualised EEPs. Also, we will assess the possibility that the effects on employees' wellbeing will be greater with the joint presence of individualised EEPs and equality plans (fairness). We will be concentrating on individualised EEPs because we expect that an individual employee's inputs in decisions, an employee's control over tasks and working conditions, a secure job as well as social support from managers that is accompanied by individualised incentive pay (such as merit pay) are important for an employee's job satisfaction. The consideration of the levels of satisfaction associated with different facets of the job tends to shed more light on the qualities of different EEPs.

Using Lancaster's consumer theory approach to examine the aim of our study, we will be making the following assumptions:

- The job does not necessarily lead to an improvement in job satisfaction. Instead, the job possesses different workplace environment characteristics through the presence of various EEPs and it is these workplace environment characteristics that impact on job satisfaction.
- In general, a job possesses more than one workplace environment characteristic and many workplace environment characteristics will be shared by more than one job.
- The workplace environment characteristics accruing to EEPs that are jointly implemented may differ to the workplace environment characteristics associated with EEPs that are implemented separately.

To be able to develop a formal model from the ideas outlined above, the following assumptions will be made.

1. The presence of an individualised EEP or a collection of EEPs will be regarded as being part of the Human Resource Management (HRM) patterns of the workplace and as such this will be associated with an HR pattern level (a scalar). The relationship between the HR pattern level and the available individualised EEPs will be assumed to be linear, so that, if x_j is the jth EEP,

we have the vector of total EEPs required for a given HR pattern vector (y) as:

$$x_j = Ay \tag{5.10}$$

2. It is also assumed that each HRM pattern produces a vector of workplace environment characteristics and the relationship is linear so that if z_i is the amount of ith workplace environment characteristic, we have that

$$z_i = By \tag{5.11}$$

3. Furthermore, the employee will also be assumed to possess an ordinal utility function on characteristics $U(z)$ and he/she will choose a situation that maximises $U(z)$.

Based on these assumptions, this model indicates that the relationship between the collections of workplace environment characteristics available to the employee (that is, the vectors z) that directly determine the utility of the employee, and the collections of individualised EEPs in the firm (the vectors x) that facilitates the engagement of employees in the firm is indirect through the HRM pattern vector y and not direct or one-to-one as in the traditional theory.

By considering the relationships that link z and x, we focus on equations (5.10) and (5.11). Let us suppose that there are k workplace environment characteristics, p HR patterns and q EEPs. There can only be a one-to-one relationship between z and x if $k = p = q$ and in this case A and B matrices are square (that is, the number of equations equals the number of variables in both sets of equations). Thus, y can be solved based on x:

$$y = A^{-1}x \tag{5.12}$$

given $z = BA^{-1}x$ (5.13)

The utility function ($U(z)$) can thus be written directly as a function of $u(x)$. With a one-to-one relationship between workplace environment characteristics and EEPs, it implies that there is no need for another approach as it is the same as the traditional approach to consumer theory. However, in the absence of one-to-one correspondence like in the case of $p > q$, equation (5.12) imposes q restrictions on the p-vector y so that y can still be chosen with $p - q$ degrees of freedom. In the case of $k < p$ y can still be chosen with $p - k$ degrees of freedom. One point to note is: whether the ultimate relationship provides several choices of z for a given x

or the other way round and whether all vectors of z are attainable, it all depends on the relationship among k, p, q and structures of matrices A and B. It is expected that an employee may have to choose among many paths linking the collections of EEPs with the workplace environment characteristics collections.

Employing the standard choice model into our analysis, the job satisfaction model can be represented as:

$$Maximize\ U(z) \tag{5.14}$$

$$\text{Subject to } j_d x \le c \tag{5.15}$$

$$\text{With} \quad z = Bx \tag{5.16}$$

$$x = Ay \tag{5.17}$$

$$x, y, z \ge 0 \tag{5.18}$$

By assuming in the initial stage for simplicity that there is a one-to-one correspondence between EEPs and HRM patterns, the employee-satisfaction model can be written in a simpler form as:

$$Maximize\ U(z) \tag{5.19}$$

$$\text{Subject to } j_d x \le c \tag{5.20}$$

$$\text{With } z = Bx \tag{5.21}$$

$$z, x \ge 0 \tag{5.22}$$

Where z is a vector of workplace environment characteristics, j_d is a vector of job demand, x is a vector of EEPs, c is a vector of participatory practices that induce control and B is a matrix that specifies the quantities of characteristics obtained from unit quantities of the available EEPs. In other words, the simplified model suggests that the employee is assumed to have a preference ordering over the set of all possible vectors of workplace environment characteristics and he/she maximizes utility based on the characteristics of the workplace environment subject to the constraints associated with the EEPs (job demand) that characterises the job being less than or equal to the level of job control available to the employee. We are assessing the possibility that employees will be satisfied in the job when job demand is less than or equal to job control. This constraint is different from the employment requirement constraint mentioned in the previous section (section 5.4). Here, we are

considering how employees maximise their utility subject to the practices necessary to improve their satisfaction with the job.

A peek into the approach to the consumer theory that is being extended here reveals the dependence of utility on workplace environment characteristics (defined on the characteristics-space). This dependence on workplace characteristics is as a result of EEPs (EEPs taking the position of good as in the consumer theory), the job demand constraint defined based on EEPs (defined on the practices-space) and the equation system ($z = Bx$), which represents a transformation between practices-space and workplace environment characteristics-space. In the traditional consumer theory on the other hand, the utility and budget constraint are defined based on the good-space or practices-space, in the context of our study. The central role in the approach developed by Lancaster (1966a) is undertaken by the transformation equation ($z = Bx$) and the structure and properties of the characteristics matrix B. Some properties of the transformation between the practices-space and the characteristics-space show that B is a matrix of constants and the transformation $z = Bx$ is linear. These properties are as follows:

➢ A convex set in practices-space will transform into a similar set in characteristics-space and this in turn implies that the job demand constraint ($jx \le c, x \ge 0$) will become a convex constraint on the $z's$.

➢ An arbitrary vector z may not have vector x in the corresponding practices-space in cases where an inverse transformation does not exist.

➢ However, if an inverse transformation does exist from the characteristics-space to practices-space, it will transform convex sets into similar sets so that for any vector z that does have vector x in the corresponding practices-space, the convexity of the utility function on the $z's$ will be preserved in relation to the $x's$.

The set of all possible HR patterns (represented by $z = Bx$ and this can be called the HR technology as in the case of consumption technology) that is as important as the particular shape of the utility function is described fully by only the EEPs (A) and workplace environment characteristics (B) matrices together. However, certain levels of job satisfaction can be related to more generalised descriptions of the technology. According to Lancaster (1966b), the major structural property of the HR technology is the relationship between the number of rows and columns of B.

That is the relation between the number of workplace environment characteristics and the number of HR patterns in the firm. The HR technology will relate EEPs on the one hand with workplace environment characteristics on the other hand.

Assuming that there is a one-to-one relationship between EEPs and HR patterns in the firm, the study will utilise the case in which the number of EEPs exceeds the number of workplace environment characteristics. For example, workplace environment characteristics like employees' participation in the firm may be linked to participatory practices such as the presence of job control, suggestion schemes and consultative atmosphere. In such a case, the HR technology $z = Bx$ has fewer equations than variables and this implies that for every workplace characteristics vector, there is more than one EEPs vector. This distinguishes the approach to consumer theory utilised here from the traditional approaches to consumer theory. In line with this, different EEPs tend to facilitate a facet of the job. For every point in his/her characteristics-space, the employee has a choice between different EEPs vectors. Given the job demand (price) vector, the choice is efficient, in that for every workplace environment characteristics vector, the employee will choose the most efficient combination of EEPs so as to achieve that collection of workplace environment characteristics and the efficiency criterion will be minimum cost.

5.6　Conclusion

In sum, this chapter has highlighted the main components of our conceptual model. The conceptual model, by using Lancaster's (1966a) consumer theory approach highlighted that job demand should be controlled for when testing the effect of employees' engagement practices on various forms of job satisfaction. Our conceptual model contributes to the job satisfaction and employees' engagement practices literature by exploring a consumer theory approach, which combines Economics and Work Psychology models, to explain workplace dynamics. This model not only informs us of the importance of controlling for job demand, it also states that employees will only be satisfied with the job when job demand is less than or equal to the presence of employees' engagement practices. As such, this model predicts that the levels of job demand and the levels of employees' engagement practices available to employees are important. Based on the propositions from our conceptual model, the following two chapters are dedicated to the empirical analysis of these propositions.

Chapter 6. The Effects of Employees' Engagement Practices on Job Satisfaction

6.1 Introduction

As we have seen in previous chapters that employees' engagement practices are employee-centred, we suggest the importance of examining job satisfaction rather than firm and employee performance that have dominated previous studies. An important issue is that little consideration has been given to the possibility that individual forms of employees' participation in decision-making, both at employee and management level, and other engagement practices are better predictors of job satisfaction than collective forms of participation. This may be true in particular when employees belong to discriminated groups since individualised schemes may offer opportunities for employees to exercise creativity and fulfil their potential. Moreover, effective human resource systems that explore the complementary potential of these practices have been suggested to be sources of sustained competitive advantage (Huselid, 1995). Milgrom and Roberts (1995) as well as Huselid (1995) argued that complementarity among these practices should also be considered rather than focusing on only the individual presence of workplace practices.

Several studies have provided evidence on the productivity effects of collective participation in decisions (at the management and production level) and returns (profit sharing and employee share ownership plans) (e.g. Kato and Morishima, 2002; MacDuffie, 1995; Black and Lynch, 2001; Perotin and Robinson, 2000; Lucifora and Origo, 2012; Fakhfakh and Perotin, 2011; Bryson et al., 2005). Further, Black and Lynch (2001) suggested that the joint presence of participation in returns and employee 'voice' (through unions) results in greater productivity effects while Perotin and Robinson (2000) suggested that the combined adoption of Joint Consultative Meetings and EO policies is associated with greater productivity effects.

There have also been studies on practices related to the interest of this study (individual control and individual incentives). The availability of discretion and

autonomy[69] that enhances employees' job influence has been suggested to facilitate the provision of productivity-enhancing suggestions by employees as well as improve job satisfaction (Bartling et al., 2012; Wood and de Menezes, 2011 and Bae et al., 2011). A large literature from work psychology, industrial relations and organisational behaviour (e.g. Wood, 2008; De Witte et al., 2007; Brough and Pears, 2004; Noblet et al., 2006; Noblet and Rodwell, 2009; Mikkelsen et al., 1999; Morrison et al., 2003; Akerboom and Maes, 2006) have quantified the impact of autonomy and job control on job satisfaction by utilising the demand-control model.

Despite the significant effects of collective incentive schemes observed in the literature, Lazear and Shaw (2007) observed an increase in the use of individual incentives. The proportion of firms offering individual incentives to 20% and more of their workforce is suggested to have risen from 38% to 67% in contrast to increase in the use of collective incentives- from 26% to 53%. Duflo et al. (2012) suggested that the combination of monitoring and individual incentives improved performance while Lazear (2000) and Bender et al. (2010) provided evidence that the use of piece rates improved productivity. Cornelissen et al. (2011) on the other hand suggested a positive relationship between individual performance-pay and job satisfaction. However, Bender et al. (2010) indicated that work intensity is associated with piece rates and this may in turn offset positive productivity effects. The question regarding the resulting effect of individual incentives when combined with individual participation in decision is still unanswered and this is what this study seeks to resolve.

Relying on the conceptual model developed in the preceding chapter, we consider the effects of individual forms of employees' engagement practices on various forms of job satisfaction in comparison with collective participation and incentive schemes. Moreover, these effects may be stronger in workplaces that have EO policies if the plans are effective in countering discriminatory practices (e.g. see Perotin and Robinson, 2000). The structure of this chapter is as follows. Following this introductory section, our hypotheses are outlined in the second section. Measures of the forms of job satisfaction, employees' engagement practices, employee characteristics and workplace characteristics are described and explained in the third section. Section four describes the data and our feasible sample. Section 5 presents

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[69] This relates to the concept of employees' involvement previously mentioned.

some descriptive statistics while section 6 describes the empirical strategy. Section 7 presents the results and discussions and section 8 concludes.

6.2 Hypotheses

Huselid (1995) suggested that employees' engagement practices have implications for job satisfaction through their influence over employees' motivation. He argued that such practices can affect employees' motivation by encouraging employees to work harder whilst using their initiative and being creative. He contended that workplace's use of performance appraisals to assess either individual or group performance and are tightly linked to incentive schemes as well as incentive schemes will motivate employees. However, Huselid (1995) argued that having a motivated workforce is not all that is required for workplaces to capitalize on the potential source of profitability. The contribution from a motivated workforce will be limited if they do not have control over their roles.

Thus, the provision of organisational structures that promote the participation of employees and provide them with the ability to exert control over their jobs is suggested to be of importance when considering employee and firm performance.

In sum, our approach is to estimate this equation:

$$S_{ij=} \alpha + P'_i\beta + C'_i\delta + W'_i\gamma + PW'_i\vartheta + PWEO'_i\varphi + X^{S'}_i\mu + \varepsilon_{ij} \qquad (6.1)$$

Where P_i is individual form of participation in decisions at workplace level, C_i is job control, which represents individual form of participation in decisions at employee level, W_i represents individual incentives, PW_i portrays the joint presence of individual participation in decisions at workplace level and individual incentives and $PWEO_i$ shows the joint presence of individual participation in decisions at workplace level, individual incentives and EO policies. X^S_i are other control variables affecting job satisfaction outcome and ε_{ij} is the error term. Accordingly, i and j corresponds to an employee and a workplace.

Hypothesis 1:

Individual employee's participation in decision-making and job control are better predictors of various forms of job satisfaction when compared to collective participation in decisions. Thus,

H1(a): $\beta > 0$

H1(b): $\delta > 0$

Previous studies have concentrated on collective forms of participation with some studies analysing job control and job satisfaction. However, we argue that individualised practices are better predictors because job satisfaction relates to individual employees.

As earlier stated, employees' participation in the workplace, which also means the delegation of authority to employees where a competent contribution can be made is associated with increased employees' motivation. As such, employees' participation is embedded and linked to issues such as intrinsic motivation and it is very important to control for such kind of motivation. Thus,

Hypothesis 1(c): *Intrinsic motivation plays an important role in the engagement practices-job satisfaction link.*

In line with our interest in individualised practices, we focus on individual incentives as they are more likely to appropriately reward employees' effort and influence job satisfaction. We argue that workplaces that value employees' commitment are more likely to invest in incentive schemes that reward employees' performance. However, we suggest that individual incentives will be more appropriate as they are void of free-riding problems. We also anticipate that the resulting positive effect is not offset by work intensity as suggested by Bender et al. (2010).

Hypothesis 2: *The use of individual incentives is positively related to different forms of job satisfaction and this effect is not offset by work intensity. Thus, H2: $\gamma > 0$*

Apart from the individual effects of these practices in workplaces, we also examine the complementary and supportive nature of these practices. Huselid (1995) suggested that effective systems of employees' involvement and incentive schemes that exploit the potential complementarities among these practices are the sources of competitive advantage. Also, Cox et al. (2006) suggested that single practices are likely to have less effect than practices that jointly operate in the workplace because of the absence of reinforcement. We anticipate that the effect of each type of workplace practice is strengthened by the presence of another. We suggest that the

effectiveness of individual employee's participation in decision-making[70] will be strengthened when employees know their effort will be adequately rewarded. Our next set of hypotheses can be summarized as follows:

Hypothesis 3: *Individual employee's participation and individual incentives are complementary; as such the effect of the joint presence of individual employee's participation in decisions and individual incentives is greater than the sum of the individual effects of these practices when implemented separately in the workplace. As such, H3: $\vartheta > 0$*

Still in the light of complementarity, we argue that individual employees' participation in decision and individual incentive schemes may be restricted if implemented in a discriminatory workplace environment. As such, the perception of differential treatment may worsen with the presence of these practices if discriminated groups are not fully involved. However, with the presence of EO policies, individual participation in decision, and individual incentives will be reinforced if discriminated groups are allowed to participate, and are rewarded appropriately for their effort and contribution. This will in turn have immediate effects on factors such as motivation, creativity, job satisfaction. Also, these practices may strengthen the presence of EO policies. Participatory workplace environments are void of large power imbalances; as such, policies against bullying and harassment are reinforced. Moreover, Perotin and Robinson (2000) provide clear evidence that the joint presence of employees' participation and EO policies has greater productivity advantage over the individual effects of these practices. We envisage that the greater productivity effect may have been necessitated by a 'happy workforce'. Thus, we expect that the joint presence of these practices will have direct greater effect on job satisfaction. The last set of hypotheses can be summarized as:

Hypothesis 4: *The effects of the joint presence of individual participation, individual incentives and EO policies are greater than the sum of individual effects when implemented separately because of complementarity among these practices; H4: $\varphi > 0$*

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[70] This individual form of participation in decisions is represented by the use of suggestion scheme. This scheme represents direct contribution in decision-making. Also, it represents direct voice and we focus on this type of practice because we anticipate it to be superior to collective or indirect representation (joint consultative committees)

6.3   Measures of Dependent and Explanatory Variables

6.3.1   Dependent Variables

Job satisfaction has been substantially considered by studies on the demand-control model as a dimension of employees' wellbeing apart from the physical and mental health status of employees (e.g. De Witte et al., 2007; Wood, 2008). Job satisfaction is measured based on respondents (employees) satisfaction with various aspects of the job including: sense of achievement, initiative, influence, training, opportunity to develop skills, pay, job security, the work itself and overall decision-making. As such, the main predictors and the control variables may have different effects on these forms of job satisfaction because these forms of job satisfaction are associated with diverse types of rewards and costs. For example, satisfaction with job security is employees' evaluation of the level of uncertainty associated with their jobs while satisfaction with the work itself relates to assessment of the contents of the job. A six-response scale was adopted by WERS2011 in measuring these satisfaction levels and they range from 'don't know to Very satisfied. This is recoded by excluding the 'Don't know' scale and 'very satisfied' is recoded as 5 (coded in such a way that high scores reflect high levels of satisfaction) while 'very dissatisfied' as 1 (detail on this recoding in subsequent sections). This nine-item measure of job satisfaction has a Cronbach's alpha[71] of 0.88 (shows items are internally consistent). Also, this alpha coefficient is consistent with previous studies as the range is between 0.85 and 0.90. In WERS, there is no overall job satisfaction question, which would have been useful for comparison purposes. Prior work on job satisfaction has mostly concentrated on using a composite measure of job satisfaction. However, studies like Skalli et al. (2008) considered five forms of job satisfaction from the European Community Household Panel (ECHP) with three of these measures similar to the forms of job satisfaction considered in this study. Wood (2008) utilised the previous wave of WERS but conducted PCA on the job satisfaction items. The primary advantage of exploring these forms of job satisfaction is that a particular workplace practice may have opposite effects on these forms of job satisfaction.

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[71] The Cronbach's alpha examines the reliability of a summative rating scale (sum of individual variables scores) that comprises of the variables specified.

6.3.2 Measures of Key Variables

This paper focuses on individualised workplace practices that promote employees' engagement atmosphere in the firm. These practices are reported at both employee (individual-level) and management (workplace-level) levels. This focus however is in comparison with collective forms of participation in decision-making and incentive schemes.

6.3.2.1 Individual Form of Participation in Decisions (Management level)

Individual employees' participation in decision-making is measured at the workplace level with the presence of suggestion schemes. Suggestion scheme that is one of the complementary measures through which management consult or inform employees is included in the model because it gives employees direct participation in decision-making. Suggestion schemes measure bottom-up communication through the provision of specific suggestions regarding areas of the workplace that needs improvement. This is the only consultation mechanism that we believe to be individual in nature among other consultation mechanisms reported in WERS2011. Wood and de Menezes (2011) argued that the opportunity for 'idea generation' and 'suggestion making' can increase personal control (in this context, personal control refers to perceived level of job control). Also, such mechanism for information sharing as well as employees having better understanding of the workplace's plans and initiatives and their role in the achievement of such initiatives may make their jobs feel more secured. So we expect a significant and positive relationship with job security satisfaction.

The invitation to be involved in the decision-making process of the workplace, which is associated with such scheme may signal respect for the employee and the fact that such contribution will be valued. As such, the meaningfulness of work is increased and employees tend to consider their work as opportunities to build a career. In sum, the effects may increase employees' pride and loyalty in their job and contribution to the success of their workplaces. Thus, we expect this form of participation in decision to be significantly and positively related to satisfaction with different aspects of the job.

Suggestion schemes and other means of consulting with employees are measured based on questions asking management about other means of communicating or

consulting with employees and they include: noticeboards, systematic use of management chain of information, suggestion schemes, regular newsletters distributed to all employees, regular use of email to all employees, information posted on company intranet accessible to all employees, any other means and no other means other than problem solving groups. All these means of employees' consultation apart from suggestion schemes are regarded as informative mechanisms rather than being consultative because these mechanisms suggest management's means of distributing information and not requesting opinions. A point to note is that we included all these 'seemingly' informative mechanisms so as to compare the effects of having a consultative mechanism with the presence informative mechanisms.

6.3.2.2 Individual Form of Participation in Decisions (Employee level)

Participation in decisions at employee level is measured based on employees' response ('a lot', 'some', 'a little', 'none') to five questions: how much influence over: 'the tasks you do in your job', 'the pace of work', 'how you do your work', 'the order of carrying out tasks' and 'the time you start or finish your working day' (cronbach's alpha =0.82). This variable is used to measure job control at employee level and we suggest that this will enhance employees' satisfaction with their immediate job roles. The availability of job control is a practice that enhances employees' decision-making capabilities regarding their jobs. The importance and inclusion of this predictor when examining various forms of job satisfaction is consistent with Wood (2008)'s study on employees' wellbeing in Britain. Wood and de Menezes (2011) termed job control as 'enriched jobs' by suggesting that employees are given the responsibility of managing and executing their tasks. Also, according to Kato and Morishima (2002), job control can be referred to as participation in decision-making at employee level because the influence over management and implementation of tasks involves decision-making.

6.3.2.3 Collective Participation in Decisions

Collective participation scheme is measured at the workplace level and it is a binary variable that explores the presence or absence of joint consultative committees (managers and employees committees) that are primarily concerned with consultation. Joint consultative committees offer more of diluted influence to employees and the influence in decision is collective in nature. That is, these

committees offer indirect means of participation as employee or their representatives are allowed to 'voice' their grievances, dissatisfactions and react to management's plans and initiatives. Thus, if it is a collective and diluted form of participation, we expect individual forms of employees' participation in decisions to be more significant in predicting different forms of job satisfaction when compared to collective firms of participation in decision such as joint consultative committees.

Suggestion schemes as well as the joint consultative committees can be suggested to partly serve as a 'voice' mechanism for employees. Based on this suggestion, we also controlled for other measures of employee's voice as suggested by Wood and de Menezes (2011) and they include: unions and grievance procedure. We expect that employees whose workplaces are receptive to employee's voice have higher levels of job satisfaction. Employees' voice may enhance employees' perception that their grievances will be heard and their views being valued. Karasek and Theorell (1990) also argued that unions serve as providers of social support.

6.3.2.4 Individual and Collective Incentive Schemes

In line with the discussion of the utility theory, individuals are argued to have utility from wage. By exploring the utility function in examining job satisfaction of workers, we argue that the use of appropriate incentive structure in the firm to reward individuals for performance is very important. We expect that the use of individual pay that individually rewards employees for performance and/or contribution to the success of the firm will positively influence job satisfaction when compared with collective forms of incentives. Individual incentive pay is measured by examining the effect of merit pay (workplace-level variable) on job satisfaction. This is a binary variable that takes the value of one when employees receive merit pay and zero when employees receive 'payments by results' or 'neither' of both types of pay.

Also, the types of pay received as reported at employee level is also controlled for by using employees' response to the type of pay received: 'Basic pay', 'payments based on your individual performance', payments based on the overall performance of a group or a team', 'payments based on the overall performance of the workplace or organisation', 'extra payments for additional hours of work or overtime', 'contributions to pension scheme'. These are all binary variables. Different types of pay received are included so as to examine the effect of being rewarded for

individual performance in comparison to being part of a valuable and cooperative workplace by sharing in the successes and failures of workplaces and in turn breeds team member relationship in the workplace. With our focus on individual incentives, we argue that the motivational supports associated with these incentives have independent effects because they enhance employees' sense of being valued and appreciated. Also, the perception of equality may be enhanced since these types of incentives are used to reward individual output or performance. In line with the perception of equality, we expect individual incentives to enhance pay satisfaction. Moreover, we will expect the effects of individual incentives to be largely interactional with the presence of suggestion schemes if such incentives and suggestion schemes are complementary in nature.

6.3.2.5 Measures of Fairness

As a result of the issue of equality associated with the use of incentives, it is appropriate to examine the effect of the presence of equality plan in the workplace. This is measured by including a workplace level binary variable (takes the value of 1 for firms with EO policies and 0 otherwise). In line with measuring the effect of fairness, the right for employees to appeal against a decision made under the grievance procedure is also accounted for in assessing fairness within the workplace. This is scaled as a dummy variable assessing the presence or absence of such right.

6.3.3 Other variables

6.3.3.1 The Types of Managers

As in the study of Wood (2008) and Wood de Menezes (2011), management styles (supportive, informative and consultative management) have been argued to be important involvement practices that may increase job satisfaction. As such, we expect such styles to facilitate employees' participation and involvement. Supportive management style can be linked to Johnson and Hall's (1988) study that extended the demand-control model to include social support as well as other studies that have examined social support as an important psychosocial resource in the context of the 'Michigan model'. We will be examining the importance of social support (supportive management) that relates to interpersonal relationships between mangers/supervisors and employees. This type of support from managers and other practices such as consultative and informative management have been examined as

the impact of management style on job satisfaction. Some studies that have been reviewed have investigated this factor as co-workers' support and/or supervisors' support. We will investigate this factor by considering employees' perception about the supportive nature of their managers over a range of issues and we expect that this will have a significant independent effect on satisfaction levels associated with different aspects of the job. Social support in the firm is measured by the extent of support provided by managers. Employees were asked about the extent of agreement with the following statements: 'managers in the workplace can be relied upon to keep their promises', 'managers are sincere in attempting to understand employees' views', 'managers deal with employees honestly', 'managers understand about employees having to meet responsibilities outside work', 'managers encourage people to develop their skills', managers treat employees fairly'. The measure is aimed at measuring managers' demonstration of concern for employees' needs.

 Apart from supportive managers, informative, and consultative types of managers are also examined. Studies such as Cox et al. (2009), Cox et al. (2006) and Wood (2008) suggested the importance of controlling for employees perceptions about the effectiveness of managers in implementing consultation processes, providing support as well as information about different aspects of the workplace. Wood and de Menezes (2011) argued that with managers being less secretive about changes in the workplace, employees' sense of value and worth are enhanced and this in turn enhances job satisfaction. Also, the presence of informative management facilitates employees' involvement. That is, employees are able to make accurate decisions about their job when they are fully informed about workplace activities. Takeuchi et al. (2009) also provided support for controlling for the type of organisational climate prevalent. They suggested that concern for employees by providing support, information as well as consulting with them provides a sense that the workplace cares about its employees. We argue that these predictors that measure different management styles will affect the way employees view the workplace and influence their satisfaction with different facets of the job.

Informative management is measured by asking employees about the extent management shares information regarding the way firm is run, changes in staffing, changes in the way the job is done and financial matters (on a response scale from very good to very poor). This provision of information regarding workplace activities may facilitate trust.

Consultative managers on the other hand are measured by employees responding (from very good to very poor) to how good managers are in: 'seeking the views of employees or employees' representatives', 'responding to suggestions from employees or employees' representative' and 'allowing employees or representatives to influence final decisions'. This sort of managerial style is suggested to facilitate 'attitudinal restructuring' (Cox et al., 2006).

In sum, we argue that these management styles will enhance employees' sense of personal control as well as employees' feelings of loyalty.

6.3.3.2 Perception of Secure Job

Job insecurity is one major disadvantage of labour trade as any employee can be replaced for a price in view of ensuring economic efficiency. Job insecurity that is referred to as subjective assessment of one's employment stability has been argued to be a consequence of events such as organisational restructuring/redesign (Probst, 2005). Organisational redesign that takes the form of mergers and acquisition, downsizing and firm closures may be as a result of government deregulation and rapid changes in technology. Moreover, Origo and Pagani (2009) suggested that employment stability is one of the most important predictors of job satisfaction and as such should be taken in to account in the analysis of job satisfaction.

Karasek and Theorell (1990) found that it is instability or uncertainty in the workplace that affects the mental health of individuals on the job and not the unemployment rate. That is, the threat of becoming unemployed affects employees and this in turn makes individuals on the job competitors. In such situations, they gradually lose their sense of control and this result in strain. Caroli and Godard (2014) also emphasised the importance of job insecurity as a major determinant of employees' wellbeing. While we do not examine employee's strain in this chapter, we are expecting that the inclusion of a variable measuring a secure job in our model would improve the outcome variable (job satisfaction). Therefore, we expect a positive relationship between overall job satisfaction and perception of a secure job. We also expect that the perception of a secure job will be positively related to satisfactions with different facets of the job.

Employees' perception of a secure job is included as an explanatory variable. This is measured by employees' response (from strongly agree to strongly disagree) to the statement: 'I feel my job is secure in this workplace'. We expect that job security

serves as a medium of assurance that suggestions given by employees to improve firm performance will not be used in ways that will be a detriment to their long term prospects or result in job losses. As such the perception of a secure job is expected to be associated with higher levels of satisfaction with different facets of the job.

6.3.4 Employee-Level Controls

In order to avoid omitted variable bias, we explored the richness of the data by using information on job characteristics (job demand) as well as employees' characteristics such as intrinsic motivation, socio-demographic factors, union membership. Also, a well-established fact is the level of correlation between job demand and the presence of engagement practices that in turn influences job satisfaction. Thus, it is important to control for job demand and such inclusion in the model mitigates omitted variable bias as well as unobserved heterogeneity.

Job demand' measure explores work intensity, work overload and timing issues. It is based on employees' response (from strongly disagree to strongly agree recoded) to 3 questions: 'my job requires I work very hard', 'I never seem to have enough time to get my work done' and I often find it difficult to fulfil my commitments outside of work because of the amount of time I spend on my job' respectively.

Intrinsic motivation is controlled for using employees' response (from strongly agree to strongly disagree) to these questions: 'using my own initiative I carry out tasks that are not required as part of my job', 'I share many values of my organisation', 'I feel loyal to my organisation' and 'I am proud to tell people who I work for'.

Union membership: an indirect means of consultation and it is measured based on three categories: Not a member (the reference category), have been a member and a member.

Supervisor: a binary variable coded as 1 if employee is a supervisor and 0 if otherwise.

Gender: abinary variable that is coded as 1 for male and 0 for female

Age: this is measured based on three binary variables indicating employees in different age groups; 16-29, 30-49 and 50 and above. 16-29 age group serves as the reference category.

Marital status: four binary variables that indicate: single, married, widowed and divorced (reference category is single).

Qualifications: seventeen binary variables (GCSEs, university degrees, NVQs, apprenticeship, no vocational and academic qualifications and other professional, academic and vocational qualifications) and the reference category is GCSE grade D-G.

Job tenure: five binary variables that indicate duration at workplace: <1 year, 1-<2, 2-<5, 5-<10 and 10 and more years (<1 year is reference category).

Contract status: three binary variables indicating: permanent, fixed and temporary (permanent is reference category).

Ethnicity: a binary variable coded as 1 for white ethnic background and 0 for other ethnicities

Religion: a binary variable coded as 1 for employees with no religion and 0 for those with religion.

Sexual orientation: binary variable coded as 1 for heterosexual employees and 0 for other orientations

We expect that these control variables, especially in the case of educational qualifications, will in a way influence employees' formation of expectations and choices regarding the workplace. An explanation for this proposition is that job satisfaction that is employee's assessment of the value of monetary and non-monetary gains from the job is based on personal preferences and expectations. For example, more educated employees are suggested to have more accurate expectations and pursue their aspirations more effectively than less educated employees (Vila and García-Mora, 2005). Due to the investigation of different forms of job satisfaction, we expect that the influence of these control variables can be different both in size and direction.

6.3.5 Workplace-Level Controls

Organisational size: three binary variables indicate different organisational sizes (total number of employees) and the reference category is 5-999 employees. Others are: 1000-9999 employees and 10,000 or more employees.

Industry: seventeen binary variables indicate different industries with manufacturing as the reference category.

Public sector: A binary variable coded as 1 for public sector and zero for private sector. Vila and García-Mora (2005) suggested that controlling for public sector may positively influence various forms of job satisfaction possibly due to less uncertainty regarding the job.

Grievance procedure: a binary variable that is coded as 1 for the presence of grievance procedure and 0 otherwise.

Occupational Categories

Occupational categories constitute different definitions of appropriate allocation of control in the workplace and this will affect employees' satisfaction with various aspects of the job. These categories are based on the National Statistics Socio-Economic Classification (NS-SEC). We suggest that the level of satisfaction with various facets of the job will vary across different occupational categories. An explanation for this is that employees in different occupational categories occupy different work situations (different locations in systems of control and authority) and their reactions to job characteristics would be different.

According to the Office for National Statistics (ONS), the occupational categories include: higher managerial and professional occupations (class 1), lower managerial and professional occupations (class 2), intermediate occupations (class 3), lower supervisory and technical occupations (class 5), semi-routine occupations (class 6) and routine occupations (class 7). Small employers and own account (class 4) workers were not included in the survey probably because they do not meet the specifications of the survey. These categories distinguish different positions based on employees' regulation through employment contract. On ONS' website, three forms of employment regulations that summarize these occupational categories are highlighted:

Service relationships: the employee exerts effort in favour of the employer and expects to be rewarded in return. This compensation could either be immediate in the form of salary, bonuses or long-term (job security). This sort of relationship describes class 1 and its weaker form in class 2

Labour contract: the amount of labour offered by the employee is distinct and remuneration is calculated based on the amount of work done. This type of contract typifies class 7 and its weaker form in class 5 and 6

Intermediate: this combines aspects from service relationships and labour contract and it is typical of class 3.

For this analysis, we use three dummy variables as controls for occupational categories by recoding the NS-SEC variable. The higher and lower managerial & professional occupations were combined as one occupational category (managerial category); intermediate occupational category remained the same (intermediate category); lower supervisory and technical occupations, semi-routine occupations and routine occupations were recoded as one occupational category (lower category).

The use of workplace level variables (explanatory and control variables) rules out the use of workplace fixed effects.

Sample weight

Finally, a weight is applied to the model and this reflects the group of employees to whom a specific characteristic associated with a workplace pertains to. We estimate weighted models because the surveys are based on stratified samples and the sampling fractions tend to vary across the strata of the sampling matrix. Also, since employee questionnaires were distributed to a maximum of 25 employees, employees in smaller workplaces are over represented in the Employee survey (questionnaires were handed to all employees in workplaces with 5-25 employees). Furthermore, varying rates of non-response can cause the achieved sample to depart from the population it intends to represent. It is important to apply weights when using WERS series because the nature of the achieved workplaces and employees' samples are brought in line with the profiles of the respective populations. Thus, known biases as a result of sample selection and response processes are removed (WERS, 2011).

6.4 Data

The main hypotheses outlined above are tested using the management and employee surveys within the sixth wave of WERS. Since the first wave in 1980, WERS provides a comprehensive and statistically reliable dataset that maps and measures employment relations in Britain as well as inform policy development and practice. This survey is jointly sponsored by the UK's Department of Trade and Industry, Economic and Social Research Council, Policy Studies Institute, and Advisory, Conciliation and Arbitration Service.

This dataset is larger than previous surveys as it covers a representative sample of about 2,600 workplaces in Britain with at least five employees (a workplace is defined as consisting of a 'single employer at a single set of premises'). These workplaces operate under sections C-S of the Standard Industrial Classification. The fieldwork for this sixth wave took place between March 2011 and June 2012. Information is collected on the workplace through an interview with the most senior manager in charge of personnel, employment relations or human resource activities who is also asked for permission in order to distribute a twelve-page self-completion questionnaire to employees. If there were 25 or fewer employees in the workplace, all were given the questionnaire. In larger workplaces, a maximum of twenty-five employees were selected at random to participate.

Meaningful information on workplaces was obtained from 2,680 workplaces out of 7,134 workplaces, thereby, generating a response rate of 38%. 19% of the workplaces proved to be ineligible while 44% of the eligible ones chose not to participate in the survey, thus, generating an overall response rate of 46%. Employee questionnaires were distributed in 81% of the workplaces where management interview took place. A total of 21,981 questionnaires were returned out of 40,513 questionnaires distributed and this accounts for 50% response rate. In merging the employee and management surveys, we discovered that 757 workplaces were not associated with employee data and these workplaces were excluded from the sample. Overall, the final sample consists of 1,923 workplaces with 21,981 observations. This sixth survey provides detailed information on employee's relationship with management, job satisfaction, motivation issues, consultation procedures and mechanisms, incentive schemes, fair treatment at work, workplace characteristics and employee characteristics. The panel survey of WERS was not used because the

observations are quite small and information on the key aspects of this research are not readily available.

6.4.1 Our Sample

In conducting our analyses, we made some alterations to the sample in order to obtain our feasible sample. In achieving this aim, all observations with missing cases in the dependent variables (nine forms of job satisfaction) are dropped from the dependent variables. 222 observations (1%)[72] with missing values are dropped from 'satisfaction with achievement variable', 95 observations (0.43%) are dropped from 'satisfaction with initiative variable', 177 missing cases (0.80%) are dropped from 'satisfaction with influence variable', 185 observations (0.84%) are dropped from 'satisfaction with training variable', 70 observations (0.32%) are dropped from 'satisfaction with skills variable', 75 observations (0.34%) are dropped from 'satisfaction with pay variable', 443 observations (2%) are dropped from 'satisfaction with job security variable', 48 observations (0.22%) are dropped from 'satisfaction with work variable' and 70 observations (0.32%) are dropped from 'satisfaction with involvement in decision-making variable'. The successful deletion of these missing cases gives us a total sample size of 20,596. The percentage of missing cases dropped reveal that the variation of non-responses is similar across types of job satisfaction.

6.5   Descriptive Analysis

Gender distributions of employees' responses to categories of different forms of job satisfaction are presented in table 6.1. The statistics show that higher proportion of female employees report satisfaction with different aspects of the job. This supports findings in literature (Clark, 1996; Clark; 1997). However, one thing to note about WERS 2011 is that the survey is dominated by female employees and this may have impacted on the statistics. First findings on 2011 WERS by van Wanrooy et al. (2013) showed that 51% of employees are females and they constitute more than half of all employees in 52% of workplaces. This higher proportion of women may be as a result of men leaving their jobs in response to changes associated with the recession such as wage cuts or freezes, reduction in non-wage benefits, increases in workload. Further, van Wanrooy et al. (2013) also suggested that women (among

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[72] These percentages are based on the total number of observations obtained from the merged workplace and employee surveys – 21,981 observations.

those who remain at their workplaces) are less likely than men to experience a change at work as a result of the recession. That is, men are more likely than women to have their wages frozen or cut as a result of the recession. Thus, an explanation for the statistics of women reporting various forms of job satisfaction may be that they are not really affected by the changes that occurred at work as a result of the recession.

Also, table 6.1 shows that; while the percentage of 'dissatisfied' female employees is higher than men, the percentage of 'very dissatisfied' male employees is greater than that of females except in the case of pay satisfaction where the opposite is the case.

Table 6.1: Gender Distribution and Various Forms of Job satisfaction

Satisfaction with:	Achievement		Initiative		Influence	
	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Very Dissatisfied	47.44	52.56	44.75	55.25	44.79	55.21
Dissatisfied	51.16	48.84	53.12	46.88	53.78	46.22
Neutral	49.38	50.62	54.10	45.90	58.13	41.87
Satisfied	57.01	42.99	57.19	42.81	56.91	43.09
Very Satisfied	61.51	38.49	57.13	42.87	54.17	45.83

Satisfaction with:	Training		Skills		Pay	
	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Very Dissatisfied	43.13	56.87	43.64	56.36	52.26	47.74
Dissatisfied	54.90	45.10	55.99	44.01	58.00	42.00
Neutral	53.45	46.55	54.79	45.21	55.09	44.91
Satisfied	58.54	41.46	57.89	42.11	57.11	42.89
Very Satisfied	61.72	38.28	59.83	40.17	54.66	45.34

Satisfaction with:	Job security		Work itself		Involvement in Decision-making	
	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)
Very Dissatisfied	49.86	50.14	46.74	53.26	42.92	57.08
Dissatisfied	54.69	45.31	51.22	48.78	53.71	46.29
Neutral	56.62	43.38	49.79	50.21	59.17	40.83
Satisfied	56.97	43.03	57.33	42.67	56.17	43.83
Very Satisfied	57.52	42.48	60.82	39.18	55.36	44.64

Source: Author's computation based on WERS2011. The results should be read in a row-wise manner and the percentages are the proportion of employees out of the total workforce of 100%.

Descriptive statistics of some explanatory variables are presented in Table 6.2. There are about 42% of workplaces that use suggestion schemes. Considering other means of consulting that are informative in nature, 81% of workplaces use noticeboards, 61% of workplaces regularly distribute newsletters to employees, 71% of workplaces regularly use emails to employees, 65% of workplaces post information on company intranet, 76% of workplaces engage in systematic use of management chain of information, 30% use other ways of communication and 1% of workplaces have none of these consultation mechanisms.

Further, the sample reveals more than 40% of employees on average report that managers inform them about changes in the operations of the workplace, changes in staffing, changes in the way work is done and financial matters at levels 4 ('good') or 5 ('very good'). Also, more than 30% of employees report at levels 4 ('good') or 5 ('very good) that managers tend to seek their views and respond to suggestions while more than 80% of employees report at levels 3('neutral') or 4 ('good') that managers allow them to influence final decisions. On average, the distribution of supportive managers within the sample shows that about 30% of employees report at levels 4 ('agree') or 5 ('strongly agree') that managers are supportive in different ways. For intrinsic motivation, more than 70% of employees tend to agree that they are intrinsically inclined with their jobs.

Table 6.2: Descriptive Statistics (Some Explanatory Variables)

	Mean	Standard Deviation	Minimum	Maximum
Informative Management				
Operations	3.43	1.13	1	5
Staffing	3.31	1.13	1	5
Sequence	3.41	1.05	1	5
Finance	3.21	1.16	1	5
Consultative Management				
Views of employees	3.28	1.14	1	5
Response to suggestions	3.18	1.12	1	5
Influence of employees	2.94	1.11	1	5
Supportive Management				
Keep promises	3.29	1.06	1	5
Sincere	3.40	1.06	1	5
Honest	3.44	1.04	1	5
Understanding	3.54	1.01	1	5
Encouraging	3.51	1.03	1	5
Treat fairly	3.44	1.10	1	5
Intrinsic motivation				
Using initiative	3.81	0.89	1	5
Value sharing	3.73	0.86	1	5
Loyal	3.90	0.91	1	5
Proud	3.82	0.99	1	5
Consultation Schemes				
Suggestion scheme	0.42	0.49	0	1
Notice Boards	0.81	0.39	0	1
Cascade	0.76	0.43	0	1
Newsletters	0.61	0.49	0	1
Email	0.71	0.45	0	1
Intranet	0.65	0.48	0	1
Other	0.30	0.46	0	1
None	0.01	0.10	0	1

	Mean	Standard Deviation	Minimum	Maximum
Joint consultative committees	0.44	0.50	0	1
Merit Pay	0.28	0.45	0	1
Types of Pay				
Basic pay	0.95	0.22	0	1
Individual pay	0.10	0.20	0	1
Group pay	0.05	0.22	0	1
Workplace pay	0.07	0.26	0	1
Extra pay	0.31	0.46	0	1
Pension	0.44	0.50	0	1
Public sector	0.38	0.49	0	1
Occupational Categories				
Managerial category	0.32	0.47	0	1
Intermediate category	0.28	0.45	0	1
Lower category	0.40	0.49	0	1
Measures of fairness				
Appeal right	0.98	0.14	0	1
EO policies	0.94	0.23	0	1
Voice mechanisms				
Grievance procedure	0.99	0.12	0	1
Union Membership				
A union member	0.37	0.48	0	1
Have been a union member in in the past	0.17	0.37	0	1
Not a union member	0.46	0.50	0	1

Notes: Author's computation based on WERS 2011

Moreover, Table 6.2 shows that 44% of workplaces have committees of managers and employees that are concerned with consultation rather than negotiation. 10% of employees receive pay based on individual performance while 7% receive pay based on workplace performance (such as profit-sharing scheme). Further, 44% of employees receive contributions made to a pension scheme while 95% of employees receive basic fixed salary.

Regarding the presence of equal treatment in the workplace, table 6.2 shows that 94% of workplaces have EO policies while 98% of workplaces allow employees to appeal against a decision made under the grievance procedure (99% of workplaces have a formal procedure for dealing with individual grievances). Within the sample, there are about one-third of employees who are union members. The distribution of occupational categories reveals 32% of employees occupy managerial category, 28% occupy intermediate while 40% of employees occupy lower occupational category.

6.6   Empirical Strategy

Empirical analysis is conducted individually for satisfaction with each facet of the job and in sum makes nine equations for job satisfaction. Apart from analysing various forms of job satisfaction, each dimension of a predictor is estimated individually as they relate to different types or aspects of the predictor. SURE was not conducted because of the nature of dependent variable. SURE is an OLS estimation method, which allows for cross-equation correlations.

6.6.1 Estimation Technique

We considered the use of ordered logit models as the response variables originally had five categories but one of the assumptions underlying the ordered logit estimation is violated. This assumption is the parallel regression assumption (equidistance assumption) and it states that the relationship between each pair of outcome categories is the same. This assumption underlies ordered logistic regression and that is why there is only one set of coefficients (only one model). The likelihood-ratio test (the null hypothesis is that the coefficients that describe the relationship between each pair of categories is the same) showed that the coefficients that describe the relationship between the lowest versus all higher categories of the outcome variable for example are not the same as those that describe the relationship between the second lowest and all higher categories.

As a result of the rejection of this assumption even after recoding the response variable into three categories, we recoded the response variables into binary variables based on the response to these questions. We tested three categories because in some instances, the assumption may not be violated when the dependent variable has three categories. For satisfaction with achievement, initiative, influence and the work itself, the binary variables are coded as 1 when employees are very satisfied and satisfied and 0 when neutral, dissatisfied, and very dissatisfied. For satisfaction with training, skills, pay, job security and involvement in decision-making, the binary variables are coded as 1 when employees are very satisfied, satisfied and neutral and 0 when dissatisfied and very dissatisfied. Thus, the use of binary models (logit models). We use the logit models to capture how the predictors relate to employees being satisfied or dissatisfied. Thus, we test whether or not an employee is satisfied and each response variable takes the value of 0 and 1:

$$y = \begin{cases} 0 \; if \; dissatisfied \\ 1 \; if \; satisfied \end{cases}$$

Considering a linear model:

$$y = \boldsymbol{X}'_i\beta + e \tag{6.2}$$

Binary outcome models like the logit model estimate the probability of success ($y = 1$) as a function of explanatory and control variables. The predicted probabilities are limited between 0 and 1

$$p = pr(y = 1|X) = F(X'\beta) \tag{6.3}$$

Where the functional form of $F(X'\beta)$ that is the cumulative distribution function of the logit distribution can be represented as:

$$F(X'\beta) = {e^{X'\beta}}\Big/{1 + e^{X'\beta}} = {\exp X'\beta}\Big/{1 + \exp X'\beta} \tag{6.4}$$

Logit distribution is similar to normal distribution except that logit distribution has fatter tails. Thus, when $\boldsymbol{X}'_i\beta$ is very small, the logit distribution tends to give larger probabilities to $y = 1$ and vice versa (Greene, 2012). Logit models are estimated by maximum likelihood. This estimation method treats each observation as a single draw from a Bernoulli distribution. The model with success probability ($F(X'\beta)$) and independent observations results in a likelihood function that can be written as:

$$L(\beta|data) = \prod_i^n \langle F(X'\beta)\rangle^{y_i} \langle 1 - F(X'\beta)\rangle^{1-y_i} \tag{6.5}$$

where n is the number of observations.

The next sub-section outlines our analysis of the potential endogenous nature of union membership. We consider a potential endogeneity problem because job satisfaction and union membership are employee-level variables.

6.6.2 Endogeneity Analysis

As a result of the negative association of union membership with job satisfaction shown by some studies reviewed in this study (Bryson et al., 2004; Borjas, 1979), which may be due to unobserved factors co-determining union membership and job satisfaction, we test the endogenous nature of union membership. In order to test and overcome the potential endogeneity problems associated with union membership – a binary measure – we estimate a recursive simultaneous bivariate probit model

(Greene, 2012). That is, we estimate the effect of union membership on job satisfaction while simultaneously estimating union membership equation with the use of instrumental variables. Thus, the bias as a result of unobserved heterogeneity is removed because we are able to control for unobserved correlation between union membership and job satisfaction. This can be represented as:

$$U^* = X_1'\beta_1 + \varepsilon_1 \qquad U = 1 \; if \; U^* > 0, and \; 0 \; otherwise$$

$$y^* = X_2'\beta_2 + \gamma U + \varepsilon_2 \qquad y = 1 \; if \; y^* > 0, and \; 0 \; otherwise,$$

$$\left(\begin{smallmatrix} \varepsilon_1 \\ \varepsilon_2 \end{smallmatrix} \middle| X_1 \; X_2 \right) \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right].$$

Where X_1 is the instrumental variable and it is correlated with union membership. X_2 represents explanatory variables of the job satisfaction equation. This model shows some of the characteristics of the bivariate model but it is qualitatively different from it. It is different in the sense that the binary endogenous variable U, appears on the right hand side of the second equation. U that is union membership, is a binary variable and it is instrumented by dispute over pay and working conditions. The intuition behind the use of this instrument is that employees are likely to join unions possibly as a result of dispute over pay and working conditions. The test of the validity of this instrument is done using tetrachoric correlation technique. This technique computes pairwise estimates of tetrachoric correlations of the binary variables (instrumental and endogenous explanatory variables) using maximum likelihood estimator. The significant correlation result confirmed the validity of the instrument. The endogeneity analysis in this chapter will also cover any endogeneity problem with unionization in the subsequent empirical chapter because we are using the same variables but the main aims of the chapters are different. Before reporting the endogeneity results, we outline main results of the job satisfaction equations where we did not account for endogeneity.

6.7   Empirical Results

Nine main effects models with a rich set of control variables are reported with corresponding interaction effects models. Each of these models uses full data sample of 20,596 employees. Most of the results obtained on the predictors are significant and this significance cuts across all forms of job satisfaction. The likelihood ratio chi-square with its corresponding p-value shows that each model as a whole is statistically significant when compared to the null model of no predictors. Missing

values in the regressors are treated using the 'Dummy Variable Adjustment' strategy. This strategy is such that the missing value in the original variable is replaced with a value of zero and a dummy variable that takes the value of 1 if data in the original variable is missing and zero otherwise is included in the regression.

6.7.1 Individual Forms of Participation in Decisions at Workplace Level and Employee Level, and Perception of Secure Job

Table 6.3 shows that job control (measure of individual form of participation in decisions at employee level) is an important predictor of various forms of job satisfaction. We find that control over tasks, how task is done and working time are strong predictors of satisfaction across several aspects of the job. The positive association supports the proposition of the demand-control model and also corroborates the findings of Wood (2008), De Witte et al. (2007), Noblet et al. (2006), Bartling et al. (2012), Wood and de Menezes (2011) and Mikkelsen et al. (1999) who all found autonomy and control to be related to job satisfaction. Examining wellbeing because policies that increase wellbeing are important for workplaces, Robinson and Smallman (2006) found that workplace injuries and poor health status are reduced when employees have control over the pace of work. The results obtained on the job control variable also support the suggestion that employee-level measures are important predictors of job satisfaction as found in the study by Morrison et al. (2003). With our findings corroborating the long standing job design tradition, job control is suggested to be a key predictor of job satisfaction.

Considering measures of participation in decisions reported at workplace-level, the use of suggestion schemes as a means of consulting with employees is positively and significantly related to satisfaction with influence, training, skills, pay and job security. These positive associations with satisfaction with influence, skills, pay and job security were evident when interactions are added to the model. This suggests that the effect of suggestion schemes on some forms of job satisfaction depends on use of merit pay or/and the presence of EO policies. These findings corroborate Van Der Westhuizen et al.'s (2012) findings on the relationship between participation in decision-making and job satisfaction. Also, this finding regarding suggestion schemes provides an extension of Mohr and Zoghi (2008) findings of suggestion programs being positively associated with job satisfaction.

Table 6.3: Participation in Decisions, Perception of Secure Job and Job Satisfaction

	Satisfaction With:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job Security	Work	Involvement in Decision
Individual form of participation in decisions at employee level									
Over tasks	0.318***	0.454***	0.685***	0.028	0.117***	0.049**	0.051	0.227***	0.145***
	(0.028)	(0.028)	(0.028)	(0.030)	(0.031)	(0.024)	(0.039)	(0.028)	(0.034)
Over pace	0.050*	0.021	0.107***	0.016	0.008	0.058**	0.060	0.042	0.054*
	(0.027)	(0.027)	(0.025)	(0.028)	(0.029)	(0.023)	(0.037)	(0.027)	(0.032)
On How to do task	0.173***	0.376***	0.330***	0.060*	0.144***	-0.011	0.051	0.199***	0.062
	(0.034)	(0.035)	(0.034)	(0.036)	(0.037)	(0.030)	(0.048)	(0.034)	(0.041)
Over Order of task	0.055*	0.250***	0.227***	0.054	0.012	-0.026	0.005	-0.007	0.130***
	(0.031)	(0.031)	(0.031)	(0.033)	(0.034)	(0.027)	(0.045)	(0.031)	(0.037)
Over Working Time	0.047**	0.059***	0.171***	0.075***	0.086***	0.089***	-0.001	-0.014	-0.024
	(0.019)	(0.020)	(0.018)	(0.020)	(0.021)	(0.016)	(0.027)	(0.019)	(0.023)
Individual forms of participation in decisions at management level (ref: none)									
Suggestion	0.013	0.014	0.069	0.147***	0.069	0.014	0.094	-0.009	0.015
	(0.044)	(0.046)	(0.042)	(0.047)	(0.048)	(0.036)	(0.061)	(0.043)	(0.053)
Notice Boards	0.010	-0.032	-0.004	0.142**	-0.036	-0.167***	-0.106	-0.008	-0.110
	(0.055)	(0.058)	(0.052)	(0.056)	(0.060)	(0.046)	(0.076)	(0.054)	(0.067)
Cascade	0.016	0.057	0.027	-0.003	-0.162***	0.010	-0.025	0.057	-0.028
	(0.050)	(0.052)	(0.047)	(0.053)	(0.056)	(0.041)	(0.071)	(0.049)	(0.061)
Newsletters	-0.029	0.017	0.013	-0.046	-0.013	-0.033	0.085	-0.043	0.019
	(0.047)	(0.049)	(0.044)	(0.049)	(0.051)	(0.039)	(0.065)	(0.047)	(0.057)
Email	-0.000	-0.024	-0.073	-0.083	-0.006	0.081*	-0.104	-0.034	0.042
	(0.056)	(0.058)	(0.053)	(0.060)	(0.062)	(0.045)	(0.080)	(0.056)	(0.068)
Intranet	-0.059	-0.019	-0.014	0.121**	0.058	0.041	-0.057	-0.046	-0.063
	(0.052)	(0.054)	(0.049)	(0.054)	(0.056)	(0.042)	(0.072)	(0.051)	(0.062)
Other	-0.008	-0.002	0.006	-0.005	-0.028	-0.020	-0.025	0.059	-0.035
	(0.043)	(0.045)	(0.041)	(0.046)	(0.047)	(0.036)	(0.060)	(0.043)	(0.052)
Collective form of participation in decisions	0.029	-0.013	-0.061	-0.048	-0.033	0.009	-0.091	-0.008	-0.036
	(0.044)	(0.045)	(0.041)	(0.045)	(0.047)	(0.036)	(0.060)	(0.043)	(0.052)
Secure job	0.141***	0.129***	0.198***	0.198***	0.232***	0.138***	2.354***	0.189***	0.109***
	(0.020)	(0.021)	(0.019)	(0.020)	(0.021)	(0.017)	(0.040)	(0.019)	(0.023)

	Satisfaction With:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job Security**	**Work**	**Involvement in Decision**
Employee-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Workplace-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: Results from the main effects models are presented here. A detailed table of results where the main, two-way interaction and three-way interaction effects models are presented side-by side is included in the appendix (Tables A.2, A.3, A.4). Coefficients are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$ and standard errors are in parenthesis.

Table 6.4: Bonferroni Correction for Multiple Testing

Bonferroni Comparison of Satisfaction with Achievement by Consultation Schemes

	Difference between the presence and absence of each consultation mechanism	Bonferroni-adjusted significance of the difference
Suggestion schemes	-0.037916	0.000
Noticeboards	-0.030975	0.000
Cascading of information	-0.009903	0.164
Newsletters	-0.038712	0.000
Emails	0.015267	0.024
Intranet	-0.036956	0.000
Other ways of communicating	-0.003398	0.607

Note: We conducted the Bonferroni correction for multiple testing because few of the consultation mechanisms are significant.

As shown in table 6.3, the findings supports hypothesis 1 and the results also show that the effects of job demand are minimal and even positive. The measures of job demand show significant and negative association with all forms of job satisfaction (except work intensity) at 1%, 5% and 10% significance levels respectively (see tables A.2, A.3 and A.4). The negative signs are expected but contrary to expectations, we found a positive association between work intensity and some forms of job satisfaction. The work intensity result in a way corroborates previous studies on 'workplace learning' (Weststar, 2009; Ouweneel et al., 2008; De Witte et al., 2007; Dollard et al., 2000). The presence of job control as well as guarantee of a secure job has been suggested to provide means of handling job demand appropriately and could be in form of active coping strategies (Söderfeldt et al., 2000); thereby eliminating the detrimental effects of job demand on job satisfaction. Another reason could be that employees enjoy working hard (measure of work intensity) because they are allowed influence decisions and take initiatives regarding their work and the workplace in general. Such influence and participation in decision-making that have been suggested by scholars such as Mohr and Zoghi (2008) and Ramsey et al. (2000) to be associated with increased work intensity and

stress may be viewed as good cause to work hard. Moreover, in theory, such delegation of authority to employees are to facilitate a better working environment and not necessarily for employees to work harder.

Also, the sort of motivation that drives the employee, which could be intrinsic may have influenced the work intensity finding. Intrinsically motivated employees will view high level of job demand as an opportunity to provide solutions and improve their skills. Results (see Tables A.2, A.3, A.4) show that the intrinsic motivation is an important predictor of job satisfaction. The results reveal that when an employee is proud and feels loyal to an organisation; he/she is more likely to be satisfied with different forms of job satisfaction. Thus, hypothesis 1(a) is supported.

The positive relation of suggestion schemes with job security satisfaction corroborates the findings of Pencavel et al. (2006) and Burdín and Dean (2009) who suggested that employees do not face employment reductions when they have greater voice (that is, when employees have ultimate form of participation in governance of the workplace). The effect of such perception of employment stability is tested in our model and results revealed that when the level of job uncertainty as perceived by employees is low, employees are more likely to be satisfied with all aspects of the job investigated. This supported the findings of: McClenahan et al. (2007) as job insecurity was found to affect job satisfaction and Karasek and Theorell (1990), suggesting that job insecurity affects the mental health of employees. This finding on the effect of job security further supports the idea of Origo and Pagani (2009) who found that employees are less satisfied with work when perceived job security is low and this is independent of the type of contract.

However, the presence of joint consultative committees is not significantly related to any form of satisfaction. A possible explanation may be that employee-members of such committees are not representative of the individual interest of all employees in the workplace; thus, resulting in non-significance. These committees may offer diluted influence to employees. Also, another reason for the non-significance could be that such committees are 'bogus consultative committees' as they are more of being informative than consultative in reality. This extends the findings of Cox et al. (2006) of the non-significance of indirect forms of employees' participation and involvement on job satisfaction.

6.7.2 Individual and Collective Incentive Schemes and Equality plans

Table 6.4 shows that the use of merit pay as reported at workplace-level is negatively related to training satisfaction and positively related to satisfaction with involvement in decisions and pay (pay satisfaction: significant when interactions are added to the model). Also, pay based on individual performance (objective measures such as piece rates) is shown to be significantly and positively associated to satisfaction with achievement and negatively related to satisfaction with involvement in decision-making when compared to receiving basic wage. These findings corroborate previous studies (Lazear, 2000; Bender et al., 2010; Cornelissen et al., 2011) and support our second hypothesis in the sense that we expect employees to be more satisfied with their pay when they are individually evaluated and rewarded rather than being rewarded based on the overall performance of a group. Thus, the result supports the notion that individual incentive schemes motivates employees and do not necessarily crowd-out intrinsic motivation. Negative association of merit pay with training satisfaction is quite surprising because we expect that such incentive scheme will create awareness about the strengths and weakness of employees and as such, adequate training is provided where required. However, the awareness of employees' weaknesses if not properly handled may have a negative impact on their satisfaction with the training they receive.

In the same vein, the presence of profit sharing scheme significantly increases the likelihood of satisfaction with achievement and pay than receiving basic fixed wage. Further, the results revealed that an employee whose pay is based on teamwork is less likely to be satisfied with training received than those who receive basic fixed wage/salary. Also, employees who have a portion of their wages contributed towards a pension scheme (this may take the form of deferred employee benefit plan and it is similar to Employee Stock Ownership Plan) are more likely to be satisfied with pay than those who receive basic pay. These findings provide extensions of the ideas of Kato and Morishima (2002), MacDuffie (1995), Black and Lynch (2001), Perotin and Robinson (2000) by emphasising the importance of collective incentive schemes. However, merit pay is found to be a better predictor of various forms of job satisfaction.

By examining the effect of equal treatment in workplaces, Table 6.4 shows that the presence of EO policies significantly reduces the likelihood of satisfaction with achievement. This result is surprising but it in a way reinforces the idea of Hoque and Noon (2004) who described such policies as being 'empty shells'.

Table 6.5: Incentive Schemes, EO Policies and Job Satisfaction

	Satisfaction With:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job Security**	**Work**	**Involvement in Decision**
Individual Incentive pay									
Merit Pay	-0.016	0.012	-0.054	-0.098**	0.003	0.030	-0.070	-0.040	0.128**
	(0.046)	(0.048)	(0.044)	(0.048)	(0.050)	(0.039)	(0.065)	(0.046)	(0.056)
Types of Pay (ref: basic pay)									
Individual pay	0.156**	-0.065	-0.054	0.066	0.030	0.091	0.150	0.007	-0.149*
	(0.071)	(0.074)	(0.068)	(0.074)	(0.078)	(0.061)	(0.100)	(0.069)	(0.086)
Group pay	0.012	0.147	0.124	-0.184*	0.054	0.028	0.091	0.028	-0.099
	(0.096)	(0.104)	(0.092)	(0.098)	(0.107)	(0.084)	(0.142)	(0.094)	(0.120)
Workplace pay	0.182**	0.003	-0.055	-0.119	0.024	0.290***	-0.024	0.081	0.109
	(0.087)	(0.092)	(0.082)	(0.087)	(0.095)	(0.077)	(0.128)	(0.085)	(0.109)
Extra pay	0.126***	0.032	0.019	0.074	0.050	-0.027	0.099	0.195***	-0.039
	(0.046)	(0.047)	(0.043)	(0.049)	(0.050)	(0.038)	(0.065)	(0.046)	(0.055)
Pension (deferred payment schemes like ESOP)	-0.021	0.057	0.006	-0.056	-0.117**	0.207***	-0.037	0.025	-0.028
	(0.045)	(0.047)	(0.043)	(0.047)	(0.049)	(0.037)	(0.062)	(0.045)	(0.054)
Measure of fairness									
EO policies	-0.182*	0.029	-0.133	0.153	0.065	-0.114	-0.008	-0.023	-0.047
	(0.099)	(0.102)	(0.093)	(0.099)	(0.105)	(0.081)	(0.146)	(0.098)	(0.124)
Interactions									
Merit pay x suggestion scheme[a]	0.020	0.141	-0.102	-0.178*	-0.100	-0.277***	-0.135	-0.043	0.240**
	(0.087)	(0.091)	(0.083)	(0.091)	(0.095)	(0.073)	(0.123)	(0.086)	(0.106)
Merit pay x suggestion schemex EO policies[b]	0.025	0.145	-0.093	-0.190**	-0.113	-0.280***	-0.153	-0.028	0.247**
	(0.086)	(0.090)	(0.083)	(0.090)	(0.094)	(0.073)	(0.122)	(0.085)	(0.105)
Employee-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Workplace-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: Results from the main effects models are presented here. A detailed table of results where the main, two-way interaction and three-way interaction effects models are presented side-by side is included in the appendix (tables A.2, A.3, A.4). Coefficients are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$ and standard errors are in parentheses. [a]This represents the interaction effect results from the two-way interaction effects models while [b] shows the interaction effect results from the three-way interaction effects models.

6.7.3 Joint Effects of Merit Pay and Suggestion Schemes in Workplaces With and Without Equality Plans (Two-way and Three-way Interaction Effects)

Testing the hypothesized interactions, we used merit pay as the measure of individual incentive scheme and not pay based on individual performance. The reason is that the frequency of the joint presence of individual pay and suggestion scheme is very small (approximately 5%) and this will make the interactions to be non-significant in the model (table A.1 for descriptive statistics). However, the frequency of the joint presence of merit pay and suggestion schemes is larger. Table 6.4 shows that the joint presence of merit pay and participation in decision through suggestion schemes significantly increases the likelihood of satisfaction with involvement in decision-making and significantly reduces the likelihood of training and pay satisfaction. This result is expected in the sense that when employees are allowed to contribute to decisions and are rewarded according for their effort, we expect employees to be satisfied with their involvement in the decision-making process.

This finding in a way corroborates the study of Wood and de Menezes (2011) as they found that individual performance related pay strengthens the effect of job control on job satisfaction. However, Wood and de Menezes (2011) used payment by results (from management survey) as the measure of individual performance related pay while we used merit pay in this study. Further, the purpose of examining the joint effects of individual performance related pay and suggestion is outlined in Kim's (2005) study. Kim (2005) found the positive effect of suggestion system on labour productivity to reduce over time. It was argued that the decline could have been as a result of the suggestion system being used in combination with group incentive scheme. If the suggestion provided improved organisational performance, there by generating a bonus, the bonus will be shared with other employees and this means that the bonus may be small for the 'contributor' if many employees are covered by the incentive scheme. As such, being less satisfied with the incentive scheme may have facilitated the decline of the positive effect. However, our study that examined suggestion scheme in combination with individual incentive scheme only found a positive association with being involved in decision-making and not pay satisfaction. This may be true in the sense that merit pay that is subjective in

nature may not accurately account for the performance or output of the employee. Thus, hypothesis three is also confirmed for satisfaction with involvement in decision-making. Moreover, table 6.4 shows that the joint effects of merit pay and suggestion scheme are similar in workplaces that have non-discriminatory work environment through the presence of EO policies. Thus, the result shows that merit pay, suggestion scheme and EO policies are complementary but the effect is not different from the joint effect of merit pay and suggestion scheme.

Table 6.6: Types of Management and Job Satisfaction

	Satisfaction With:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job Security**	**Work**	**Involvement in Decision**
Informative Management									
Operations	-0.025	-0.039	-0.093***	0.034	-0.073**	-0.052*	0.065	-0.039	0.035
	(0.032)	(0.033)	(0.031)	(0.033)	(0.034)	(0.027)	(0.045)	(0.032)	(0.036)
Staffing	-0.009	-0.037	-0.002	-0.033	-0.023	-0.035	0.075*	-0.035	0.036
	(0.031)	(0.033)	(0.030)	(0.032)	(0.033)	(0.026)	(0.044)	(0.031)	(0.035)
Sequence	0.184***	0.190***	0.221***	0.365***	0.314***	0.013	0.038	0.245***	0.227***
	(0.031)	(0.033)	(0.031)	(0.032)	(0.033)	(0.027)	(0.043)	(0.031)	(0.035)
Finance	-0.050*	0.052*	0.062**	0.067**	0.048*	0.146***	-0.015	-0.043*	0.150***
	(0.026)	(0.027)	(0.025)	(0.027)	(0.027)	(0.021)	(0.036)	(0.026)	(0.029)
Consultative Management									
Views of employees	0.069**	0.004	0.026	0.089***	0.121***	0.042	-0.040	-0.002	0.168***
	(0.032)	(0.033)	(0.031)	(0.033)	(0.034)	(0.027)	(0.044)	(0.032)	(0.035)
Response to suggestions	0.050	0.105***	0.038	0.061	0.131***	0.050	-0.075	0.090**	0.377***
	(0.037)	(0.038)	(0.035)	(0.038)	(0.039)	(0.031)	(0.051)	(0.037)	(0.041)
Influence of employees	0.046	0.182***	0.260***	0.087**	0.094**	0.166***	0.200***	0.025	0.785***
	(0.034)	(0.035)	(0.032)	(0.036)	(0.037)	(0.028)	(0.047)	(0.034)	(0.040)
Supportive Management									
Keep promises	0.034	-0.006	0.058*	0.169***	0.058	0.118***	0.081*	-0.016	0.055
	(0.036)	(0.037)	(0.034)	(0.037)	(0.038)	(0.030)	(0.049)	(0.035)	(0.040)
Sincere	0.040	0.109***	0.048	-0.188***	-0.105**	-0.129***	-0.021	0.034	0.129***
	(0.039)	(0.040)	(0.037)	(0.040)	(0.042)	(0.033)	(0.054)	(0.038)	(0.043)
Honest	-0.130***	-0.068*	-0.027	-0.052	-0.077*	-0.045	-0.125**	-0.051	-0.011
	(0.039)	(0.041)	(0.038)	(0.041)	(0.042)	(0.033)	(0.055)	(0.039)	(0.044)
Understanding	-0.010	0.034	0.029	-0.044	-0.027	0.035	0.046	0.051**	0.005
	(0.026)	(0.027)	(0.026)	(0.027)	(0.028)	(0.022)	(0.037)	(0.026)	(0.030)
Encouraging	0.232***	0.254***	0.140***	0.815***	1.060***	0.118***	0.087**	0.170***	0.181***
	(0.029)	(0.029)	(0.028)	(0.030)	(0.032)	(0.024)	(0.040)	(0.028)	(0.032)
Treat fairly	0.078**	-0.004	0.039	-0.016	-0.011	0.168***	0.120***	0.079**	0.137***
	(0.032)	(0.033)	(0.031)	(0.033)	(0.034)	(0.027)	(0.045)	(0.032)	(0.036)
Employee-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Workplace-level controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: Results from the main effects models are presented here. A detailed table of results where the main, two-way interaction and three-way interaction effects models are presented side-by side is included in the appendix (tables A.2, A.3, A.4). Coefficients are statistically significant at * p<0.10, ** p<0.05, *** p<0.01 and standard errors are in parentheses.

6.7.4 Management Types

Apart from the engagement practices outlined above, Table 6.5 also shows the effects of different types of managers in workplaces and these results are significant across different forms of job satisfaction. Managers who are consultative in nature and allow employees to influence final decisions are found to positively affect employees; thus, employees are more likely to be satisfied with most facets of the job. This corroborates the findings of Akerboom and Maes (2006) and Wood and de Menezes (2011) for decision latitude being a major predictor of job satisfaction. This finding on consultative managers suggests the importance of differentiating among various consultative strategies of managers. Employees' being able to influence final decisions is shown to be a better predictor of various forms of job satisfaction than the response of managers to employees' suggestion. Also, manager's response to employee's suggestion is shown be a better predictor than a manager who seeks the views of employees. These findings further support Timming's (2012) claim of employees' involvement being positively associated with job satisfaction. In sum, the significance of consultative management suggests that having a voice and being able to influence decisions in the workplace are important factors that influence job satisfaction.

Moreover, managers that inform employees about changes in the particular order of their job (informative managers) are shown to have positive impact on employees. This type of management is shown to be positively associated with all forms of job satisfaction except pay satisfaction and job security satisfaction. Moreover, the results revealed that managers that inform employees about financial matters (budgets or profit) positively influence employees' satisfaction with pay while those that inform employees about changes in staffing positively influence employees' satisfaction with job security. This reveals that satisfaction with various aspects of the job depends on the sort of information being communicated by managers. This provides support for Beehr et al.'s (1990) study in a way as they suggested that contents of communication (measures of social support) by supervisors were important determinants of employees' wellbeing. These findings also corroborate Mohr and Zoghi's(2008) study. It reveals that being informed about workplace changes and activities is an important predictor of employees' satisfaction.

Further, table 6.5 reveals that managers who encourage employees to develop their skills positively affect employees, as such; they are more likely to be satisfied with all aspects of their jobs. Also, we find positive association between managers who treat employees fairly and satisfaction with: achievement, pay, job security, work itself and involvement in decision-making. This implies that employees are more likely to value and appreciate practical form of support from managers rather than emotional form of support (Beehr et al., 1990; Beehr et al., 2000; Brough and Pears, 2004). These findings on informative and supportive managers support the results of Wood and de Menezes (2011) who found a positive relationship with job satisfaction. Also, employees are more likely to be satisfied with using their initiative and overall involvement in decision-making when managers are sincere in attempting to understand their views. This intrinsic form of social support, managers being sincere with employees, corroborates the study of Ellingsen and Johannesson (2007) in a way. However, managers who deal with employees honestly tend to have negative impact on employees. A reason for this may be that managers may divulge too much information about the workplace to employees by being honest. Thus, employees may have knowledge about workplace issues that may negatively affect their perception of the workplace. Also, employees may be unsure about the extent of honesty by managers. Employees may view such honest attitudes and behaviours as 'baits' and may in turn negatively influences satisfaction with different aspects of the job.

6.7.5 Age and Gender

Analyses also show differences among various groups of employees and their levels of satisfaction (Tables A.2, A.3, A.4). Gender is shown to be significantly and positively related to satisfaction with four aspects of the job and implies that men are more likely to be satisfied with initiative, influence, training and skills than women. This finding corroborates the idea of Vila and García-Mora (2005), who suggested that women are less satisfied than men with some aspects of the job (pay, work itself, hours of work, overall job). On the other hand, the gender finding differs from the findings of Clark (1997), Gazioglu and Tansel (2006) and Van Der Westhuizen et al. (2012) who found that women are more likely to be satisfied than men. These previous findings may be due to fewer control variables being used or possibly the

sort of workplace environment before recession (e.g Gazioglu and Tansel, 2006 used WERS98).

The results obtained for age is similar to the findings in existing literature; older employees are more satisfied than younger employees (Wood, 2008; Gazioglu and Tansel, 2006; Clark et al., 1996; Wood and de Menezes, 2011). The result shows that employees who are 30 and above are more likely to be satisfied with four forms of job satisfaction than employees who are in the age range of 16 and 29. This finding regarding age may be due to the fact that older employees have some work values that make job characteristics more desirable and are less attractive to younger employees. It could also possibly be the case of fewer expectations by older employees.

6.7.6 Other Employee-level Controls

The results on other control variables are also presented in the appendix (Tables A.2, A.3, A.4). Employees from white ethnic backgrounds are more likely to be satisfied with achievement, pay, work itself and involvement in decision-making. However, for other forms of job satisfaction, the satisfaction level of this category of employees does not differ from that of employees of other ethnic backgrounds. Union membership (individual-level variable) that is assumed to be a key voice mechanism is found to be positively related to satisfaction with pay and work itself while it is significantly associated with lower levels of satisfaction with skills and involvement in decisions than non-membership. This corroborates the findings of Meng (1990) and Berger et al. (1983) who found union members to be satisfied with pay. A possible explanation may be that unions are effective in using their codetermination rights to improve employees' pay. However, the negative relationship with skills satisfaction and involvement in decisions satisfaction may be due to some unobserved factors that co-determine the decision to join unions as well as reported job satisfaction. Also, employees who have been union members in the past are less likely to be satisfied with pay and more likely to be satisfied with achievement and work itself than non-union members.

Further, employees who have been in the workplace for more than ten years are more likely to be satisfied with influence and training and less likely to be satisfied with pay when compared to those who have been on the job for less than a year.

Employees who are responsible for overseeing the work of other employees on a day-to-day basis are more likely to be satisfied with initiative, influence, skills, pay, and involvement in decision-making than employees who are not supervisors. This adds to the body of literature job control (delegation of authority) as well as confirms the propositions of the demand-control model.

Considering the relationships between different contract-status categories, employees with fixed-contracts are more likely to be satisfied with pay, and work itself and less satisfied with job security than permanent employees. Temporary employees on the other hand are more likely to be satisfied with pay and work itself and less likely to be satisfied with training and job security when compared to employees with permanent contract. This result is expected as there is the less likelihood of temporary employees having access to training when compared to permanent employees. Being married is also significantly related to higher levels of satisfaction with achievement and work itself than being single. This corroborates the findings of Clark (1996) and Van Der Westhuizen et al. (2012). Also, it provides support for Vila and García-Mora's (2005) study who suggested that Spanish workers that are single are less satisfied with the job itself.

Employees who have a higher degree are more likely to be satisfied with training and pay while those with first degree are less likely to be satisfied with initiative, training and skills than those who have just GSCE grades D-G. The more educated the employee is, the higher the hierarchical pedestal the employee can attain and the higher the employee earns. These findings are in agreement with previous studies in a way. For example, Gazioglu and Tansel (2006), Van Der Westhuizen et al. (2012) and Wood and de Menezes (2011) find that employees with middle or higher levels of education are less likely to be satisfied with their jobs. First degree may fall in this category of middle or higher level of education. Also, this present finding on higher degree seems to be consistent with Vila and García-Mora's (2005) study who found that university education (both short-cycle and long-cycle degrees) is positively associated with pay satisfaction. Our study provides support for the consideration of various forms of job satisfaction as different levels of education and qualifications will have varying effects on different forms of job satisfaction. Lastly, the estimated results reveal that heterosexual employees are more likely to be satisfied with training than employees with other sexual orientations. Also,

employees without religion are less likely to be satisfied with achievement than those who have a religion.

6.7.7 Workplace-Level Controls

The results for these control variables are presented in the appendix (tables A.2, A.3, A.4). Grievance procedure that is another measure of 'employees' voice' is found to reduce the likelihood of satisfaction with skills across the major models (main effects, 2-way interaction effects and 3-way interaction effects models) examined. Further, workplaces with employees between 1000 and 9999 are associated with increases in skills satisfaction while employees in larger workplaces of 10,000 or more employees are less likely to be satisfied with initiative when compared to employees in smaller workplaces (5-999 employees). This result in a way provides an extension of Tansel and Gazioglu (2013) who suggested that satisfaction with influence declines as firm size increases using WERS1997. Employees in public sector are more likely to be satisfied with pay (significant when interactions are added) and less likely to be satisfied with job security. The negative association with job security is surprising in the sense that public sector is suggested to be associated with less uncertainty (Vila and García-Mora, 2005). However, with the public sector being suggested to be regulated and associated with less uncertainty, employees may be more satisfied with the pay they receive. We also find that employees in lower and intermediate occupational categories are similar in reactions for pay satisfaction and training satisfaction when compared to employees in managerial occupations. These employees are more likely to be satisfied with training and less likely to be pay. This is expected as employees in managerial occupations earn more than those in intermediate or lower categories. Lastly, the results suggest that workplaces being in different industries are associated with varying levels of job satisfaction.

6.8   The Effect of Union Membership

Union membership is found to be negatively related to satisfaction with skills and involvement in decisions. The negative association of union membership may be as a result of reverse causality that can be explained in the case of employees in workplaces covered or uncovered by union bargaining (Bryson et al., 2004). In the case of uncovered workplaces, employees may join unions to voice their dissatisfaction with the job because of increased awareness about unsatisfactory

aspects of the job and the absence of union representatives to voice their dissatisfaction. For covered workplaces in Britain, non-members tend to benefit from union bargaining without being members. Union membership is also found to be positively related to satisfaction with pay and work itself. That is, unions bargain and ensure good working environments for employees; thereby facilitating satisfaction with the work itself and pay. This supports explanations on wage, collective voice and bargaining effects of unions. The findings on these voice mechanism measures are however in contrast to Wood and de Menezes's (2011) argument that: having a voice with bargaining rights is not necessarily an important predictor of job satisfaction. As highlighted in section 6.6.2, we test the possibility of reverse causality between union membership and the forms of job satisfaction.

Table 6.7: Test of Exogeneity

	Satisfaction With:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
	Union	Union	Union	Union	Union	Union	Union	Union	Union
Instrumental variable									
Dispute over pay and Working conditions	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Constant	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Test of exogeneity (ρ)	**0.092**	**0.198*****	**-0.012**	**0.039**	**0.018**	**-0.118***	**0.057**	**0.063**	**-0.025**
	(0.070)	**(0.075)**	**(0.070)**	**(0.071)**	**(0.072)**	**(0.061)**	**(0.086)**	**(0.070)**	**(0.086)**

Notes: The full results are presented in the appendix (A.0.7). Standard errors are in parentheses. Coefficients are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

In Table 6.7, the likelihood ratio statistics for the test of the hypothesis that ρ (correlation coefficient) equals zero shows that we cannot reject the hypothesis that ρ is equal to zero for seven dimensions of job satisfaction. That is, union membership is not endogenous for seven dimensions of job satisfaction. A possible explanation for this result in the British context may be that workplaces may be covered by union bargaining (covered or uncovered workplaces were not tested in this study) and non-union members do not need to join unions because of dissatisfaction so as to benefit from union bargaining. However, the endogeneity test showed that satisfaction with initiative and pay influence union membership. Having accounted for selection effects in comparison to models without attention to selection effects, we find that: (1) union membership is positively associated with pay satisfaction and (2) union membership is negatively associated with initiative satisfaction. The selection effects model supports the explanation of the reverse causality between union membership and pay satisfaction. That is, employees tend to join unions so as to improve their working conditions and increase their bargaining power possibly because returns to voice are higher in the presence of collective bargaining. However, in the case of initiative satisfaction where the workplace is not covered by union bargaining for example, employees join unions so as to voice their dissatisfaction about the lack of autonomy and use of initiative. When the base and selection effects models are compared, we find that there are no significant changes in the coefficients of our explanatory variables except for collective form of participation in decisions (joint consultative committees). However, there are significant changes in the' coefficients (Table A.0.7 in the appendix). We find significant negative relationships between joint consultative committees and satisfaction with: influence and job security when we account for selection effects. This is in contrast to the non-significant result obtained when selection effects are not accounted for. This result suggests that most consultative committees may be more of informative committees. Issues may have been decided upon most times and the committee meetings are used for passing the information. Such activities could be perceived as time-wasting; thus, resulting in lower levels of job satisfaction.

6.9   Conclusion

We have used data on a representative sample of employees and workplaces to analyse the impact of individual forms of employees' participation in decision-making, individual incentive schemes, other employees' engagement practices, employees' characteristics as well as workplace characteristics on job satisfaction in Britain. This study departs from previous studies on employees' participation and incentives in the following ways. First, we consider individual forms of employees' participation, job control and incentives in comparison to collective forms. We focused on such practices because collective forms may not adequately capture the creativity of employees and reward their individual effort appropriately. Second, the analytical focus of this study is comprehensive. The dependent variables are nine different forms of job satisfaction rather than one form of job satisfaction or a composite index representing overall job satisfaction. Also, we considered specific measures of different predictors as each dimension of these workplace practices elicit different types of employees' behaviours (their effects on various forms of job satisfaction are different). Third, this study provides empirical evidence that the impact of individualised workplace practices on different forms of job satisfaction is not only contingent on the individual but also on the joint presence of these practices.

Our results constitute general findings about the importance of individualised engagement schemes in British workplaces and the types of practices that influence various forms of satisfaction; thus, contributing to the current body of Economics of Participation research. We have used the demand-control-support model and the utility theory and the hypothesis on individual form of employees' participation in decision-making (through suggestion schemes) is supported. The results suggest that the use of suggestion schemes as a participatory practice as reported at firm level is positively and significantly related to satisfaction with influence, training, skills, pay and job security. In contrast, joint consultative committee is not significantly related to any form of job satisfaction.

Also, employees are found to more likely be satisfied with most aspects of the job when they are given the opportunity by managers to influence final decisions rather than when managers only seek their views. This suggests that having influence over decisions is an important predictor of various forms of job satisfaction. These findings on the participation of employees through suggestion schemes as well as

the impact of informative and consultative management may have been influenced by external factors that are institutional in nature such as the Information and Consultation of Employees regulations in Britain.

Moreover, merit pay that is subjective in nature is positively related to satisfaction with pay and involvement in decision-making and negatively associated with training satisfaction. However, another measure of individual incentive schemes (payments based on individual performance or output) is found to be positively associated with achievement satisfaction and negatively associated with involvement in decision-making satisfaction. The results on merit pay confirm our proposition as we expect employees to be more satisfied with pay received when they are rewarded individually for their effort and contributions.

In contrast to the result obtained on the main effect of merit pay and suggestion scheme, the joint presence of these practices is associated with decrease in the likelihood of employees being satisfied with training and pay. A possible explanation may be that merit pay does not appropriately account and reward employees for their contributions through suggestion schemes, thus; a negative association with pay satisfaction. Moreover, the positive association with involvement in decision-making satisfaction confirmed our expectations. We suggest that job satisfaction will be improved when employees are allowed to participate individually in decision-making and are rewarded accordingly through individual incentive schemes. However, we obtained the same results when we tested the joint effects of merit pay, suggestion scheme and EO policies. Further, we tested the causal link between unions and job satisfaction by controlling for endogeneity. The results showed that unions are not endogenous for seven forms of job satisfaction.

This is an initial study based on cross-sectional analysis. However, we have been able to provide empirical evidence that job satisfaction is improved when employees are allowed to participate individually in decision-making and are rewarded accordingly for their contributions. Also, the results revealed that merit pay and suggestions schemes are largely interactional because they are complementary practices. An assessment of these engagement practices and job satisfaction over time will be interesting in order to examine whether the effects disappear or the effects are due to changes in practice use.

Chapter 7. Effects of Employees' Empowerment on Job Satisfaction

7.1   Introduction

The concept of employees' wellbeing has been studied in its entirety and this ranges from emphasis on quality of life in Health Economics, utility in Economics to job stress in Work Psychology. In particular, the theoretical and empirical analyses of employees' wellbeing (psychological health) in the work psychology literature have mostly utilised Karasek's model or demand-control model (these terms will be used interchangeably). Psychologists suggested that employees' wellbeing may also relate to emotional states of happiness. This chapter particularly considers 'emotional states of happiness' dimension of employees' wellbeing. Our definition of the concept of employees' wellbeing is the positive feeling induced by being on the job and this forms an important part of overall wellbeing. As outlined in the previous chapter, employees' engagement practices are suggested to affect their emotional state of happiness (job satisfaction) through job control factors inherent in these practices. Moreover, the direction of the effect may also be due to the level of job demand associated with the presence of the practices. Thus, this chapter re-evaluates employees' engagement practices based on opportunities to influence various aspects of the job (job control) by empirically analysing the demand-control model.

As we have seen in chapters 4 and 5, demand-control model emphasises the degree of decision authority and skills discretion (jointly referred to as job control in demand-control model) as well as job demand placed on employees. This model has been widely used in the analyses of the predictors of employees' wellbeing. With such emphasis by this model, the characterization of jobs is suggested to be the major source of cost (psychological strain) to the employee. The model posits that the presence of high job demand and low job control causes psychological strain/stress (strain hypothesis). This description of stress has been suggested to show the major cause of health inequalities in the British Civil Service by the Whitehall study II (Marmot et al., 1991). More senior workers in a corporate hierarchy tend to live longer than workers at the bottom of the hierarchy.

Karasek (1979) as well as Karasek and Theorell (1990) have argued that employees' wellbeing is negatively related to a high level of job demand because of stress, anxiety, physical illness (Karasek and Theorell, 1990). Demand on the job refers to psychological stressors associated with the accomplishment of workload, conflicting demand or time pressure (Karasek, 1979; Probst, 2005). Job control on the other hand refers to control over organisation and pace of tasks, ability to influence broad management decisions and use of skills on the job. This study focuses on only one dimension of job control as emphasised by Karasek's model. This dimension is decision authority and it refers to influence over the organisation and pace of tasks and the opportunity to influence broader management decisions. This model's emphasis is on the combination of job characteristics and the interaction effects are as important as the individual effects. In understanding how workplace stress is induced and how it can be avoided, the demand-control model outlines four types of jobs. These types of jobs explain and outline the two major hypotheses of the demand-control model. These jobs are:

1. **Stressful Jobs:** where workers have high levels of demands on the job and have low degree of control over responsibilities. They are similar to producers' tasks where employees have limited time to deliver and are faced with conflicting demand. These types of jobs highlight the strain hypothesis.

2. **Less stressful jobs:** are associated with higher degree of job control and low demand on the job. Karasek and Theorell (1990) described this situation by considering a car repairer who has control over the rate a car is repaired and it is only when the car repairer is less busy that another demand can come in.

3. **Active Jobs:** jobs that are characterised by high levels of job control and high levels of on-the-job demand. These are mostly challenging jobs ('challenging enough to be interesting but not so demanding that capacities are overwhelmed' – Karasek and Theorell, 1990:171); they require high level of performance. For example, a surgeon performing a difficult operation feels a high level of control over such procedure even when it is intensely demanding. On this type of job, learning and growth are enhanced (Karasek and Theorell, 1990). Active jobs explain the active learning hypothesis.

4. **Passive Jobs:** jobs where workers follow standard procedures and acquired skills are lost in the process. Tasks in such situations are repetitive in nature

and workers are stereotypes. This is broadly defined as jobs with low level of control and low job demand.

Thus, from the outline of the job types, the two major hypotheses (strain and active learning hypotheses) are:

i.   Employees are less likely to be satisfied with the job when they have high levels of job demand and low levels of job control (strain hypothesis).

ii.   Employees are more likely to be satisfied with the job when they have high levels of job demand and high levels of job control (active learning hypothesis).

In this chapter, we investigate Karasek's (demand-control) model in the context of employees' satisfaction with different facets of the job whilst controlling for various individual and collective forms of employees' engagement practices as well as equality plans in British workplaces. Apart from testing the individual/main effects of job demand and job control in the workplace, we also examine the joint effects (as described in the types of jobs outlined above) of job control and job demand on various forms of job satisfaction. By examining the joint effects of these job characteristics, we test the strain and active learning hypotheses of the demand-control model. For the strain hypothesis, we examine the effect of the joint presence of high job demand and low job control on job satisfaction. For testing the second hypothesis, we analyse employees' job satisfaction with being in active jobs (job characterised by high level of job demand and high level of job control – active learning hypothesis).

This study differs from previous published studies on the demand-control model in several ways. First, we consider the main effects of different measures of job control and job demand on various forms of job satisfaction. We consider different measures of job demand and job control because each measure will elicit different levels of satisfaction with various aspects of the job. Second, we conduct PCA on the measures of job demand and job control to obtain composite measures of job demand and job control. These composite measures are then used to construct four binary variables that measure four types of jobs proposed by the demand-control model. Moreover, we account for the potential nature of reverse causality between the forms of job satisfaction and union membership. Lastly, we use the imputation strategy to deal with missing cases in the measures of job control and demand

derived from PCA. This is a strategy where the distribution of the observed data is used to estimate plausible values for the missing cases (White et al., 2011). Thus, this study provides a comprehensive analysis of Karasek's model. Additionally, we were able to confirm that employees are more likely to be satisfied with different aspects of the job when they are in less stressful jobs than stressful jobs.

In sum, our approach is to estimate this equation:

$$S_{ij=} \alpha + C_i'\beta + D_i'\delta + HDLC_i'\gamma + HDHC_i'\vartheta + EOC_i'\varphi + EOD_i'\eta + X_i^{S'}\mu + \varepsilon_{ij}$$

(7.1)

Where C_i and D_i, are the measures of job control and job demand respectively. These measures are explained in section 7.3.2. $HDLC_i$ and $HDHC_i$ are measures of the joint presence of job demand and control while EOC_i and EOD_i portray the joint presences of EO policies and job control as well as EO policies and job demand. X_i^S are other control variables affecting job satisfaction outcome and ε_{ij} is the error term. Accordingly, i and j corresponds to an employee and a workplace.

7.2   Research Hypotheses

As mentioned earlier, the demand-control model has been mainly tested on the mental health of employees with few studies considering job satisfaction (e.g. Wood, 2008; De Witte et al., 2007; McClenahan et al., 2007; Noblet et al., 2006; Noblet and Rodwell, 2009; Wall et al., 1996). The main effects of job demand and job control have been confirmed but results on indirect effects have been mixed, inconclusive and sometimes confusing. This could come from variable misspecification or the construction of measures. For example, Beehr et al. (2001) used the original constructs as stated in Karasek's model but examined a manufacturing firm in the US. In the first instance, the non-significant result could have been due to the sample used, or as a result of the construction of the job demand variable. A composite measure was used and its components (such as work intensity) may have impacted on the result. Job demand may be quantitative (work overload, work intensity) or emotional, particularly where there is a high degree of being in contact with individuals on day-to day basis and it is associated with emotional exertions. Thus, the non-distinction of these forms of job demand as in Söderfeldt et al.'s (2000) study may lead to non-significant results.

Thus, with this model highlighting the importance of job characterization, controlling for the appropriate workplace practices that will promote employees' job satisfaction is important. Based on the propositions of demand-control model that high levels of job demand is negatively associated with employees' wellbeing, the first hypothesis is summarized as:

Hypothesis 1: employees are less likely to be satisfied with different facets of the job in the presence of high levels of job demand; as such H1: $\delta < 0$

Conversely, job control according to the model is expected to increase job satisfaction independently. Job control has been suggested and emphasised in the literature as an important predictor of job satisfaction. Karasek (1979) suggested that employees' empowerment is expected to positively influence job satisfaction. Thus, the next hypothesis is summarized as:

Hypothesis 2: Employees are more likely to be satisfied with various aspects of the job when they have control over different aspects of their work; H2: $\beta > 0$

Further, we examine the effect of the joint presence (interaction effect) of job control and job demand. Based on Karasek's model, we expect that employees will be dissatisfied with different aspects of the job when they are faced with a combination of high level of job demand and less opportunities to exercise control over their work. This implies that job control is a psychosocial resource that has a positive impact on job satisfaction and the opportunity to control one's job is very important when considering employees' job satisfaction. As such, we test the strain hypothesis of the demand-control model:

Hypothesis 3: The joint presence of a high level of job demand and less control opportunities is negatively related to various forms of job satisfaction when compared to the joint presence of a low level of job demand and a high level of job control; thus, H3: $\gamma < 0$

We also test the active coping strategies associated with having a high level of job control in the presence of a high level of job demand that in turn influences job satisfaction. Based on Karasek's model, we argue that a high level of job demand does not necessarily have negative effects if combined with a high level of job control. That is, job control has a moderating effect on the level of job demand faced by employees and as such, the presence of control opportunities weakens the

negative consequences of job demand on job satisfaction. This is explained based on employees being able to solve problems in demanding situations because they have the opportunity to exert control over such situations. Thus, job control serves as a motivating factor to engage in such situations. Karasek's model suggested that employees in such jobs tend to be productive and acquire new skills. In this chapter, we examine this type of jobs in the context of job satisfaction. Based on all these arguments, our next set of hypotheses is summarised as follows:

Hypothesis 4: A high level of job control moderates the negative consequences of a high level of job demand; as such employees in jobs characterised by high levels of job demand and high levels of job control are more likely to be satisfied with different aspects of the job. The direction of effects (positive or negative) depends on the type of job being used as the reference category; as such H4: $\vartheta > 0$

Johnson and Hall (1988) argued that job control is not the only resource available for coping with job demand and they suggested that social support from colleagues and managers may also be a moderator of the job demand and strain relationship. We do not consider social support as a moderator in this chapter, but we control for social support and we suggest that the presence of EO policies may also moderate the job demand and job satisfaction relationship as well as strengthen job control. The presence of EO policies may ensure that all groups of employees are delegated authority over their tasks and jobs (that is, such policy expands the coverage of control opportunities), thereby strengthening the presence of job control. For example, Perotin and Robinson (2000) suggested that participation in decision-making is strengthened if discriminated groups get the opportunities to participate in control and have their contributions taken into account. On the other hand, EO policies may be strengthened by job control. Discrimination and harassment seem to be more evident in authoritarian workplaces where there are large power imbalances. As such, the delegation of control to employees may thus reinforce policies against unfair treatment and discrimination. Therefore, job control and EO policies may be complementary in that the effect of job control is strengthened by the presence of EO policies.

Further, an EO policy may serve as a buffering mechanism for the negative consequences of job demand through the means of ensuring that all groups of employees are allocated appropriate workloads. That is, it could serve as a medium

of ensuring that discriminated groups are allocated the same workload as non-discriminated groups so as to be able to fulfil commitments outside of work. Also, the presence of EO policies may moderate the impact of job demand by creating an active coping atmosphere for employees. Such policy may also provide a non-discriminatory atmosphere for employee's voice against inappropriate job demand. Based on these arguments, our next sets of hypotheses are summarized as follows:

Hypothesis 5(a): job control and EO policies are complementary, such that, the joint effect on different forms of job satisfaction is greater than the sum of individual effects when implemented separately in the workplace. Thus, H5(a): $\varphi > 0$

Hypothesis 5(b): EO policies moderates the negative effects of job demand on job satisfaction; thus, H5(b): $\eta > 0$

7.3 Measures of Dependent and Explanatory Variables

We examine measures that directly test the individual effects of job control and job demand as well as the types of jobs proposed by the demand-control model. Moreover, we examine the joint effects of some workplace practices (this relates to hypotheses 5a and 5b). These variables are similar to the variables specified in the previous chapter. We will not be describing the variables in detail in this chapter because this has been done in the previous chapter. However, we will identify the variables and the type of relationships expected.

7.3.1 Forms of Job Satisfaction

Employees' wellbeing is popularly related to health and mostly measured by considering the physical and mental health status of employees. However, another dimension of employees' wellbeing is the pleasure gained from the job (that is, positive emotional state). We are considering the latter dimension, that is, satisfaction derived from different facets of the job. Satisfaction with different facets of the job is measured based on respondents' satisfaction with various aspects of the job including: sense of achievement, initiative, influence, training, opportunity to develop skills, pay, job security, the work itself and overall decision-making (the specification has been explained in the previous chapter). This nine-item measure has a Cronbach's alpha (reliability) of 0.88 and this is consistent with previous studies as the range is between 0.85 and 0.90 (Wood 2008; Wood de Menezes, 2011).

7.3.2 Job Control and Job Demand

By utilising the demand-control model in examining the effects of job control (or decision latitude) and job demand on employees' job satisfaction, we explore only one construct of the 'decision latitude' concept and this is 'the decision authority of employees', the other construct being skills discretion. Thus, we will be testing the effects of the availability of control or influence over tasks.

Based on the demand-control model, job control serves as a moderator of the negative consequences of job demand on the wellbeing of an employee. That is, a job that provides control opportunities through availability of autonomy is regarded as a healthy job. Some studies (for example Wood, 2008; Wood and de Menezes, 2011) have examined this model in the context of job satisfaction as it has been mostly analysed in stress literature. In this study, we would be examining this model in the context of satisfaction with work. It is really important to distinguish between job stress and job dissatisfaction. Job dissatisfaction relates to the rate of employees' discontentment with the job or different facets of the job while job stress is mostly conceptualised as psychological strain that is caused by workplace stressors. That is, job stress is conceptualised as measuring employees' psychological health at work (Brough and Pears, 2004).

In light of the presence of demand from the work environment that could be as a result of the presence of inadequate participatory and engagement practices (like role ambiguity) or the adoption of new participatory and engagement practices[73] (work overload), we will test for the effects of job demand and control on their own and in interaction with each other. We expect that the interaction effect is different from or greater than the individual effects of job control and job demand.

For the main effects, we will expect job control and job demand to be positively and negatively associated with overall employees' job satisfaction respectively. However, the effects could vary for satisfaction with different facets of the job. In line with the effect of job demand, some studies have found that with the presence of job control, job demand has positive association with job satisfaction. This positive association occurs because learning is said to take place in such demanding

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[73] The adoption of these participatory and engagement practices may be associated with work intensification and thus, job demand may be in the form of work intensity, work overload, more responsibility, increasing demand on worker performance.

situations. Control opportunities tend to neutralize job demand into challenges (the learning hypothesis). We are not specifically testing the learning hypothesis; however, we expect that if there is a positive relationship between job demand and job satisfaction, it could be as a result of the direction of the effect of job control in the model.

Also as outlined in the hypotheses section, the two-way interaction effects will be tested to examine whether job control moderates or buffers the negative consequences of job demand. With job demand having negative consequences on job satisfaction, we expect that the provision of control opportunities will moderate the negative effects of job demand.

7.3.2.1 Measures of Job Control

Job control is measured using employees' influence over various aspects of work (employee-level variable). The survey questions relate to the magnitude of influence employees have over: the tasks they do in their jobs, the pace of work, the way they do their jobs, the order tasks are carried out and the time they finish or start their working day. Responses to these questions may serve as measures of employees' actual level of control. The internal reliability (Cronbach's alpha) of the 5-item measure is 0.82. The internal reliability is consistent with previous studies (Wood de Menezes, 2011; Wood 2008). Job control has been measured in several ways; with studies like Macky and Boxall (2008) using the term job discretion. Appelbaum et al. (2000) on the other hand concentrated on opportunity to participate that combines job autonomy and self-directed teams as well as quality circles. Dollard et al. (2000) measured job control as autonomy; that is, the extent of employees' self-sufficiency. Westerlund et al. (2010) analysed job control as skill discretion and decision authority as proposed in the demand-control model.

In this analysis, we measured job control as influence over various aspects of the job as highlighted above such as in the study of Wood (2008), Wood and de Menezes (2011) and Brough and Pears (2004). Wood (2008) and Wood and de Menezes (2011) both utilised WERS and this implies we use the same measures as in these studies. Job control is measured the same way in 2004 and 2011. However, Wood and de Menezes (2011) used the term 'enriched jobs' when employees had a degree

of influence over various aspects of their jobs and they found a positive relationship with job satisfaction[74].

7.3.2.2 Measures of Job Demand

The measurements of job demand (psychological stressors) have been similar across studies. The measures used in the literature range from work intensity, conflicting demand, work overload to timing issues. In this study, we measure job demand using a 3-item measure (employee-level measure) and we explore the effects of different types of job demand on job satisfaction. These measures include the rate of employees agreement or disagreement with the following statements: 'My job requires I work very hard' (work intensity), 'I never seem to have enough time to get my work done' (work overload) and 'I often find it difficult to fulfil commitments outside of work because of the amount of time I spend on my job' (timing demand). This has a Cronbach's alpha of 0.59. Although this scale reliability is lower than that of job control, it is consistent with previous studies that used the previous wave of our dataset (Wood, 2008; Wood and de Menezes, 2011). We expect a negative relation with various forms of job satisfaction. However, this may not be the case depending on the influence of job control in the model.

7.3.3 Control Variables

We explored the richness of the data set by including engagement practices such as participatory practices (individual and collective forms), different types of management (informative, supportive and consultative) and types of payment schemes (individual and collective forms) in the models. Further, we explored fairness at the workplace through the presence of EO policies and right to appeal a decision made under the grievance procedure available in the workplace. Moreover, we accounted for employees' characteristics (such as intrinsic motivation, socio-demographic factors, union membership, supervisor, job tenure) as well as workplace characteristics (workplace size, industries, private and public sectors, grievance procedure and occupational categories). In the previous chapter, all these control variables have been suggested to be important determinants of various forms of job satisfaction and non- inclusion of these variables in a job satisfaction model

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[74] They expected job control (enriched jobs) to have positive effect on job satisfaction and also increase the sense of being valued.

will result in omitted variable bias. Moreover, the significance of the inclusion of these control variables is tested and the result of the likelihood ratio test shows that adding these variables significantly improves the fit of the model. These control variables have been explained in detail in the previous chapter. Also, the use of workplace level variables rules out the use of workplace fixed effects. Lastly, we also controlled for missing cases in the explanatory variables by including binary variables for missing values. This 'dummy variable treatment' of missing cases has been explained in the chapter 6 (section 6.7).

7.4 Data

The hypotheses outlined in section 7.2 are tested using the sixth wave of WERS on British workplaces just as in the previous chapter. This data is a combination of the workplace and employee surveys with a total of 21,981 observations. However, with the deletion of missing cases in the dependent variables as outlined in chapter 6, we have a sample size of 20,596. Moreover, In order to test hypotheses 3-5, we conduct PCA based on the measures of job demand and job control so as to obtain composite indices. With PCA carried out in this chapter, we used the imputation method to account for missing values in the continuous variables (explanatory variables) derived from PCA. This method affected our feasible sample size in a way and this is clearly highlighted in section 7.5.1.1.

7.5 Model Specification

An employee's satisfaction with a particular aspect of the job is specified as:

$$S_{ij=}J'_i\boldsymbol{\beta}_1 + \boldsymbol{D}'_i\boldsymbol{\beta}_2 + X_i^{S'}\boldsymbol{\beta}_3 + \varepsilon_{ij} \tag{7.1}$$

$$i = 1, \dots, n \text{ and } j = 1, \dots, q$$

Where $\boldsymbol{J}_i$ and $\boldsymbol{D}_i$, are the measures of job demand and job control explained in section 7.3.2; X_i^S are other control variables affecting job satisfaction outcome and ε_{ij} is the error term. Accordingly, i and j corresponds to an employee and a workplace. In order to test hypotheses 3-5, we conduct PCA based on the measures of job demand and job control so as to obtain composite indices.

7.5.1 Principal Component Analysis (PCA)

In order to use a reduced set of components of job demand and job control to analyse different types of jobs suggested by the demand-control model, we conducted a PCA. The purpose of this technique is to obtain a small number of linear combinations of the original variables that account for most of the total variance (Anderson, 1963). Each principal component is estimated as a weighted sum of the q variables and each of the q variables can be expressed as a linear combination of the set of principal components. The first principal component accounts for the largest overall variance (variance represented by the eigenvalue). The second principal component accounts for the second maximal variance formed from the remaining variance after the variance associated with the first component has been removed and the last principal component accounts for the smallest variance. The combination of these principal components contains the same information as the original variables. However, this information is partitioned across the components in a way that, the components are orthogonal and the leading components contain more information than the later ones. In summary, this technique reallocates the variance from q correlated variables into q uncorrelated components. Apart from being a statistical technique for data reduction, the eigenvectors from a PCA reveal the underlying structure of the data (Milan and Whittaker, 1995).

The principal components have some useful geometric features and both principal components and principal scores are orthogonal to each other. Another point to note is that PCA can be interpreted as a fixed effect factor analysis that can be represented as:

$$y_{ij} = \boldsymbol{a}_i'\boldsymbol{b}_j + \varepsilon_{ij} \hspace{4cm} (7.2)$$

$where\ i = 1, ..., n\ and\ j = 1, ..., q;\ y_{ij}$ are the components of matrix Y (Y is matrix of rank f and f is substantially less than n and q), $\boldsymbol{a}_i$ are scores, $\boldsymbol{b}_j$ are loadings, are q-vectors of parameters and ε_{ij} are independent homoscedastic residuals. Accordingly, i and j correspond to an employee and a workplace.

Deciding which components to retain, the rule of thumb is to retain components that have eigenvalues of one or greater than one (the mean eigenvalue is one because we are analysing a correlation matrix). Another way is to conduct a Scree plot that

provides a visual aid of the point where the inclusion of additional components will not increase the amount of variance.

7.5.1.1 Imputation Strategy for Missing Cases

After undertaking the PCA, missing cases are detected in the components. In dealing with the missing values in the demand and control components, we utilised the imputation method for dealing with missing values. According to Durrant (2005), imputation is a method where a complete data set is obtained by filling in missing data with plausible values. This technique that makes use of an imputation model uses auxiliary variables that are statistically related to the variable with missing values. Imputation is conducted in order to reduce the non-response bias that plagues most survey data (Meng, 1994). Meng (1994) emphasised that the imputation method should not just be viewed as being computational but rather as a means of making inference that follows a sequential method of inputting information. This method ensures that the sample size is maintained and this results in high efficiency compared to when missing values are dropped from the data set. By discarding observations with missing values, all information contained in the non-missing values of these observations are also discarded, thus, resulting in less efficient results (larger standard errors). Also, if the remaining complete cases are not representative of the population, we will have biased estimates. Thus, it is very important missing cases are treated using methods other than deletion.

Since the principal components are continuous variables, we use the linear regression method to fill in the missing values (Rubin, 1987). This method relies on the normality of the model and as such, the variable to be imputed needs to meet the normality assumption.

By considering a variable $X = (x_1, \ldots, x_n)$ in a linear regression model, we have:

$$x_i | \mathbf{z}_i \sim N(\mathbf{z}_i' \boldsymbol{\beta}, \sigma^2) \tag{7.3}$$

Where $\mathbf{z}_i = (\mathbf{z}_{i1}, \mathbf{z}_{i2}, \ldots, \mathbf{z}_{iq})'$ captures the predictors of X for observation i, β is the $q \times 1$ vector of unknown regression coefficients, and σ^2 is the unknown scalar variance. In this case X contains missing values that are to be filled in. Let us consider the partition of $X = (X_o', X_m')$ into $n_0 \times 1$ and $n_1 \times 1$ vectors that contain complete and incomplete observations. A similar partitioning can be done for $Z = (Z_o, Z_m)$ into $n_0 \times q$ and $n_1 \times q$ matrices.

Thus, the linear regression imputation method follows the following steps to fill in X_m:

First Step: Fit a regression model (7.3) to the observed data $(X_o, \mathbf{Z}_m)$ to obtain the estimates of $\widehat{\beta}$ and $\widehat{\sigma}^2$

Second Step: Simulate new parameters β_* and σ_*^2 from their joint subsequent distribution of the missing data $(\beta, \sigma^2) \propto \frac{1}{\sigma^2}$. This simulation is done in two ways:

$$\sigma_*^2 \sim \widehat{\sigma}^2 \frac{(n_0 - q)}{X_{n_0-q}^2}$$

$$\beta_* | \sigma_*^2 \sim N\left[\widehat{\beta}, \sigma_*^2 (\mathbf{Z}'_o \mathbf{Z}_o)^{-1}\right]$$

Third step: One set of imputed values, X_m^1, is obtained by simulating from $N[\mathbf{Z}_m \beta_*, \sigma_*^2 I_{n1 \times n1}]$

Fourth step: Here, the second and third steps are repeated to obtain M sets of imputed values $X_m^1, X_m^2, \ldots, X_m^M$.

Imputations are successfully done for job demand and job control scores. For the job demand index, 406 observations that had missing cases were imputed. However, in the case of job control index, 47 observations (out of 403 observations) with missing cases could not be imputed. A possible explanation for the non-imputation in the case of these 47 observations may be that respondents did not provide answers to the questions used in generating the job control component (that is, respondents who did not co-operate). As such, these 47 observations with missing cases are dropped and our feasible sample consists of 20, 549 observations.

7.5.1.2 PCA of Job Demand and Job Control

As explained in the previous chapter, PCA reduces the number of variables by describing a series of linear combinations of variables that have the greatest variance. The PCA of the measures of job control and job demand are presented in tables 7.1 and 7.2. Table 7.1 shows the results of the PCA for job control in two panels; the first highlights the eigenvalues of the correlation matrix (from the largest to the smallest) while the second panel lists the corresponding eigenvectors. These eigenvectors are the principal components and have unit length; while the eigenvalues are the variances of the principal components and add up to the total

variance of the variables. Since we are analysing a correlation matrix, the variables are standardized to have unit variance and as such, the total variance is 5.

Table 7.1: PCA of Job Control

Principal
Component/correlation

Component	Eigenvalue	Difference	Proportion	Cummulative
Comp1	3.09206	2.34769	0.6184	0.6184
Comp2	0.744375	0.287539	0.1489	0.7673
Comp3	0.456835	0.0496945	0.0914	0.8587
Comp4	0.407141	0.107556	0.0814	0.9401
Comp5	0.299585	0	0.0599	1.0000

Principal Component
(Eigenvectors)

Variable (Influence over:)	Comp1	Comp2	Comp3	Comp4	Comp5	Unexplained
Tasks done	0.4657	-0.1647	0.2681	0.8148	0.1419	0
Pace of work	0.4592	-0.1659	0.6548	-0.5446	0.1903	0
How work is done	0.4898	-0.2103	-0.2476	-0.1012	-0.8027	0
The order of tasks	0.4721	-0.1181	-0.6614	-0.1709	0.5446	0
Time of start or finish	0.3309	0.9419	0.0240	0.0025	-0.0526	0
Number of Observations	20193	Trace =	5			
Number of components	5	Rho =	1.0000			

Table 7.1 shows that the first component has a variance of 3.09, capturing 62% (3.09/5) of the total variance. All the 5 components explain all the variance of the variables and as such, there is no unexplained variance. A careful consideration of the eigenvectors panel shows that the first principal component has positive loadings of similar size on all the variables and this can be interpreted as employees' overall influence over their jobs. The second principal component on the other hand has positive loadings on influence over start or finish time and negative loadings on other measures of job control. Thus, the second principal component differentiates employees' control over their work in general from control over the time they start or finish work (may enhance flexible working or working too much). The third principal component similarly differentiates control over sequence of work (this includes how work is done and the order of tasks) from all other aspects of job

control. The fourth principal component differentiates control over sequence of work and pace of work from control over the tasks employees actually do in their jobs and influence over the start or finish time of working day. Lastly, the fifth principal component has positive loadings on control over the tasks they do in their jobs, the pace of work and the order tasks are carried out and negative loadings on control over how they do their work and time they start or finish their work. This last principal component differentiates control over tasks of the work from control over the work itself. Since the rule of thumb is to retain the component with eigenvalue that is greater than or equal to one, we retain only one component that will serve as the measure for job control and it explains 62% of the total variance.

Table 7.2: PCA for Job Demand

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.67272	0.893173	0.5576	0.5576
Comp2	0.779551	0.231825	0.2599	0.8174
Comp3	0.547725	0	0.1826	1.0000

Principal Component (Eigenvectors)				
Variable	Comp1	Comp2	Comp3	Unexplained
Work overload	0.5633	-0.6413	0.5210	0
Work Intensity	0.6333	-0.0700	-0.7708	0
Timing Demand	0.5308	0.7641	0.3667	0
Number of observations	20190	Trace =	3	
Number of components	3	Rho =	1.0000	

Table 7.2 shows that the first principal component has positive loadings of similar size on all the variables and this can be interpreted as the overall level of job demand faced by employees. The second component has a positive loading on timing demand and negative loadings on work intensity and work overload. This second principal component differentiates not being able to fulfil commitments outside of work as a result of the time spent on the job from the requirements of the job (other forms of job demand). The third principal component has negative loadings on work intensity and negative loadings on work overload and timing issues. Thus, the third principal component differentiates the intensity of work (working hard) from being overloaded with tasks as well as not being able to fulfil outside commitments. Here again, because it is only one principal component that has eigenvalue greater than or

equal to one, we use one single component (first principal component) as the measure of job demand. This explains 55% of the total variance.

7.6 Descriptive Analysis

Table 7.3 shows that the measures of job control range from 1 ('very dissatisfied') to 5 ('very satisfied') with an average of 3.10 for control over the pace of work. This may mean that 10% of employees reported that they have control over tasks done in the job at levels 3 ('some') or 4 ('a lot'). In the same way, Table 7.3 shows that 32% and 30% of employees reported control over how to do work and the order of carrying out tasks respectively at levels 3 ('some') or 4 ('a lot'). However, 58% of employees reported control over time they start or finish working day at levels 2 ('a little') or 3 ('some').

Moreover, 85% of employees reported work intensity at levels 4 ('agree') or 5 ('strongly agree') while 29% of employees reported workload at levels 3 ('Neutral') or 4 ('agree'). 77% of employees on the other hand reported timing demand at levels 2 ('disagree') and 3 ('neutral').

Table 7.3: Descriptive Statistics (Measures of Job Demand and Job Control)

	Mean	Standard Deviation	Minimum	Maximum
Job demand				
Work intensity	4.15	0.78	1	5
Work overload	3.29	1.09	1	5
Timing demand	2.77	1.12	1	5
Job Control (Influence over :)				
Over tasks	3.10	0.93	1	4
Over pace	3.05	0.97	1	4
On how to do task	3.32	0.83	1	4
Over order of task	3.30	0.85	1	4
Over working time	2.58	1.19	1	4

Having conducted principal component analyses on these measures of job demand and job control, Table 7.4 shows the descriptive statistics of the job control index. This component is also shown graphically in Figure 7.1, which shows that the distribution is left-skewed.

Table 7.4: Job Control Component

Percentiles			
1%	-5.130723		
5%	-3.510794	Observations	20549
10%	-2.582413	Sum of Weight	20549
25%	-0.8843555	Mean	-0.0066642
50%	.261131	Standard deviation	1.757262
		Variance	3.08797
75%	1.516848	Skewness	-0.8569162
90%	2.072888	Kurtosis	3.146319
95%	2.072888	Min	-5.130723
99%	2.072888	Max	2.085313

Source: author's computation based on WERS2011

Figure 7.1: Distribution of the Job Control Index
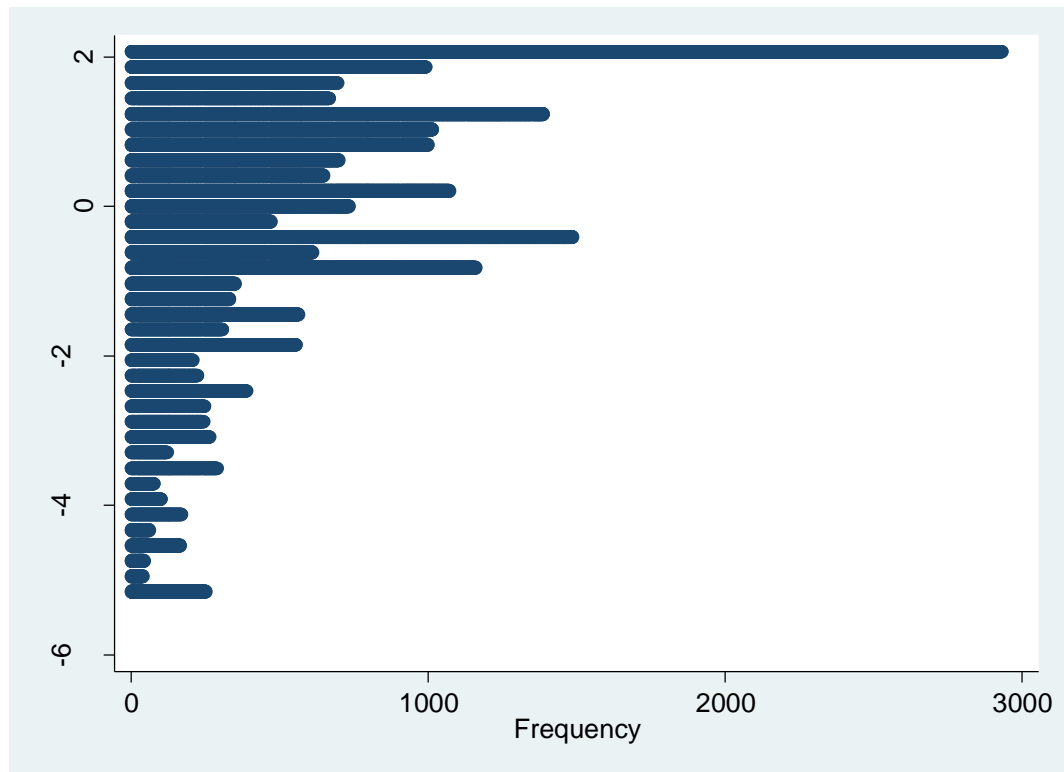
Table 7.5 shows the descriptive statistics for the measure of job demand. The median (50% percentile) is -0.07 and it has a standard deviation of 1.29. The table of statistics and graph (figure 7.2) shows that the distribution is close to being a normal distribution.

Table 7.5: Job Demand Component

Percentiles			
1%	-3.022589		
5%	-1.964835	Observations	20549
10%	-1.633665	Sum of Weight	20549
25%	-0.9070808	Mean	.0018308
50%	-0.0701161	Standard deviation	1.289438
		Variance	1.662649
75%	0.877257	Skewness	-0.0305819
90%	1.714222	Kurtosis	2.702042
95%	2.187908	Min	-4.475756
99%	2.661595	Max	2.661595

Source: author's computation based on WERS2011

Figure 7.2: Distribution of the Job demand Index
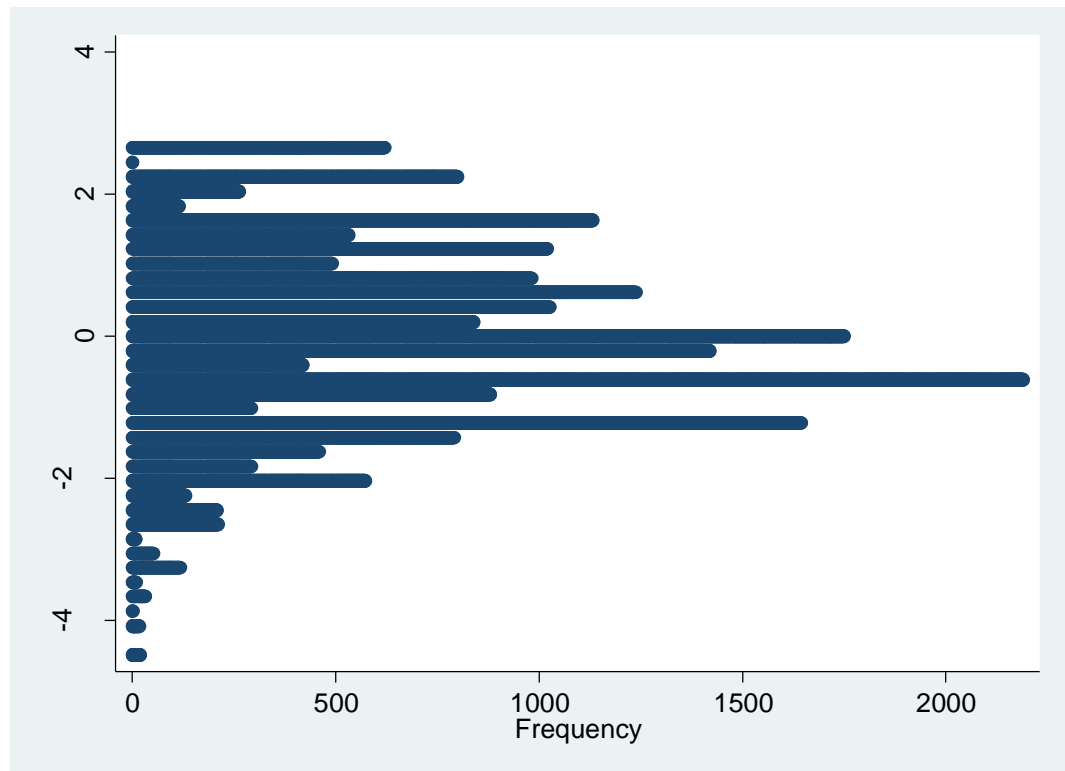
Moreover, descriptive analyses on workforce diversity show that non-white ethnic group constitute approximately 10% of all employees (Table 7.6). This explains the statistics on various forms of job satisfaction across ethnic backgrounds (higher proportions of employees have white background). However, higher proportions of the minority group report satisfaction with different facets of the job.

Table 7.6: Forms of Job Satisfaction across Ethnic Backgrounds

Satisfaction with:	Achievement (%)		Initiative (%)		Influence (%)	
Ethnic Background	**Other**	**White**	**Other**	**White**	**Other**	**White**
Dissatisfied	10.87	89.13	10.23	89.77	10.41	89.59
Satisfied	10.66	89.34	10.85	89.15	10.78	89.22

Satisfaction with:	Training (%)		Skills (%)		Pay (%)	
Ethnic Background	**Other**	**White**	**Other**	**White**	**Other**	**White**
Dissatisfied	9.68	90.32	10.45	89.55	11.52	88.48
Satisfied	10.97	89.03	10.71	89.29	10.23	89.77

Satisfaction with:	Job security (%)		Work itself (%)		Involvement in Decision-making (%)	
Ethnic Background	**Other**	**White**	**Other**	**White**	**Other**	**White**
Dissatisfied	10.12	89.88	11.98	88.02	11.07	88.93

Satisfied	10.60	89.40	10.26	89.74	10.59	89.41

Source: Author's computation based on WERS2011. The results should be read in row per cell manner, showing the proportion of minorities and whites that are satisfied and dissatisfied.

As stated in the previous empirical chapter, it is important to note that this survey has a higher proportion of female employees than male employees. Moreover, Table 7.7 shows that more than 90% of female and male employees in our dataset have permanent contracts while less than 5% have temporary or fixed contracts. Further, 47% of male employees in our dataset are in lower occupational categories while 29% are in managerial categories. In contrast, more female employees are in managerial occupations (35%) than in lower occupational categories. A possible explanation for the higher proportion of male employees in lower categories may be due to the influence of some industries dominated by men. For example, the construction industry is dominated by men and most of the employees who do the manual job in this industry are men. This sort of manual job has the form of a labour contract – employees get paid for the amount of work done – and it is the description of occupations at lower category. About 68% of female employees and 72% of male employees are married or living with partner while 2% of female employees and 1% of male employees are widowed. The proportion of female and male employees who have been on the job for 10 years and less are similar. Lastly, 36% of female employees in our dataset are union members while 38% of male employees are union members.

Table 7.7: Employee and Workplace Characteristics across Gender

	Workplaces with 5 or more employees	
	Females	Males
	%	%
Contract		
Permanent	0.923	0.934
Temporary	0.035	0.031
fixed period	0.041	0.033
Occupation		
Higher & Lower managerial and professional occupations	0.349	0.294
Intermediate occupations	0.323 .	0.234
Lower occupational category	0.324	0.469
Union Member		
No, have never been	0.477	0.428
No, but have been	0.156	0.185
Yes	0.362	0.384
Tenure		

	Workplaces with 5 or more employees	
	Females	Males
	%	%
less than 1 year	0.115	0.109
less than 2 year	0.100	0.092
less than 5 year	0.249	0.231
less than 10 years	0.242	0.243
10 years or more	0.292	0.321
Marital Status		
Single	0.199	0.218 .
married or living with partner	0.675	0.719
divorced/ separated	0.095	0.053
Widowed	0.020	0.007
Supervisor	0.304	0.365

Source: author's computation based on WERS2011

Note: Percentages are based on the total proportion of females (11,553) and males (8,996) in the dataset.

7.7   Empirical Strategy

As in the previous empirical chapter, analysis is conducted individually for all the forms of job satisfaction (9 job satisfaction equations). For direct effects of job control and job demand, we considered all the measures of job demand and job control as some may be more predictive of one form of job satisfaction than others. However, for the joint effects and types of jobs (hypotheses 3-5), we conducted PCA on the measures of job control and job demand.

Using composite measures of job demand and job control obtained, we construct four binary variables that examine four distinct types of jobs. We use the median value as the discriminative cut-off points for these characteristics and the binary variables are constructed as follows:

High demand and high control dummy: this variable takes the value of 1 when job demand is greater than -0.07 and job control is greater than 0.26; zero otherwise

High Demand and low control dummy: takes the value of 1 when job demand is greater than -0.07 and job control is less than or equal to 0.26; and takes the value of 0 otherwise

Low demand and High control dummy: takes the value of 1 when job demand is less than or equal to -0.07 and job control is greater than 0.26; and takes the value of 0 otherwise

Low demand and low control dummy: takes the value of 1 when job demand is less than or equal to -0.07 and job control is less than or equal to 0.26; and zero otherwise

We use low demand-high control dummy as the reference category because it has the largest mean when compared with the other binary variables. Also, we multiply job control and job demand components with EO policies to test joint effects.

Our econometric strategy relies on the use of logit estimations as in the previous chapter. As a result of employees being nested in workplaces, it is suggested that observations within workplaces may not necessarily be independent and this may result in biased standard error estimates. Thus, we report clustered standard errors along with the estimation results. This standard error option relaxes the assumption that observations are independent across groups (workplaces in this case) and specifies the group each observation belongs. Apart from the estimated coefficients, we report some marginal effects.

7.7.1 Marginal Effects

Marginal effect is an estimate of the change in the probability of $y = 1$ given one unit change in an explanatory variable (expressed as a percent). As such, the marginal effects depend on X and it has to be estimated at a specific value of X (typically at sample means). By doing so, we can observe and evaluate the expressions at the sample means of the data. Marginal effects for the logit model can be summarised as:

$$\partial p \big/ \partial X_j = \Lambda(X'\beta)[1 - \Lambda(X'\beta)]\beta_j = \frac{e^{X'\beta}}{(1+e^{X'\beta})^2}\beta_j$$

For binary explanatory variables, the marginal effect is expressed as how a predicted probability changes because binary explanatory variables change from 0 to 1. For continuous variables; marginal effects are expressed as the amount of change in the outcome variable caused by a one-unit change in the explanatory variable. As such, the computation of marginal effects for binary and discrete variables is different from that of continuous variables (Greene, 2012). For binary variables, it is not appropriate to compute how a predicted probability changes if the binary variable changes from 0 to 0.5. Thus, for a binary variable X_q, the marginal effect is:

$$Marginal\ effect\ X_q = Pr[Y = 1|X, X_q = 1] - pr[Y = 1|X, X_q = 0] \quad (7.4)$$

For other categorical variables that have more than two values, the marginal effect shows the difference in predicted probabilities for observations in one category in comparison to the reference category. For example, responses to the three-item measure of job demand are coded as: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. The marginal effect for strongly disagree will show how much employees are more (or less) likely to strongly disagree than disagree. Unlike the coefficients, both sign and magnitude of the marginal effects would be interpreted. To compute these marginal effects, STATA is programmed because it does not give marginal effects as part of the standard output.

Apart from reporting marginal effects in this chapter, we also considered the importance of controlling for endogeneity. Since we are using the same data as in the previous chapter, the test for endogeneity in the previous chapter covers this chapter.

7.8   Empirical Results

7.8.1 Overview of Results

Table 7.8 shows the results from the weighted logit estimations of only the four Karasek job types as explanatory variables. We find that employees in active jobs (jobs with high levels of job demand and job control), stressful jobs (high job demand and low job control jobs) and passive jobs (characterised by low demand and low control) are less likely to be satisfied with different aspects of the job when compared to employees in low strain jobs. With the addition of other explanatory and control variables to the model, table 7.9 shows that the individual presence of job demand and job control are important predictors of the various forms of job satisfaction. Work overload and not being able to fulfil outside commitments because of amount of time spent on the job (length of time issues) are shown to be significantly and negatively related to all forms of job satisfaction at 1% and 5% levels. Interestingly, work intensity is observed to be positively related to four forms of job satisfaction and negatively associated with pay satisfaction and job security satisfaction. The results on the measures of job control are robust and positive across most forms of job satisfaction. These results on the independent effects of job control and job demand support the findings of previous studies and hypotheses of

the demand-control model. In these complex models, table 7.9 shows that being in an active job is not significantly related to any form of job satisfaction when compared to being in low strain jobs (low job demand and high job control jobs). This non-significant result may be as a result of the effects being captured by engagement practices that are included as control variables as they may affect job control and job demand. On the other hand, Table 7.9 shows that employees in the passive jobs reveal being less satisfied with achievement and influence than employees in low strain jobs. A possible explanation may be that in such passive jobs, there is an absence of control and autonomy opportunities and in turn results in the likelihood of less satisfaction with achievement and influence.

Table 7.8: Empirical Analysis of Karasek's Job Types

	Satisfaction with:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
Types of Jobs (ref: Low Demand and High Control)									
High Demand and High Control	-0.059	-0.000	-0.227***	-0.424***	-0.307***	-0.349***	-0.381***	-0.273***	-0.521***
	(0.057)	(0.066)	(0.051)	(0.055)	(0.057)	(0.044)	(0.055)	(0.055)	(0.059)
High Demand and Low Control	-1.313***	-1.815***	-2.121***	-1.139***	-1.222***	-1.036***	-1.036***	-1.352***	-1.630***
	(0.049)	(0.054)	(0.047)	(0.051)	(0.052)	(0.042)	(0.051)	(0.049)	(0.053)
Low Demand and Low Control	-1.278***	-1.721***	-1.882***	-0.665***	-0.862***	-0.496***	-0.655***	-1.041***	-0.994***
	(0.049)	(0.054)	(0.046)	(0.053)	(0.052)	(0.042)	(0.052)	(0.050)	(0.055)
Constant	1.856***	2.217***	1.585***	1.963***	1.969***	1.098***	1.799***	1.865***	2.116***
	(0.042)	(0.048)	(0.039)	(0.044)	(0.045)	(0.034)	(0.045)	(0.043)	(0.048)
Pseudo R-Squared	0.062	0.110	0.142	0.027	0.035	0.024	0.024	0.047	0.056
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20549	20549	20549	20549	20549	20549	20549	20549	20549

Employees in high strain jobs (table 7.9) are less likely to be satisfied with achievement, influence, pay, work itself and involvement in decision-making and more likely to be satisfied with training than employees in low strain jobs. The positive association with training satisfaction may be as a result of the availability of more training opportunities so as to deal with high level of job demand. However, as proposed in the demand-control model, high levels of job demand result in strain and this may be a possible explanation for the negative associations obtained. Extending the hypotheses of the demand-control model, the joint presence of job control and EO policies is shown to be positively related to satisfaction with achievement, initiative, influence and work itself. This reveals that the presence of an EO policy strengthens employees' control in the workplace possibly through making such control opportunities available to discriminated groups. Apart from strengthening the presence of job control, EO policies is shown to moderate job demand even at high levels and as such weakens the resulting negative effects on satisfaction with skills and pay. However, in the case of satisfaction with achievement and work itself, EO policies only moderates job demand at medium and low levels. In sum, our analyses provide support and extension of findings on demand-control model. We found that the presence of EO policies is as important as the availability of control opportunities.

7.8.2 Satisfaction with Achievement

Table 7.9 shows the estimated coefficients for the potential predictors required to test for the effects of job control and demand separately, jointly in the form of our four job types and in interaction with EO policies. Work overload and timing issues are negatively related to achievement satisfaction (hypothesis 1 confirmed) while work intensity shows a positive relation. All the measures of job control on the other hand are revealed to be positively related to satisfaction with achievement (hypothesis 2 confirmed). However, when the hypothesized joint effects and types of jobs are included in the model, the effects of influence over the pace of work, order of tasks and when a working day starts and finishes become non-significant. This finding shows the possibility that some of the effects of job control are captured by the types of jobs and interaction terms examined. This suggests that the interaction models – showing the balance between job demand and control and captured by the job types – are correct. Also, the results show that these job

characteristics (job demand and job control) that are individual-level predictors are important predictors of job satisfaction and they should be carefully considered when implementing initiatives to promote job satisfaction.

By testing the hypothesized joint effects and types of jobs, we find that employees in high demand and low control jobs (stressful jobs) are less likely to be satisfied than those in low demand and high control jobs (less stressful jobs). This result is expected and confirms the strain hypothesis (hypothesis 3). Employees are suggested to prefer low strain jobs to high strain jobs because of the negative effect of job demand (strain). When compared to those in less stressful jobs, employees in low demand and low control jobs (passive jobs) are less likely to be satisfied. This is expected as passive jobs have been described in the demand-control model to be associated with gradual loss of previously acquired skills (Karasek and Theorell, 1990) and the situation prevalent in this type of workplace does not induce learning or exertion of influence. Thus, it is expected that employees would prefer less stressful jobs that are associated with discretion and job control.

Moreover, the results also show that EO policies moderate the negative consequences of job demand on satisfaction with achievement but at low and medium levels of job demand (partly confirms hypothesis 5B). This suggests that EO policies are valued when employees are faced with relatively low level of job demand. On the other hand, EO policies is found to strengthen the effect of job control in the workplace (hypothesis 5A is confirmed). A possible explanation may be that the presence of such policy increases the probability that control opportunities are made available to discriminated groups.

Individual level control variables that show positive association include: individual pay scheme, profit sharing scheme, extra pay, perception of secure job, being informed about changes in the way work is done, managers who seek views of employees, managers who encourage employees to develop their skills and treat them fairly, employees who are intrinsically motivated, union members in the past, employees with white ethnic background, married employees (when compared with single employees), employees who are thirty years and above (when compared with employees between the ages of 16 and 29) and employees with other academic and no vocational qualifications (when compared to those with GCSE grades D-G). Variables that are negatively associated with achievement satisfaction include:

informative management (finance) and managers that deal with employees honestly. A possible explanation for these results may be that dealing with employees honestly may entail informing employees about the successes and problems in the workplace. Being informed about successes such as profits may facilitate comparison levels and if employees' pays are far below what they expect to earn based on their knowledge about the workplace's profit, they may be less likely to be satisfied with their achievement. Moreover, the results also show that satisfaction level does not differ among male and female employees. This may be as a result of having the same expectations of the workplace and being able to engage in workplace activities.

Workplace-level control variables that are positively related to achievement satisfaction include lower occupational categories (when compared to managerial occupational categories) as well as workplaces being in electricity, construction, transportation, information and communication, financial services, real estate, professional services, administrative and support, public admin, education, human health, arts and entertainment and other services industries. In contrast, achievement satisfaction is less in workplaces with EO policies. This may be a case of the 'empty shell hypothesis' – suggested by Hoque and Noon (2004) – where EO policies are not associated with related EO practices.

7.8.3 Satisfaction with Initiative

The estimated results show that control over tasks done in the job, control over how to do the task and control over order tasks are carried out are significant predictors of satisfaction with initiative (hypothesis 2 is supported). The non-significance of other forms of job control may be that their effects have been captured by the types of jobs as well as joint effects included in the model. Focusing on the measures of job demand, Table 7.9 shows that only work intensity is significantly and positively related to satisfaction with initiative. Possibly, employees work hard because they are allowed to take initiatives and this enhances satisfaction with that aspect of the job. These results demonstrate that as hypothesized, job demand and job control are important predictors of satisfaction with initiative.

Table 7.9 shows that EO policies reinforces the effects of job control in the workplace (hypothesis 5A is supported). This may be a result of ensuring that such

control opportunities are made available to all groups of employees. Also, it may be that job control reinforces the effect of EO policies so that participatory workplace environments are less riddled with large power imbalances that facilitate discrimination. However, none of the hypothesized types of jobs is significant in relation to satisfaction with initiative. This may be due to their effects being captured by the main predictors or control variables. Although active jobs is found to be positively related to initiative satisfaction when compared to low strain jobs. This result is not significant but it shows support for the demand-control model's hypothesis.

Individual-level controls that are positively associated with initiative satisfaction are: perception of a secure job, managers that inform employees about changes in the way they do their jobs and financial matters, managers who respond to employees' suggestions and allow them to influence final decisions, managers who are sincere in attempting to understand employees' views and encourage them to develop their skills, being a supervisor, intrinsically motivated employees, being a male employee, being in the age range of 30-49 and having no vocational, Level 1 NVQ and no academic qualification (compared to those with GCSE grades D-G). However, employees are less likely to be satisfied with initiative when: managers deal with them honestly and they have first degree (BSc).

Workplace-level controls that are positively related to satisfaction with initiative include: workplace being in the construction, professional services, education, human health, arts and entertainment industries (when compared to workplace being in manufacturing industry). Employees are less likely to be satisfied with initiative in workplaces with 10,000 or more employees and in accommodation services workplaces.

Table 7.9: Weighted Logit Estimation of Demand-Control Model

	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
				Satisfaction with:					
Main Predictors									
Job Control									
Over tasks	0.243***	0.391***	0.582***	0.043	0.142***	0.072**	0.096*	0.163***	0.113**
	(0.037)	(0.038)	(0.039)	(0.041)	(0.041)	(0.033)	(0.055)	(0.036)	(0.046)
Over pace	-0.021	-0.038	0.009	0.031	0.032	0.078***	0.109**	-0.020	0.024
	(0.035)	(0.036)	(0.036)	(0.037)	(0.037)	(0.030)	(0.052)	(0.034)	(0.043)
On how to do task	0.080*	0.298***	0.197***	0.080*	0.175***	0.015	0.110*	0.120***	0.023
	(0.044)	(0.046)	(0.047)	(0.048)	(0.048)	(0.039)	(0.067)	(0.043)	(0.056)
Over order of task	-0.023	0.184***	0.112***	0.067	0.036	-0.001	0.055	-0.075*	0.099**
	(0.042)	(0.042)	(0.042)	(0.045)	(0.045)	(0.036)	(0.061)	(0.040)	(0.050)
Over working time	0.003	0.022	0.113***	0.085***	0.101***	0.101***	0.029	-0.050**	-0.042
	(0.023)	(0.025)	(0.025)	(0.026)	(0.025)	(0.020)	(0.035)	(0.023)	(0.028)
Job demand									
Work overload	-0.094**	-0.020	-0.120***	-0.225***	-0.186***	-0.081**	-0.089	-0.106**	-0.041
	(0.044)	(0.045)	(0.041)	(0.045)	(0.045)	(0.036)	(0.069)	(0.043)	(0.057)
Work intensity	0.501***	0.268***	0.115**	-0.055	-0.059	-0.239***	-0.274***	0.369***	0.013
	(0.054)	(0.056)	(0.051)	(0.056)	(0.057)	(0.049)	(0.091)	(0.053)	(0.071)
Timing demand	-0.074**	-0.063	-0.139***	-0.106***	-0.174***	-0.097***	-0.122**	-0.112***	-0.049
	(0.038)	(0.039)	(0.034)	(0.037)	(0.038)	(0.031)	(0.059)	(0.036)	(0.048)
Types of Jobs (ref: LD_HC)									
High Demand and High Control	-0.061	0.101	-0.030	0.054	0.014	-0.105	0.009	-0.091	-0.098
	(0.082)	(0.091)	(0.075)	(0.082)	(0.090)	(0.066)	(0.107)	(0.080)	(0.099)
High Demand and Low Control	-0.243***	-0.099	-0.203**	0.168*	0.138	-0.165**	0.179	-0.209**	-0.234**
	(0.091)	(0.101)	(0.089)	(0.098)	(0.105)	(0.080)	(0.127)	(0.094)	(0.112)
Low Demand and Low Control	-0.268***	-0.109	-0.174**	0.084	0.086	0.053	0.015	-0.113	-0.088
	(0.073)	(0.078)	(0.073)	(0.081)	(0.085)	(0.064)	(0.102)	(0.074)	(0.092)
Demand x EO Policy	-0.117*	-0.104	0.019	0.081	0.195***	0.091*	0.085	-0.120*	-0.038
	(0.066)	(0.067)	(0.060)	(0.064)	(0.067)	(0.055)	(0.109)	(0.063)	(0.085)
Control x EO Policy	0.109**	0.099**	0.176***	-0.010	-0.029	-0.047	-0.080	0.111**	0.041
	(0.046)	(0.048)	(0.054)	(0.051)	(0.048)	(0.042)	(0.077)	(0.043)	(0.060)
CONTROLS									
Engagement Practices	YES	YES	YES	YES	YES	YES	YES	YES	YES
Individual-level control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES

	Satisfaction with:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
Workplace-level control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: We account for missing values and the complete table of results with control variables are presented in the appendix (Table A.5). Clustered standard errors in parenthesis and the estimated coefficients are statistically significant at * p<0.10, ** p<0.05, *** p<0.01.

7.8.4 Satisfaction with Influence

Table 7.9 (column 3) summarizes the results of the satisfaction with influence model. The results obtained on the individual-level predictors (job demand and job control) of this form of job satisfaction are similar to those of the preceding forms of job satisfaction. Work overload and timing issues are negatively related to this form of job satisfaction while work intensity shows a positive association. A possible explanation for the positive association may be that employees are recognised for their effort when they work hard, and as such, allowed to have influence over their jobs. All the measures of job control except control over pace of work are positively related to satisfaction with influence. This is expected as the opportunity to be able to influence different aspects of the job will enhance satisfaction with influence. Thus, we are able to confirm hypotheses 1 and 2.

Based on the types of jobs outlined in the demand-control model, employees in high strain jobs (characterised by high demand and low job control) are less likely to be satisfied with influence than their colleagues in low strain jobs (low demand and high control). Further, employees in passive jobs are less likely to be satisfied with influence than employees in low strain jobs. These results are expected in the sense that stressful job and passive jobs are both characterised by low job control; hence, there is less likelihood of exerting influence (hypothesis 3 is confirmed). The joint effects reveal that job control strengthens the effect of EO policies in the workplace (hypothesis 5A is confirmed).

For individual-level controls, satisfaction with influence is positively associated with: perception of a secure job, managers that inform employees about changes in the way they do their jobs and financial matters, managers who allow employees to influence final decisions, managers who encourage employees to develop their skills, being a supervisor, intrinsically motivated employees, being a male employee, being on the job for ten years or more, and having no vocational qualification. On the other hand, satisfaction with influence is negatively related to informative management – information on changes to the way the organisation is being run. This is expected because the reorganisation of the workplace is usually an unpleasant

experience. Among workplace controls, the workplace being in wholesale/retail industry is negatively associated with influence satisfaction.

7.8.5 Satisfaction with Training Received

Table 7.9 (columns 4) shows that work overload and timing issues are negatively related to satisfaction with training employees receive. Work intensity on the other hand reveals a negative and non-significant association with training satisfaction. A possible explanation for the negative association may be that the requirement of the job for employees to work hard is not complemented by adequate training or maybe that job demand are such that there is no time left for training. For job control, influence over how to do tasks and the time employees start and finish their working day are positively and significantly related to training satisfaction. Thus, we are able to provide support that job demand and control are negatively and positively related to satisfaction with training.

In the case of satisfaction with training, employees in high strain jobs are found to more likely be satisfied with training than those in low strain jobs. Contrary to our expectations, the results suggest that high level of job demand with some level of job control positively affects the amount of training employees receive and thus, results in satisfaction with this aspect of the job.

The individual-level controls that are positively associated with training satisfaction include: feelings of the job being secure, managers that inform employees about changes in the way they do their jobs and financial matters, managers who seek employees' views and allow them to influence final decisions, managers who can be relied upon to keep promises and encourage employees to develop their skills, employees who are proud to tell people who they work for (a measure of intrinsic motivation), being a male employee, being on the job for ten years or more, having a higher degree, no academic qualification, other professional qualifications and no vocational qualification (when compared to those with GCSE grades D-G) and being heterosexual (when compared to employees with other sexual orientations). On the other hand, employees are less likely to be satisfied with training satisfaction when: they receive pay based on overall group or team performance, managers are sincere in attempting to understand employees' views, employees use their own initiatives to carry out tasks that are not required as part of their jobs, employees

have temporary contract (when compared to those with permanent contracts) and employees have two or more GCE, first degree, level 5 NVQ, completed trade apprenticeship (when compared to those with GCSE grades D-G).

For workplace-level controls, the following are positively associated with training satisfaction: use of suggestion schemes, noticeboards and intranet as consultation mechanisms, intermediate and lower occupational categories (when compared to managerial occupational category), and workplaces being in electricity, water supply, construction, transportation, accommodation services, real estate, professional services, administrative and support, public administration, education, human health, arts and entertainment industries. On the other hand, merit pay (pay based on subjective assessment of an employee's performance) is found to be negatively related to training satisfaction.

7.8.6 Satisfaction with Opportunity to Develop Skills

Table 7.9 (columns 5) shows the estimated coefficients for the potential predictors from the skills satisfaction model required to test our potential main and interaction effects as well as different types of jobs. Work overload and timing issues still maintain their corresponding negative association with this form of job satisfaction. However, in the case of work intensity, it is negative and non-significant just as in the case of training satisfaction. For the second individual-level predictor (job control), three measures are associated with increases in satisfaction with the opportunity to develop skills on the job while having influence over pace of work and order of tasks do not show significant association. Based on these results, we provide support for hypotheses 1 and 2.

The types of jobs (active, stressful and passive jobs) examined are not significant but they showed positive association with skills satisfaction when compared to low stain jobs. However, EO policies is shown to weaken the negative effects of job demand even at high levels; thus, showing positive association with skills satisfaction (hypothesis 5B is supported).

For individual-level controls, perception of a secure job, informative management (information on changes in the way they do their jobs), managers who seek the views of employees, respond to employees' suggestions and allow employees to influence final decisions, managers that encourage employees to develop their skills,

being a supervisor, employees being proud to tell others who they work for, being a male employee, being 50 years and above (when compared to employees who are between 16-29 years) and employees who have other professional and no vocational qualifications are all positively associated with satisfaction with the opportunity to develop skills in the job. Individual-level controls that show negative relation include: being union member, pay based on contributions to a pension scheme, managers who inform employees about changes to the way the organisation is being operated, managers who are sincere in trying to understand employees' views, manages who deal with employees honestly, employees who have been on the job for one to ten years, having two or more GCE 'A' level grades, first degree and levels 3 and 5 NVQ. The negative association of union membership may be due to reverse causality, in particular different expectations. That is, union members are more likely to be aware of the need for and advantages of developing their skills. As such, employees join unions to voice their dissatisfaction when they are not given opportunities to develop skills. We will test this issue of reverse causality later in this chapter.

Workplace-level control variables that are positively associated with this form of job satisfaction are being in lower occupational category and the workplace being in electricity, water supply, transportation, real estate, professional services, public administration, education, human health and arts and entertainment industries. The control variables that are negatively related include: the presence of formal grievance procedure ('voice' mechanism) as well as systematic use of management chain of information as a means of consulting with employees.

7.8.7 Satisfaction with Pay

Table 7.9 (column 6) shows the results for the pay satisfaction equation. This column shows that all the measures of job demand are negatively related to satisfaction with pay. It shows that employees that agree that their jobs require working hard are less likely to be satisfied with pay (hypothesis 1 is supported). On the other hand, having control over the tasks done in the job, the pace of work and the time of start or finish of job are positively associated with pay satisfaction (hypothesis 2 is confirmed). However, control over the order tasks are carried out and how employees do their work are found to be non-significant.

Testing the hypothesized types of job and complementary effects, we find that being in stressful jobs decreases the likelihood of being satisfied with pay when compared to being in less stressful jobs (hypothesis 3 is supported). Also, the presence of EO policies is shown to weaken the negative effects of job demand at high levels (this confirms hypothesis 5B).

Individual-level controls that are positively associated with pay satisfaction include perception of a secure job, pay based on workplace performance, contributions to a pension scheme, informative management (information on finance), managers that allow employees to influence final decisions, managers that encourage employees to develop their skills, managers that treat employees fairly, managers that can be relied upon to keep their promises, being a supervisor, being loyal to and proud of the workplace, being a union member, having white ethnic background, having a temporary and fixed contract when compared to having a permanent contract, having GCSE grades A-C, having a higher degree, having other professional qualifications and no vocational qualifications.

Individual-level controls that are negatively related include managers that inform employees about changes to the operations of the workplace, managers that are sincere in attempting to understand employees' views, employees who use their initiative to carry out tasks that are not required as part of the job, being union member in the past, being divorced, being on the job for a year or more, having one GCE 'A' levels grade and having level 2 NVQ.

For workplace controls, the workplace being in electricity and transportation industries is positively associated with pay satisfaction. On the other hand, the use of notice boards as means of consulting with employees, being in intermediate and lower occupational categories (when compared to being in managerial occupational category) and workplace being in information and communication, professional services, education, public administration, human health and arts and entertainment industries.

7.8.8 Satisfaction with Job Security

As in the case of pay satisfaction, Table 7.9 (column 7) shows the estimated coefficients for the potential individual-level predictors of the job security satisfaction model. Work overload and timing issues are shown to be negatively

associated with this form of job satisfaction while three measures of job control (control over tasks done in the job, pace of work and how work is done) show positive and significant associations.

For the hypothesized joint effects and types of jobs, we find no significant effects. Thus, the types of jobs proposed by Karasek's model are not supported in job security satisfaction model. These non-significant results may be due to the absence of property rights sharing associated with limited control opportunities made available to employees through employee involvement. Moreover, the complementary nature of job control and EO policies as well as the moderating effect of EO policies on job demand are not confirmed. Thus, only the main effects of job control and job demand are supported in this job satisfaction equation (hypotheses 1 and 2).

For workplace-level controls, workplaces being in electricity, water supply and educational industries are positively associated with satisfaction with job security. However, being in the public sector is negatively associated with job security satisfaction.

The individual-level controls that are positively associated with job security satisfaction include: perception of a secure job, managers that inform employees about changes in staffing, managers that allow employees to influence final decisions, managers that encourage employees to develop their skills and treat them fairly and employees that feel proud and loyal to the workplace. Individual-level controls that are managers that deal with employees honestly, using initiative to carry out tasks that are not required as part of the job, not having a permanent contract (temporary and fixed contracts), having one GCE 'A' level grade and having level 2 NVQ.

7.8.9 Satisfaction with Work Itself

Table 7.9 (column 8) shows that work overload and timing issues are negatively related to satisfaction with the work itself while work intensity is positively related. Further, control over tasks done in the job and how work is done are found to be positively related to satisfaction with the work itself while control over order of task and start or finish of working day show negative associations. These results confirm the first two hypotheses.

The active job hypothesis (hypothesis 4) is not supported in this job satisfaction equation. This result suggests that the effects of high levels of job demand and job control on satisfaction with work itself does not come from the balance between job demand and control. However, the results show that employees in stressful jobs (high demand, low control jobs) are less likely to be satisfied with work itself than employees in less stressful jobs (hypothesis 3 is confirmed). Also, EO policies is found to moderate the negative effects of job demand at low and medium levels (partly confirms hypothesis 5B). However, EO policies and job control are found to be complementary. That is, the effect of job control is strengthened by EO policies (Hypothesis 5A is confirmed).

Further, increases in satisfaction with the work itself is shown for individual-level controls where: extra payments are made for overtime, employees feel their jobs are secure, managers inform employees about changes to how they do their jobs, managers respond to employees' suggestions, managers understanding that employees have to meet responsibilities outside work, managers encourage employees to develop their skills and treat them fairly, employees are intrinsically motivated, employees are current union members or have been in the past, employees have white ethnic background, their contract is temporary or fixed as compared to permanent contract, employees are married and divorced (as compared to being single), employees are 30 years and above, employees have completed trade apprenticeship and have other professional qualifications. Individual-level controls that are negatively related to satisfaction with the work itself include managers who inform employees about financial matters like budgets or profits.

For workplace-level controls, satisfaction with work itself is positively associated with: workplace being in electricity, construction, transportation, information and communication, professional services, administrative and support, public administration, education, human health, arts and entertainment and other services industries. However, employees in intermediate occupational category are less likely to be satisfied with work itself.

7.8.10 Satisfaction with Involvement in Decision-making

As obtained for other forms of job satisfaction, Table 7.9 (column 9) shows the results for the hypothesized predictors of satisfaction with involvement in decision-

making. None of the measures of job demand is significantly related to this form of job satisfaction. Comparing this result to what we obtained in the previous empirical chapter (main effects model); this result suggests that the effects of job demand on satisfaction with involvement in decision making entirely come from the way the measures of job demand affect the balance between job demand and control. The measures of job control (control over tasks done in the job and order or task) on the other hand are associated with increases in satisfaction with involvement in decision-making.

For types of jobs and joint effects, only the strain hypothesis (hypothesis 3) was supported in this model. This result emphasises the hypotheses of the demand-control model as well as suggestions in the job design literature regarding the negative effects of high level of job demand on employees' wellbeing.

Workplace-level control variable that is associated with increases in satisfaction with involvement in decision-making is the use of merit pay (this is pay based on the subjective assessment of an employee's performance). On the other hand, the workplace being in information and communication, financial services and arts & entertainment industries are positively associated with involvement in decision-making satisfaction.

Individual-level controls that are positively associated with satisfaction with involvement in decision-making include: perception of a secure job, managers that inform employees about changes to how they do their jobs and about financial matters, managers that seek employees' views, respond to employees' suggestions and allow employees, managers who are sincere in attempting to understand employees' views, managers who encourage employees to develop skills and treat employees fairly, being a supervisor, employees being loyal and proud of the workplace, employees with white ethnic background, having GCSE grades A-C when compared to having GSCE grades D-G.

Individual level controls that show negative relation are: pay based on individual performance, being a union member, being on the job for 1to 10 years (when compared to those who have been on the job for less than a year) and having one GCE, two or more GCE and other academic qualification (when compared to those who have GCSE grades D-G).

7.9   Discussion

This study has shown, in line with our theory, that job demand is negatively related to various forms of job satisfaction. Surprisingly, in the case of work intensity, we find significant and positive associations with four forms of job satisfaction (satisfaction with achievement, initiative, influence and work itself[75]) and negative associations with two forms of job satisfaction (pay satisfaction and job security satisfaction). The finding on work intensity is in contrast to the argument by Ramsey et al. (2000). These authors suggested that work intensity facilitates higher levels of job demand and stress placed on employees. For initiative satisfaction, work intensity is the only measure of job demand that shows significant association. An overall view of the work intensity result suggests that job demand may not necessarily have negative effects on some forms of job satisfaction. Thus, this finding emphasises the importance of examining different forms of job satisfaction. Further, the results obtained on job demand confirm the proposition of Karasek's model as well as hypothesis 1 as job demand is negatively associated with employees' wellbeing. Also, this study corroborates the findings of studies on stress and employees' wellbeing as well as studies that have examined the impact of job characteristics on job satisfaction such as Wood (2008), Wood and de Menezes (2011), De Witte et al. (2007), McClenahan et al. (2007), Noblet and Rodwell (2009), Beehr et al. (2001), Mikkelsen et al. (1999), Mikkelsen et al. (2005), Akerboom and Maes (2006) and Morrison et al. (2003).

Analysing various dimensions of job demand, De Witte et al. (2007) measured job demand as 'workload' and found a negative relationship while Mikkelsen et al. (2005) found quantitative[76] and emotional job demand to be negatively related to job satisfaction. This study also confirms Morrison et al.'s study (2003) as individual-level measures are important predictors of job satisfaction. We used similar measures of job demand to Wood (2008) and Wood and de Menezes (2011) because the dataset is the same but we used the latest wave of WERS. As such, our study provides a recent and extended version of findings by considering the post-recession period. Further, these previous studies utilised a composite or single measure of job

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[75] These forms of job satisfaction may be classified as intrinsic forms of job satisfaction.
[76] The measures of quantitative demand used by Mikkelsen et al. (2005) are similar to the measures we used in this study as we explored the effects of work intensity, timing issues and work overload.

demand while we considered the effects of different forms of job demand on different forms of job satisfaction.

All the measures of job control on the other hand are positively related to different forms of job satisfaction. This shows that job control is a key predictor of job satisfaction and the findings are consistent with the longstanding job design tradition (studies highlighted above). The results also support the importance of job control as highlighted in the theories of happiness (Wood and de Menezes, 2011; Wood, 2008; Westerlund et al., 2010). In particular, the positive relationship between measures of job control and satisfaction with involvement in decision-making corroborates the ideas of Driscoll (1978), who suggested that participation in decision-making positively influences satisfaction with participation in decision-making. Our measures of job control can be explained as mechanisms through which employees are involved in decision-making regarding their tasks. This has been referred to as 'participation in decisions at employee level' in some studies (Kato and Morishima, 2011).

Employees in stressful jobs (characterised by high job demand and low job control) are less likely to be satisfied with achievement, influence, pay, work itself and involvement in decision-making when compared to those in less stressful jobs (low demand – high control jobs). This confirms the strain hypothesis and provides a more concrete support for previous studies (Wood, 2008; De Witte et al., 2007; Wall et al., 1996). Moreover, employees in stressful jobs are more likely to be satisfied with training than those in less stressful jobs. A reason for this may be that a high level of job demand attracts various training opportunities. As such, employees are more likely to be satisfied with the training they receive than when they are required to work less hard (evident in low demand and high control jobs). As expected, we find that employees in passive jobs are less likely to be satisfied with achievement and influence when compared to employees in less stressful jobs. Passive jobs are devoid of learning and control opportunities as well as novelty. As such, we expect that employees will prefer jobs where they can exert influence. However, the active job hypothesis is not significant for any form of job satisfaction. A possible explanation may be that effects have been captured by the main predictors or control variables included in the model.

Further, we found that EO policies and job control are complementary such that the presence of one reinforces or strengthens the presence of the other. This result is evident for satisfaction with achievement, the use of initiative, amount of influence and the work itself. EO policies on the other hand is found to moderate the negative consequences of jobs demand at low and medium levels for satisfaction with achievement and the work itself and weakens the impact of job demand at high levels on skills and pay satisfaction. This suggests that the presence of such equality policy in the workplace weakens the negative consequences of job demand and as such makes the work environment less discriminatory for training received and the opportunity to develop skills on the job. By controlling for EO policies, we found it to be positively associated (although non-significant) with training satisfaction and this could be an explanation for the joint effects' results obtained. The presence of such policy possibly ensures that training is made available to all groups of employees and as such, results in satisfaction with this facet of the job.

The significant results obtained for the joint effects and the types of jobs proposed in the demand-control model reduce the inconclusiveness in the literature regarding the effect of the joint presence of job demand and control. Studies like De Jonge et al. (1999), De Witte et al. (2007), Wood (2008) and Wall et al. (1996) that have been able to provide support for the interaction effects of job demand and job control considered just an interaction measure that examined the buffering effect of job control on the negative consequences of job demand. In contrast, we show through four different job types that the imbalance between job demand and control specifically affects job satisfaction. Furthermore, our results revealed the buffering effect as well as the complementary nature of equality plan in the workplace. That is, the presence of an EO policy strengthens the presence of control opportunities in a workplace possibly because such policy ensures that control opportunities are made available to all employees in the workplace. EO policies are also found to moderate the negative consequences of job demand at low, medium and high levels. This may mean that EO policies ensure that appropriate workloads are allocated to all employees or such policies provide non-discriminatory work environments where employees can voice any grievances about inappropriate workload. We suggest this practice as being more important than support from managers because social support may only be effective and made available to all groups of employees when the work environment is void of discrimination.

Until recently, studies on job satisfaction have not controlled for much workplace-level and employee- level factors other than demographic differences. With our focus on individual forms of engagement practices in comparison to collective forms, our study shows that being able to participate in decision-making individually via suggestion schemes is more important in predicting job satisfaction than participating through joint consultative committees. These committees offer diluted and collective form of influence. The positive association between the use of suggestions schemes and training satisfaction is expected. Wood and de Menezes (2011) suggested that such schemes are opportunities for employees to have better understanding of workplace plans and initiatives and contribute towards the achievement of the plans and initiatives. Also, the presence of such suggestion schemes may also offer employees the opportunity to suggest training where needed, thus, facilitating satisfaction with the training that they receive. We did not find any significant association between joint consultative committee and any form of job satisfaction. This may be that such committees are more of being informative rather than consultative. Also, such committees represent indirect form of influence as they are composed of employees' representatives who may not represent the interest of each employee.

Employees who receive merit pay are less likely to be satisfied with training and more likely to be satisfied with involvement in decision-making. A possible explanation for the negative association with training satisfaction may be that such pay that is subjective does not objectively assess employees' ability and recommend adequate training where possible. The positive association with Involvement in decisions satisfaction may be that this sort of motivational element adequately rewards employees' effort as such involvement in decisions is likely to be individual in nature and not based on team's input. Moreover, pay based on individual performance and organisational performance (profit sharing) are found to be significant predictors of various forms of job satisfaction. Contributions to pension scheme that is similar to the concept of ESOPs in the US is found to be significantly and positively related to satisfaction with pay. This in a way corroborates the findings on the positive effects associated with such deferred benefit plans (Buchko, 1993). Another interesting finding is that of perception of a secure job that is positively and significantly related to all forms of job satisfaction. This finding

corroborates the suggestions of Karasek and Theorell (1990) and Caroli and Godard (2014) for job security being an important predictor of job satisfaction.

Further, management styles and attitudes are shown to be important in determining satisfaction with different aspects of the job. By examining different forms of informative, consultative and supportive management rather than using a composite index, we are able to observe the types that are important for a particular type of job satisfaction. For example, employees are more likely to be satisfied with pay when they are informed by managers about financial matters such as profits and budget, when they are treated fairly by managers – possibly by adequately rewarding their effort, when managers can be relied upon to keep their promises – possibly when promises of good reward for good performance are fulfilled, when they are allowed by managers to influence final decisions and when managers encourage them to develop skills. The results indicate that some factors that are not necessarily important for skills satisfaction are important for pay satisfaction.

For job security satisfaction, the results are similar to pay satisfaction outlined above. However, some factors stand out for job security satisfaction. Employees are keen on being informed about staffing so as to know if their job is stable or not. In addition, employees are more likely to be satisfied with job security when managers deal with them honestly. That is, employees tend to appreciate managers who are truthful and sincere in the workplace.

However, the supportive nature of managers by being sincere in trying to understand employees' views is found to be negatively associated with training, skills and pay satisfaction. This may mean that such sincerity may give employees' more knowledge about workplace activities or make some problems more obvious and could reduce the likelihood of satisfaction with these aspects of the job. In sum, our findings show that informative, supportive and consultative types of managers one way or the other are important factors that influence various forms of job satisfaction.

Intrinsic motivation is also shown to be an important determinant of job satisfaction. However, we find opposite effects for different dimensions of this type of motivation. While being loyal and proud of the workplace are positively associated with pay satisfaction, the use of initiative to carry out tasks that are not required as part of the job is found to be negatively associated with pay satisfaction. The

positive association may be due to some reverse causality in the sense that good pay, which makes an employee happy, may also make the employee feel loyal. An explanation for this negative association may be that since these tasks are not required as part of the job, amount of pay received will not account for such tasks.

For educational qualification, our study extends Gazioglu and Tansel's (2006) analysis of WERS98, Wood and de Menezes's (2011) as well as Wood's (2008) analysis of WERS2004. These authors found that educated employees are less likely to be satisfied with their jobs. However, our study that estimated an advanced and better specification suggest that male employees are more likely to be satisfied with initiative, influence, training and skills. Also, in contrast to these studies, we find that having a higher degree (like MSc) is associated with increases in satisfaction with training and pay. The findings on higher degree is also consistent with Vila and García-Mora's (2005) study as they found that university education is positively associated with various forms of job satisfaction. Also, being responsible for overseeing the work of other employees is associated with increases in satisfaction with initiative, influence, skills, pay and involvement in decision-making.

Unlike previous studies and primary expectations, the present findings reveal that employees in the public sector exhibit less satisfaction with job security. This is surprising as public sector is argued to be regulated and associated with less uncertainty (Vila and García-Mora, 2005). The results reveal that employees in intermediate and lower occupational categories react in similar ways to training satisfaction and pay satisfaction when compared to those in managerial occupations. The negative association with pay satisfaction is expected as the intermediate and lower occupational categories are associated with lower levels of pay when compared with managerial occupations.

7.10   Age and Gender

For gender, our study extends Gazioglu and Tansel's (2006) analysis of WERS98, Wood and de Menezes's (2011) as well as Wood's (2008) analysis of WERS2004. These previous studies found that male employees are less likely to be satisfied with their jobs. However, our study that estimated an advanced and better specification suggest that male employees are more likely to be satisfied with initiative, influence, training and skills. On the other hand, the results obtained for age is similar to findings in existing literature; older employees are more satisfied than younger

employees (Wood, 2008; Gazioglu and Tansel, 2006; Clark et al., 1996; Wood and de Menezes, 2011). The result shows that employees who are 30 and above are more likely to be satisfied with achievement and the work itself than employees who are in the age range of 16 and 29. This finding regarding age may be due to the fact that older employees have some work values that make job characteristics more desirable and are less attractive to younger employees. It could also possibly be the case of fewer expectations by older employees.

7.11 Conclusion

This study gains strength from the fact that it is based on a large representative sample of workplaces and it merges both workplace-level and employee-level data. This combination of data that rely on responses from HR personnel and employees within workplaces reduces the likelihood of common method variation. One limitation of this study is that it is a cross sectional study and the workplace-level variables are based on the response of a single HR personnel. Concerns relating to the use of single-respondent measures have been raised (Gerhart et al., 2000) as such measures are suggested to be prone to significant random errors. Additionally, the HR personnel may have a restricted view about the HR practices in place. Also, this study is the first of its kind to empirical test types of jobs proposed by the demand-control model as well as conduct such analyses for different forms of job satisfaction.

Chapter 8.   Conclusion

Lancaster's (1966a) consumer theory approach, extended to workplaces and tested in this thesis showed that individual forms of employees' engagement practices are better predictors of various forms of job satisfaction than collective forms.

In the context of employees' engagement practices, the dominance of collective forms of these practices in the job satisfaction literature raised the question of whether individual forms were better predictors of job satisfaction than collective forms since job satisfaction is about the individual appraisal of the job. The intrinsic nature of job satisfaction also reinforced the fact that individual forms of employees' engagement practices were more likely to motivate employees to use their creativity and contribute to the success of the organisation. Moreover, while accounting for the fact that some employees may be intrinsically motivated, rewarding performance extrinsically was also observed to be subjective in some cases and this raised concerns about fairness of rewards and the process. Non-discriminatory working environment was suggested to complement the presence of employees' engagement practices. Further, Karasek (1979) and other studies on demand-control model observed and emphasised the need to consider job demands and appropriate workplace practices that may moderate the negative effects of job demands when analysing job satisfaction.

The contribution of this thesis to the debate surrounding engagement practices entails individual forms of employees' engagement practices as important determinants of job satisfaction as well as accounting for essential job characteristics, employee characteristics and workplace characteristics. In chapter 5, we extended Lancaster's (1966a) consumer theory approach to workplaces by including Karasek's model, which accounted for the presence of job demand. This approach formed the basis of the utility function that was explored in this study and it emphasised that employees maximized utility based on workplace environment characteristics and utility maximization is subject to a constraint, which is job demand. As such, we were able to incorporate a Work Psychology model into an Economics model and obtained some meaningful results. The approach showed the importance of examining individually, different forms of job satisfaction including the specificities of participation in decisions, job control, management styles and

performance pay predictors rather than combining specific aspects of these practices or forms of job satisfaction into one single index. By exploring and extending this consumer theory approach to workplaces, two major results were observed and hypotheses were tested in chapters 6 and 7. First, individual forms of employees' participation and involvement were significant predictors of job satisfaction when compared to collective forms of employees' participation (joint consultative committees). In chapter 6, we observed that when employees: have control over their jobs, are able to participate in decision making individually, they are consulted by managers and allowed to influence final decisions and they are rewarded individually for performance, they are more likely to be satisfied with the job. However, joint consultative committees were not significantly related to any form of job satisfaction. Further, the impact of individualised engagement practices on different forms of job satisfaction was not only contingent on the individual but also on the joint presence of these practices.

Second, employees' engagement practices were re-evaluated in the context of Karasek's model because employees' involvement (job control) was found to be a significant determinant of all the forms of job satisfaction in chapter 6. This model had been majorly examined in the context of job stress and mental wellbeing of employees and these studies have not been able to empirically examine the types of jobs proposed in the model. By empirically testing these job types in our study, we were able to provide an extension of findings on the demand-control model. Apart from investigating the effects of different job types suggested in the demand-control model, we also extended Karasek's model to account for the significance of non-discriminatory workplace environment in chapter 7. The analyses suggested that employees' engagement practices were associated with job demand. Although we found that the availability of more control opportunities as suggested in previous studies (chapter 4) and in the model (chapter 5) moderated the negative effects of job demand on various forms of job satisfaction. The test of the significance of EO policies in workplaces showed the complementary and moderating nature of such policies. EO policies reinforced the presence of job control and employees were more likely to be satisfied with achievement, the use of initiative, the level of their influence and the work itself. On the other hand, EO policies moderated the negative effects of job demand on job satisfaction.

Accounting for certain job characteristics, informative, supportive and consultative styles of management were found to be important for job satisfaction analyses. Moreover, we found opposite effects for different dimensions of intrinsic motivation. While being loyal and proud of the workplace were positively associated with pay satisfaction, the use of initiative to carry out tasks that are not required as part of the job was found to be negatively associated with pay satisfaction. This implies that such motivation is important for job satisfaction analyses and it does not offset extrinsic motivation as argued in the literature. The use of 2011WERS showed contrary to previous studies that male employees were more likely to be satisfied with initiative, influence, training and skills. Also, having a higher degree (like MSc) was associated with increases in satisfaction with training and pay.

Contrary to expectations, employees in the public sector exhibited less satisfaction with job security. This was surprising as public sector is argued to be regulated and associated with less uncertainty. Testing for the endogenous nature of union membership, we observed an exogenous nature for all forms of job satisfaction except satisfaction with initiative and pay. The union membership coefficients suggested that employees are more likely to join unions so as to increase their bargaining power and improve their working conditions while some may join unions so that they can voice their dissatisfaction about the lack of initiative use. Comparing the base and selection effects models, we found a significant change in the joint consultative committees' coefficients. These committees were negatively related to satisfaction with influence and job security.

A theoretical implication of this thesis is that the utility function should be advanced to incorporate other variables such as employees' engagement practices that significantly impact on employees' on-the-job utility. This research study has shown that influences on employees' utility extend beyond receiving income and having more leisure time. Also, the utility function should be considered in the form of employees' satisfaction with different aspects of the job as overall job satisfaction index may not adequately account for satisfaction with different aspects of the job.

Empirical findings of this study provide insight about the importance of analysing different forms of job satisfaction and employees' engagement practices. We observed effects of different types of employees' engagement practices on different forms of job satisfaction whilst controlling for job, employee and workplace

characteristics. Also, these findings have significant implications for the presence of EO policies in workplaces. We found that EO policies not only complement the presence of job control, they also moderate the negative effects of job demands on different forms of job satisfaction.

A practical implication for employers is that certain types of employees' engagement practices have significant positive effects on certain types of job satisfaction and effort may be concentrated on practices such as job control and perception of a secure job that have significant positive effects across all types of job satisfaction. Also, this research study suggested that continued efforts are needed to make individual incentives more accessible to employees; however, this should be done in a way that work intensity and competition do not offset the positive effects of such incentives. Employers should note that when employees give valuable suggestions during the decision making process, they prefer to be rewarded individually for their efforts rather than being subject to the team sharing norm. By receiving such rewards, employees are more likely to be satisfied with their achievement, pay received in the workplace and their involvement in the decision-making process.

Furthermore, the information provided in this research study about different job types can be used to develop targeted interventions aimed at appropriately balancing job demand and job control. As our findings suggest, employees are less likely to be satisfied with different aspects of the job when they are in passive or high strain jobs. As such, management should concentrate on ensuring the right balance when control opportunities are made available to employees. Another practical implication of this study is that employers should invest in non-discriminatory work environments so that employees' engagement practices are more effective. The presence of such policies does not necessarily have significant individual effects on various forms of job satisfaction; moreover, the joint implementation of these policies and job control has greater positive effects on different forms of job satisfaction.

Taken together, these findings support recommendations that employers should always consider employees' engagement practices that are individual-inclined rather than collective-inclined when seeking ways of improving job satisfaction. This is because job satisfaction relates to individual employees' appraisal of the job and implementation of collective forms of these practices may not improve job

satisfaction. For example, Network Rail's model of wellbeing is good for improving job satisfaction. By model of wellbeing, we mean the range of benefits employees of Network Rail are entitled to. Most of the employees' benefits such as subsidized rail travel, employee assistance programme, childcare vouchers, bonus scheme, interest free travel loans and 'save on brand names' are individualised in nature. All these benefits address each employee's needs and an employee's appraisal of the job will be based on how effective these practices meet his/her needs.

This thesis gains strength from the fact that it is based on a large representative sample of workplaces and employees in Britain. Also, the empirical focus of this study was comprehensive. We investigated nine forms of job satisfaction whilst examining the impact of each dimension of the predictors. We controlled for missing values by using the 'dummy variable adjustment' and imputation methods. By doing this, we avoided loss of information that may result from the deletion of missing cases. Moreover, we explored the richness of the data by adequately controlling for factors that are important for job satisfaction analyses. Finally, we addressed the important issue of endogeneity that may be associated with union membership.

Further work needs to be done to determine any differences in the way male and female employees appraise their jobs. This can be done by conducting separate job satisfaction analyses for male and female employees. Future estimations should also consider the effects of participatory practices on perceived level of job control. The effects of these practices on job satisfaction may be indirect through employees' perceived level of job control in the workplace. Also it will be interesting to examine the effects of employees' engagement practices on quitting by using the British Household Panel Survey (BHPS). Another possible area of future research would be to investigate using data from Network Rail, whether the standard company bonus scheme improves job satisfaction and/or increases work intensity and competition among employees.

Bibliography

Aghion, P. and Tirole, J. 1997. Formal and Real Authority in Organisations. *The Journal of Political Economy*, **105**(1), pp. 1-29.

Akerboom, S. and Maes, S. 2006. Beyond demand and control: The contribution of organisational risk factors in assessing the psychological wellbeing of health care employees. *Work & Stress.* **20**(1), pp.21-36.

Akerlof, G. A. 1982. Labor Contracts as Partial Gift Exchange. *Quarterly Journal of Economics,* **97**(4), pp.543-569.

Alchian, A., and Demsetz, H. 1972. Production, Information costs and Economic Organisation. *American Economic Review*, **62**(5), 777-795.

Anderson, T. W. 1963. Asymptotic theory for principal component analysis. *Annals of Mathematical Statistics.* **34**(1), pp.122–148.

Appelbaum, E., Bailey, T., Berg, P. and Kalleberg, A.L. 2000. Manufacturing advantage: Why high-performance work systems pay off. Ithaca and London: Cornell University Press.

Askenazy, P. 2001. Innovative Workplace Practices and Occupational Injuries and Illnesses in the United States. *Economic and Industrial Democracy,* 22**,** 485-516.

Askenazy, P. and Caroli, E. 2010. Innovative Work Practices, Information Technologies and Working Conditions: Evidence for France. *Industrial Relations.* **49**(4), pp.544-565.

Baba, V. V., Tourigny, L., Wang, X., Lituchy, T. and Monserrat S.I. 2009. Stress among Nurses: A Multi-Nation Test of the Demand-control-Support Model. *Academy of Management Annual Meeting Proceedings*. pp.1-6.

Bae, K.-S., Chuma, H., Kato, T. Kim, D.-B. and Ohashi, I. 2011. High Performance Work Practices and Employee Voice: A Comparison of Japanese and Korean Workers. *Industrial Relations: A Journal of Economy and Society.* **50**(1), pp.1-29.

Baillien, E., De Cuyper, N. and De Witte, H. 2011. Job autonomy and workload as antecedents of workplace bullying: A two-wave test of Karasek's Job Demand Control Model for targets and perpetrators. *Journal of Occupational & Organisational Psychology.* **84**(1), pp.191-208.

Bakan, I., Suseno, Y., Pinnington, A. and Money, A. 2004. The influence of financial participation and participation in decision-making on employee job

attitudes. *International Journal of Human Resource Management.* **15**(3)**,** 587-616.

Bandiera, O., Barankay, I. and Rasul, I. 2012. Team Incentives: Evidence from a Firm Level Experiment. Discussion paper No. 6279, Institute for the Study of Labour/IZA, Bonn.

Barling, J., Kelloway, E. K., and Iverson, R. D. (2003). High-quality work, job satisfaction and occupational injuries. *Journal of Applied Psychology*. **88**(2), pp.276–283.

Bartling, B., Fehr, E. and Schmidt, K. M. 2012. Screening, Competition, and Job Design: Economic Origins of Good Jobs. *American Economic Review*. **102**(2), pp.834–864.

Batt, R. 2002. Managing Customer Services: Human Resource Practices, Quit Rates, and Sales Growth. *The Academy of Management Jo*urnal, 45(3), pp.587-597.

Bauer, T. 2004. High Performance Workplace Practices and Job Satisfaction: Evidence from Europe. *RWI-Mitteilungen*. **54/55** (1), pp.57-85.

Bayo-Moriones, A. and Merino-DíAz De CeRIO, J. 2001. Quality management and high performance work practices: Do they coexist? *International Journal of Production Economics,* **73**(3), pp.251-259.

Beehr, T. A., King, L. A. and King, D. W. 1990. Social support and occupational stress: Talking to supervisors. *Journal of Vocational Behaviour*. **36**(1), pp.61-81.

Beehr, T. A., Jex, S. M., Stacy, B. A., and Murray, M. A. 2000. Work stressors and coworker support as predictors of individual strain and job performance. *Journal of Organisational Behavior*. **21**(4), 391-405.

Beehr, T. A., Glaser, K.M., Canali, K.G., and Wallwey, D.A. 2001. Back to basics: Re-examination of Demand-control Theory of occupational stress. *Work & Stress*, **15**(2), pp.115-130.

Bell, B., and Van Reenen, J. 2011. Firm Performance and Wages: Evidence from across the Corporate Hierarchy. Centre for Economic Performance (CEP) Discussion paper No 1088.

Benabou, R. and Tirole, J. 2003. Intrinsic and extrinsic motivation. *The Review of Economic Studies*, **70**(3), pp.489-520.

Benabou, R. and Tirole, J. 2006. Incentives and Prosocial Behaviour. *American Economic Review*, **96**(5), pp.1652–78.

Bender, K.A., Green, C. and Heywood, J.S. 2010. Piece Rates and Workplace Injury: Does Survey Evidence Support Adam Smith? (online). Lancaster University Management School Working Paper 2010/019. (Accessed 30 September 2011). Available from: http://lums.lancs.ac.uk/publications

Ben-Ner, A. and Jones, D.C. 1995. Employee Participation, Ownership, and Productivity: A Theoretical Framework. *Industrial Relations: A Journal of Economy and Society.* **34**(4), pp.532-554.

Berg, P. 1999. The Effects of High Performance Work Practices on Job Satisfaction in the United States Steel Industry. *Industrial Relations*, **54**(1), pp.111-135.

Berg, J., Dickhaut, J. and McCabe, K. 1995. Trust, Reciprocity, and Social History. *Games and Economic Behavior*, **10**(1), pp.122-142.

Berger, C. J., Olson, C. A., and Boudreau, J. W. 1983. Effects of unions on job satisfaction: The role of work-related values and perceived rewards. *Organisational Behaviour and Human Performance*, **32**(3), pp.289-324.

Bergman, P. N., Ahlberg, G., Johansson, G., Stoetzer, U., Aborg, C., Hallsten, L., and Lundberg, I. 2012. Do job demand and job control affect problem-solving? *Work*, **42**(2), pp.195-203.

Besley, T., and Ghatak, M. 2008. "Status Incentives." *American Economic Review*, **98**(2), pp.206-11.

Black, S.E. and Lynch, L.M. 2001. How to Compete: The Impact of Workplace Practices and Information Technology on Productivity. *Review of Economics and Statistics.* **83**(3), pp.434-445.

Black, S.E. and Lynch, L.M. 2004. What's driving the new economy? The benefits of workplace innovation. *The Economic Journal.* **114**(493), pp.F97-F116.

Bliese, P. D. and Castro, C. A. 2000. Role clarity, work overload and organisational support: multi-level evidence of the importance of support. *Work & Stress*, **14**(1), pp.65-73.

Bluestone, I. 1977. Creating a new world of work. *International Labour Review.* **115**(1), p1-11.

Borjas, G. J. 1979. Job Satisfaction, Wages and Unions. *Journal of Human Resources*, **14**(1), pp.21-40.

Bowles, S. 1998. Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions. *Journal of Economic Literature*, **36**(1), pp.75-111.

Bowles, S. and S. Polania-Reyes. 2012. Economic Incentives and Social Preferences: Substitutes or Complements? *Journal of Economic Literature*, **50**(2), pp.368-425.

Boyer, G. R. 1988. What Did Unions Do in the Nineteenth Century Britain? *Journal of Economic History*, 48(2), pp.319-332.

Bradley, G. 2007. Job tenure as a moderator of stressor-strain relations: A comparison of experienced and new-start teachers. *Work & Stress*, **21**(1), pp.48-64.

Brough, P. and Pears, J. 2004. Evaluating the Influence of the type of Social Support on Job Satisfaction and Work Related Psychological Wellbeing. *International Journal of Organisational Behaviour*, **8**(2), pp.472-485.

Brown, G. D. A., Gardner, J., Oswald, A. J. and Qian, J. 2008. Does Wage Rank Affect Employees' Wellbeing? *Industrial Relations: A Journal of Economy and Society*, **47**(3), 355-389.

Bryson, A., Cappellari, L. and Lucifora, C. 2004. Does Union Membership Really Reduce Job Satisfaction? *British Journal of Industrial Relations*, **42**(3), pp.439-459.

Bryson, A., Forth, J., and Kirby, S. 2005. High-Involvement Management Practices, Trade Union Representation and Workplace Performance in Britain. *Scottish Journal of Political Economy*, **52**(3), pp.451-491.

Bryson, A., Cappellari, L. and Lucifora, C. 2010. Why So Unhappy? The Effects of Unionization on Job Satisfaction*. *Oxford Bulletin of Economics and Statistics*, **72**(3), pp.357-380.

Bryson, A., Barth, E. and Dale-Olsen, H. 2013. The Effects of Organisational Change on Worker Wellbeing and the Moderating Role of Trade Unions. *Industrial and Labour Relations Review*, **66**(4), pp.989-1011.

Buchko, A.A. 1993. The Effects of Employee Ownership on Employee Attitudes: An Integrated Causal Model and Path Analysis. *Journal of Management Studies*. **30**(4), pp.633-657.

Burdín, G. and Dean, A. 2009. New evidence on wages and employment in worker cooperatives compared with capitalist firms. *Journal of Comparative Economics*. **37**(4), pp.517-533.

Butler, A.B., Grzywacz, J.G., Bass, B.L., and Linney, K.D. 2005. Extending the demand-control model: A daily diary study of job characteristics, work-

family conflict and work-family facilitation. *Journal of Occupational & Organisational Psychology*. **78**(2), pp.155-169.

Canjuga, M., Läubli, T., and Bauer, G. 2010. Can the job demand control model explain back and neck pain? Cross-sectional study in a representative sample of Swiss working population. *International Journal of Industrial Ergonomics*. **40**(6), pp.663-668.

Cappelli, P. and Neumark, D. 2001. Do 'High-Performance' Work Practices Improve Establishment-Level Outcomes? *Industrial and Labor Relations Review*, **54**(4), pp.737-775.

Card, D., Mas, A., Moretti, E., and Saez, E. 2012. Inequality at Work: The Effect of Peer Salaries on Job Satisfaction. *American Economic Review*, 102(6), pp.2981-3003.

Caroli, E. and Godard, M. 2014. Does job insecurity deteriorate health? *Health Economics.* pp.n/a-n/a.

Chambel, M.J. and Curral, L. 2005. Stress in Academic Life: Work Characteristics as Predictors of Student Wellbeing and Performance. *Applied Psychology*: An International Review. **54**(1), pp.135-147.

Chi, W., Freeman, R. B. & Kleiner, M. M. 2011. Adoption and Termination of Employee Involvement Programs. *Labour,* **25**(1), 45-62.

Choobineh, A.R., Peyvandi Sani, G.R., Sharif Rohani, M., Gangi Pour, M., and Neghab, M. 2009. Perceived demand and musculoskeletal symptoms among employees of an Iranian petrochemical industry. *International Journal of Industrial Ergonomics*. **39**(5), pp.766-770.

Clark, A. E. 1996. Job Satisfaction in Britain. *British Journal of Industrial Relations*, **34**(2), pp.189-217.

Clark, A.E. 1997. Job satisfaction and gender: Why are women so happy at work? *Labour Economics.* **4**(4), pp.341-372.

Clark, A. E. and Oswald, A. J. 1996. Satisfaction and comparison income. *Journal of Public Economics*, **61**(3), pp.359-381.

Clark, A., Oswald, A and Warr, P. 1996. Is job satisfaction U-shaped in age? *Journal of Occupational and Organisational Psychology*. **69**(1), pp.57-81.

Colombo, M. G., Delmastro, M., and Rabbiosi, L. 2007. 'High Performance' Work Practices, Decentralization, and Profitability: Evidence from Panel Data. *Industrial and Corporate Change*, **16**(6), pp.1037-1067.

Cooke, W. N. 1994. Employee Participation Programs, Group-based Incentives and Company Performance: A Union-Non-union Comparison. *Industrial and Labour Relations Review*, **47**(4), pp.594-609.

Cornelissen, T., Heywood, J. S. and Jirjahn, U. 2011. Performance pay, risk attitudes and job satisfaction. *Labour Economics*. **18**(2), pp.229-239.

Cottini E. and C. Lucifora. 2013. Mental Health and Working Conditions in Europe. *Industrial and Labour Relations Review*, **66**(4), pp.958-988.

Cox, A., Zagelmeyer, S. and Marchington, M. 2006. Embedding employee involvement and participation at work. *Human Resource Management Journal*. **16**(3), 250-267.

Cox, A., Marchington, M. and Suter, J. 2009. Employee involvement and participation: developing the concept of institutional embeddedness using WERS2004. *International Journal of Human Resource Management*. **20**(10), 2150-2168.

Dalgard, O. S., Sørensen, T., Sandanger, I., Nygard, J.F., Svensson, E. and Reas, D.L. 2009. Job demand, job control, and mental health in an 11-year follow-up study: Normal and reversed relationships. *Work & Stress*, **23**(3), pp.284-296.

Daniels, K., Wimalasiri, V., Cheyne, A., and Story, V. 2011. Linking the demand-control-support model to innovation: The moderating role of personal initiative on the generation and implementation of ideas. *Journal of Occupational & Organisational Psychology*, **84**(3), 581-598.

Dawal, S. Z., Taha, Z., and Ismail, Z. 2009. Effect of job organisation on job satisfaction among shop floor employees in automotive industries in Malaysia. International *Journal of Industrial Ergonomics*, **39**(1), pp.1-6.

De Jonge, J., Van Breukelen, G. J. P., Landeweerd, J. A. and Nijhuis, F. J. N. 1999. Comparing Group and Individual Level Assessments of Job Characteristics in Testing the Job Demand-control Model: A Multi-level Approach. *Human Relations*, **52**(1), pp.95-122.

Delbridge, R. and Whitfield, K. 2001. Employee Perceptions of Job Influence and Organisational Participation Employee Perceptions. Industrial Relations: *A Journal of Economy and Society*, **40**(3), pp.472-489.

Delfgaauw, J. 2007. The effect of job satisfaction on job search: Not just whether, but also where. *Labour Economics*, **14**(3), pp.299-317.

De Rijk, A. E., Le Blanc, P. M., and Schaufeli, W. B. 1998. Active coping and need for control as moderators of the job demand-control model: Effects on burnout. *Journal of Occupational & Organisational Psychology,* **71**(1), pp.1-18.

De Witte, H., Verhofstadt, E., and Omey, E. 2007. Testing Karasek's learning and strain hypotheses on young workers in their first job. W*ork & Stress*, **21**(2), pp.131-141.

Dickinson, A.M. 1989. The Detrimental effects of Extrinsic Reinforcements on "Intrinsic Motivation". *The Behaviour Analys*t, **12**(1), pp.1-15.

Dohmen, T., and Falk, A. 2011. Performance Pay and Multidimensional Sorting: Productivity, Preferences, and Gender. *American Economic Review*, **101**(2), pp.556–590.

Dollard, M. F., Winefield, H.R., Winefield, A.H., and De Jonge, J. 2000. Psychosocial job strain and productivity in human service workers: A test of the demand--control--support model. *Journal of Occupational & Organisational Psychology*, **73**(4), pp.501-510.

Drago, R. and M. Wooden. 1992. The Determinants of Labor Absence: Economic Factors and Workgroup Norms across Countries. *Industrial and Labor Relations Review*, **45**(4), pp.764-778.

Drake, B. and Mitchell, T. 1977. The Effects of Vertical and Horizontal Power on Individual Motivation and Satisfaction. *Academy of Management Journal.* **20**(4), pp.573-591.

Driscoll, J.W. 1978. Trust and Participation in Organisational Decision-making as Predictors of Satisfaction. *Academy of Management Journal.* **21**(1), pp.44-56.

Drydakis, N. 2012. Men's Sexual Orientation and Job Satisfaction. Discussion paper No. 6272, Institute for the Study of Labour/IZA, Bonn.

Duflo, E., Hanna, R. and Ryan, S. P. 2012. Incentives Work: Getting Teachers to Come to School. *American Economic Review*, **102**(4), pp.1241-1278.

Durrant, G.B. 2005. Imputation Methods for Handling Item-Nonresponse in the Social Sciences: A Methodological Review. ESRC National Centre for Research Methods and Southampton Statistical Sciences Research Institute, NCRM Methods Review Papers (NCRM/002).

Ellingsen, T., and Johannesson, M. 2007. Paying Respect. *Journal of Economic Perspectives*, **21**(4), pp.135–149.

Ellingsen, T. and Johannesson, M. 2008. Anticipated verbal feedback induces altruistic behaviour. *Evolution and Human Behaviour*, **29**(2), pp.100-105.

Evans, M. G. and Ondrack, D. A. 1990. The Role of Job Outcomes and Values in Understanding the Union's Impact on Job Satisfaction: A Replication. *Human Relations*, **43**(5), pp.401-418.

European Working Conditions Observatory (EWCO). 2009. EWCO's website [online]. [Accessed 28 February 2012]. Available from: http://www.euurofound.europa.eu/ewco/2009/10/UK0910059I.htm

Fakhfakh, F. and Perotin, V. 2011. Profit Sharing, Work Pressure and Productivity. Paper presented at the International Economics Association, 2011, Beijing.

Fakhfakh, F. 2004. The effects of Profit Sharing and Employee Share Ownership on Quits: Evidence from a panel of French FIRMS. In: V. Perotin and A. Robinson, eds. Employee Participation, Firm Performance and Survival: Advances in the Economic Analysis of Participatory and Labour-Managed Firms. Oxford: Elsevier Ltd, **8**, pp.129-147.

Farrell, D. and Rusbult, C.E. 1981. Exchange variables as predictors of job satisfaction, job commitment, and turnover: The impact of rewards, costs, alternatives, and investments. *Organisational Behavior and Human Performance*. **28**(1), pp.78-95.

Fehr, E. and Fischbacher, U. 2002. Why Social Preferences Matter – The Impact of Non-Selfish Motives on Competition, Cooperation and Incentives. *The Economic Journal*, **112**(478), Pp.C1-C33.

Fehr, E. and List, J. A.. 2004. The Hidden Costs and Returns of Incentives—Trust and Trustworthiness among CEOs. *Journal of the European Economic Association*, **2**(5), pp.743-771.

Freeman, R. B. and M. M. Kleiner. 2000. Who Benefits Most from Employee Involvement: Firms or Workers? *AEA Papers and Proceedings*, **90**(2), 219–223.

Freeman, R. B. 1978. Job Satisfaction as an Economic variable. In: Ninetieth Annual Meeting of the American Economic Association, May 1978. *The American Economic Review,* **68**(2), pp.135-141.

French, J. L. and Rosenstein, J. 1984. Employee ownership, work attitudes and power relationships. *The Academy of Management Journal*. **27**(4), pp.861-869.

Frey, B.S., and Jegen, R. 2001. Motivation Crowding Theory. *Journal of Economic Surveys*, **15**(5), pp.589-611.

Gazioglu, S. and Tansel, A. 2006. Job Satisfaction in Britain: Individual and Job Related Factors. *Applied Economics*, **38**(10), pp.11633-1171.

Gerhart, B., Wright, P. M., Mc Mahan, G. C., and Snell, S. A. 2000. Measurement Error in Research on Human Resources and Firm Performance: How Much Error is there and how does it Influence Effect Size Estimates? *Personnel Psychology*, **53**(4), 803-834.

Gneezy, U. 2003. The W effect of incentives. UCLA Department of Economics.

Gneezy, U., and Rustichini, A. 2000. Pay enough or Don't Pay At All. *The Quarterly Journal of Economics*, **115**(3), pp. 791-810.

Gneezy, U., Meier, S. and Rey-Biel, P. 2011. When and Why Incentives (Don't) Work to Modify Behavior. *Journal of Economic Perspectives*, **25**(4), pp.191-210.

Goerg, S. J., Kube, S. and Zultan, R. 2010. Treating Equals Unequally: Incentives in Teams, Workers' Motivation and Production Technology. *Journal of Labour Economics*, **28**(4), pp.747-772.

Gordon, M. E. and Denisi, A. S. 1995. A Re-Examination of the Relationship between Union Membership and Job Satisfaction. *Industrial and Labor Relations Review*, **48**(2), pp.222-236.

Green, F. 2004. Why Has Work Effort Become More Intense? Industrial Relations: *A Journal of Economy and Society*, **43**(4), pp.709-741.

Greene, W.H. 2012. Econometric Analysis (7th Edition). England: Pearson Education Limited.

Grönlund, A. 2007. More Control, Less Conflict? Job Demand–Control, Gender and Work–Family Conflict. Gender, *Work & Organisation*, **14**(5), pp.476-497.

Grunberg, L., Moore, S. and Greenberg, E. 1996. The Relationship of Employee Ownership and Participation to Workplace Safety. *Economic and Industrial Democracy*, **17**(2), pp.221-241.

Grund, C., and Schmitt, A. 2011. Works Council, Wages and Job Satisfaction. Discussion Paper No. 5464, Institute for the Study of Labour/IZA, Bonn.

Guest, D.E., Michie, J., Conway, N., and Sheehan, M. 2003. Human Resource Management and Corporate Performance in the UK. *British Journal of Industrial Relations*, **41**(2), pp.291-314.

Haile, G., Bryson, A., and White, M. 2012. Heterogeneity in Union Status and Employee Wellbeing. Discussion Paper No. 7075, Institute for the Study of Labour/IZA, Bonn.

Hamermesh, D. S. 1976. Economic Considerations in Job Satisfaction Trends. *Industrial Relations: A Journal of Economy and Society*, **15**(1), pp.111-114.

Hammer, T.H. and Stern, R.N. 1980. Employee Ownership: Implications for the organisational distribution of power. *The Academy of Management Journal*. **23**(1), pp.78-100.

Hammermann, A., and Mohnen, A. 2012. Who benefits from benefits? Empirical Research on Tangible Incentives. Discussion Paper No. 6284, Institute for the Study of Labour/IZA, Bonn.

Hirschman, A.O. 1970. Exit, Voice, and Loyalty: Responses to Decline in Firms, Organisations, and States. Cambridge, Massachusetts: Harvard University Press.

Hoque, K., and Noon, M. 2004. Equal Opportunities Policies and Practice in Britain: Evaluating the 'Empty Shell' Hypothesis. *Work, Employment and Society*, **18**(3), pp.481-506.

Huang, F. and Cappelli, P. 2010. Applicant Screening and Performance-Related Outcomes. *AEA Papers and Proceedings*, **100**(2), pp.214–218.

Huselid, M. A. 1995. The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *The Academy of Management Journal*, **38**(3), pp.635-672.

Huselid, M.A. and Becker, B.E. 1996. Methodological Issues in Cross-Sectional and Panel Estimates of the Human Resource-Firm Performance Link. *Industrial Relations: A Journal of Economy and Society*. **35**(3), pp.400-422.

Ichniowski, C. and Shaw, K. 2003. Beyond Incentive Pay: Insiders' Estimates of the Value of Complementary Human Resource Management Practices. *The Journal of Economic Perspectives*. **17**(1), pp.155-180.

Jackson, T. 2005. Motivating Sustainable Consumption: A Review of Evidence on Consumer Behaviour and Behavioural Change [online]. A report to the Sustainable Development Research Network. [Accessed 08 August 2012]. Available from: http://www.sd-research.org.uk/wp-content/uploads/motivatingscfinal_000.pdf

James, P., and Kyprianou, A. 2000. Safety representatives and committees in the NHS: a healthy situation? *Industrial Relations Journal*, 31(1), pp.50-61.

Janssen, P.P.M., Bakker, A.B. and De Jong, A. 2001. A Test and Refinement of the Demand-control-Support Model in the Construction Industry. *International Journal of Stress Management,* **8**(4), pp.315-332.

Jensen, M. C. and Mecklin, W. H. 1979. Rights and Production Functions: An Application to Labor-Managed Firms and Codetermination. *The Journal of Business*, **52**(4), pp.469-506.

Johnson, J.V. and Hall, E.M. 1988. Job Strain, Workplace Social Support and Cardiovascular Disease: A Cross sectional Study of a Random Sample of the Swedish Working Population. *American Journal of Public Health*. **78**(10), pp.1336-1342.

Karasek, R. A.,1979. Job Demand, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, **24**(2), pp.285-308.

Karasek, R. A. 2004. An Analysis of 19 International Case Studies of Stress Prevention Through Work Reorganisation Using the Demand/Control Model. *Bulletin of Science, Technology & Society*, **24**(5), pp.446-456.

Karasek, R.A. and Theorell, T. 1990. Healthy Work: Stress, Productivity and the Reconstruction of Working Life. New York: Basic Books.

Karasek, R., Baker, D., Marxer, F., Ahlbom, A., and Theorell, T. 1981. Job Decision Latitude, Job Demand, and Cardiovascular Disease: A Prospective Study of Swedish Men. *American Journal of Public Health*, **71**(7), pp.694-705.

Kato, T. and Morishima, M. 2002. The Productivity Effects of Participatory Employment Practices: Evidence from New Japanese Panel Data. *Industrial Relations*. **41**(4), pp. 487-520.

Kawada, T. and Otsuka, T. 2011. Relationship between job stress, occupational position and job satisfaction using a brief job stress questionnaire (BJSQ). *Work*, **40**(4), pp.393-399.

Kim, D.O. 2005. The Benefits and Costs of Employee Suggestions under Gainsharing. *Industrial and Labor Relations Review*, **58**(4), pp.631-652.

Kling, J. 1995. High Performance Work Systems and Firm Performance. *Monthly Labor Review*. **118**(5), pp.29-36.

Knudsen, H., Markey, R. and Simpkin, G. 2013. Work environment and participation: the case of teachers in Denmark and New Zealand. *Industrial Relations Journal*. **44**(1), pp.38-56.

Kruse, D., Freeman, R., Blasi, J., Buchele, R., Scharf, A., Rodgers, L., and Mackin, C. 2004. Motivating Employee-Owners in ESOP Firms: Human Resource Policies and Company Performance. In: V. Perotin and A. Robinson, eds. Employee Participation, Firm Performance and Survival: Advances in the Economic Analysis of Participatory and Labour-Managed Firms. Oxford: Elsevier Ltd, 8, pp.101-127.

Kruse, D., Blasi, J., and Freeman, R. 2012. Does Linking Worker Pay to Firm Performance Help the Best Firms to do Even Better? NBER Working paper 17745. Cambridge, MA: National Bureau of Economic Research.

Kube, S., Marechal, M. A. and Puppe, C. 2012. The Currency of Reciprocity: Gift Exchange in the Workplace. *American Economic Review*, **102**(4), pp.1644-1662.

Kwakman, K. 2001. Work stress and work-based learning in secondary education: testing the Karasek model. *Human Resource Development International*. **4**(4), pp.487-501.

Lancaster, K.J. 1966a. A New Approach to Consumer Theory. *Journal of Political Economy*. **74**(2), pp.132-157.

Lancaster, K. J. 1966b. Change and Innovation in the Technology of Consumption. *The American Economic Review*, **56**(1/2), pp.14-23.

Larsman, P. and Hanse, J.J. 2009. The impact of decision latitude, psychological load and social support at work on the development of neck, shoulder and low back symptoms among female human service organisation workers. *International Journal of Industrial Ergonomics*. **39**(2), pp.442-446.

Lazear, E.P. 2000. Performance pay and productivity. *American Economic Review*. **90**(5), pp.1346-1361.

Lazear, E. D. 2011. An Economic Analysis of Works Council. In: S. Altmann and K. F. Zimmermann, eds. Inside the Firm: Contributions to Personnel Economics. Oxford: Oxford University Press, pp100-127.

Lazear, E.P. and Shaw, K.L. 2007. Personnel Economics: The Economist's View of Human Resources. *Journal of Economic Perspectives*. **21**(4), pp.91-114.

Lazear, E. P. 1986. Salaries and Piece Rates. *Journal of Business*, **59**(3), pp.405-431.

Leibenstein, H. 1978. General X-Efficiency Theory and Economic Development. New York: Oxford University Press.

Leigh, D. E. 1986. Union Preferences, Job Satisfaction, and the Union-Voice Hypothesis. Industrial Relations: *A Journal of Economy and Society*, **25**, 65-71.

Levine, D. I. 1995. Reinventing the Workplace: How Business and Employees Can Both win [online]. Washington DC: Brookings Institution. [Accessed15 May 2012]. Available from: http://books.google.co.uk/books/about/Reinventing_the_Workplace.html?id=toD_MXe1pSsC

Lévy-Garboua, L., Montmarquette, C. and Simonnet, V. 2007. Job satisfaction and quits. *Labour Economics*, **14**(2) 251-268.

Locke, E.A. 1969. What is job satisfaction? *Organisational Behavior and Human Performance*. **4**(4), pp.309-336.

Lourel, M., Abdellaoui, S., Chevaleyre, S., Paltrier, M. and Gana, K. 2008. Relationships between Psychological Job Demand, Job Control and Burnout among Fire fighters. North *American Journal of Psychology*, **10**(3), pp.489-495.

Lucifora, C., and Origo, F. 2012. Performance Related Pay and Form Productivity: New Evidence from Quasi-Natural Experiment in Italy. Discussion Paper No. 6483, Institute for the Study of Labour/IZA, Bonn.

Macduffie, J. P. 1995. Human Resource Bundles and Manufacturing Performance: Organisational Logic and Flexible Production Systems in the World Auto Industry. *Industrial and Labor Relations Review*, **48**(2), pp.197-221.

Macky, K. and Boxall, P. 2008. High-involvement work processes, work intensification and employees' wellbeing: A study of New Zealand worker experiences. *Asia Pacific Journal of Human Resources*, **46**(1), pp.38-55.

Marcelissen, F. H. G., Winnubst, J. A. M., Buunk, B., and De Wolff, C. J. 1988. Social support and occupational stress: A causal analysis. *Social Science & Medicine*, **26**(3), pp.365-373.

Marmot, M. G., Stansfeld, S., Patel, C., North, F., Head, J., White, I., Brunner, E., Feeney, A., and Smith, G. D. 1991. Health inequalities among British civil servants: the Whitehall II study. *The Lancet*, **337**(8754), pp.1387-1393.

Mcclenahan, C. A., Giles, M. L. and Mallett, J.. 2007. The importance of context specificity in work stress research: A test of the Demand-control-Support model in academics. *Work & Stress*, **21**(1), pp.85-95.

Meng, R. 1990. The Relationship between Unions and Job Satisfaction. *Applied Economics*, **22**(12), pp.1635-1648.

Meng, X-L. 1994. Multiple-imputation inferences with uncongenial sources of input. *Statistical science*. **9**(4), pp.538-573.

Mikkelsen, A., Saksvik, P. O., Eriksen, H. R. and Ursin, H. 1999. The impact of learning opportunities and decision authority on occupational health. *Work & Stress*, **13**(1), pp.20-31.

Mikkelsen, A., Øgaard, T., and Landsbergis, P. 2005. The effects of new dimensions of psychological job demand and job control on active learning and occupational health. *Work & Stress: An International Journal of Work, Health and Organisations*. **19**(2), pp.153-175.

Milan, L., and Whittaker, J. C. 1995. Application of the parametric bootstrap to models that incorporate a singular value decomposition. Applied Statistics, **44**(1), pp.31–49.

Milgrom, P. and Roberts, J. 1995. Complementarities and fit strategy, structure, and organisational change in manufacturing. *Journal of Accounting and Economics*, **19**(2–3), pp.179-208.

Mohan, G. M., Elangovan, S., Prasad, P.S.S., Krishna, P.R., and Mokkapati, A.K. 2008. Prevalence of job strain among Indian foundry shop floor workers. *Work*, **30**(4), pp.353-357.

Mohr, R.D. and Zoghi, C. 2008. High-Involvement Work Design and Job Satisfaction. *Industrial and Labor Relations Review*. **61**(3), pp.275-296.

Morrison, D., Payne, R. L., Wall, T. D. 2003. Is Job a Viable Unit of Analysis? A Multi-level Analysis of Demand-control-Support Models. *Journal of Occupational Health Psychology*. **8**(3), pp.209-219.

Mulki, J. P., Lassk, F. G. and Jaramillo, F. 2008. The Effect of Self-Efficacy on Salesperson Work Overload and Pay Satisfaction. *Journal of Personal Selling & Sales Management*, **28**(3), pp.285-297

Näring, G., Briët, M., and Brouwers, A. 2006. Beyond demand–control: Emotional labour and symptoms of burnout in teachers. *Work & Stress*. **20**(4), pp.303-315.

Nielsen, I. and Smyth, R.. 2008. Job satisfaction and response to incentives among China's urban workforce. *The Journal of Socio-Economics*, **37**(5), pp.1921-1936.

Noblet, A. J. and Rodwell, J. J. 2009. Identifying the Predictors of Employees' health and Satisfaction in an NPM Environment. *Public Management Review*, **11**(5), pp.663-683.

Noblet, A. J., Mcwilliams, J., Teo, S. T. T. and Rodwell, J. J. 2006. Work characteristics and employees' outcomes in local government. *International Journal of Human Resource Management*, **17**(10), pp.1804-1818.

Origo, F. and Pagani, L. 2009. Flexicurity and job satisfaction in Europe: The importance of perceived and actual job stability for wellbeing at work. *Labour Economics.* **16**(5), pp.547-555.

Ouweneel, A. P. E., Taris, T.W., Van Zolingen, S.J. and Schreurs, P.J.G.. 2009. How Task Characteristics and Social Support Relate to Managerial Learning: Empirical Evidence From Dutch Home Care. *Journal of Psychology*, **143**(1), pp.28-44.

Panatik, S. A., O'driscoll, M. P. and Anderson, M. H. 2011. Job demand and work-related psychological responses among Malaysian technical workers: The moderating effects of self-efficacy. *Work & Stress*, **25**(4), pp.355-370.

Parhizi, S., Steege, L. M., and Pasupathy, K. S. 2013. Mining the relationships between psychosocial factors and fatigue dimensions among registered nurses. *International Journal of Industrial Ergonomics*. **43**(1), pp.82-90.

Park, R., D. Kruse and J. Sesil. 2004. Does Employee Ownership enhance Firm Survival? In: V. Perotin and A. Robinson, eds. Employee Participation, Firm Performance and Survival: Advances in the Economic Analysis of Participatory and Labour-Managed Firms. Oxford: Elsevier Ltd, 8, pp.3-33.

Patterson, M., Warr, P. and West, M. 2004. Organisational climate and company productivity: The role of employee affect and employee level. *Journal of Occupational and Organisational Psychology*, **77**(2), 193-216.

Paulsson, K., Ivergard, T. and Hunt, B. 2005. Learning at work: competence development or competence-stress. *Applied Ergonomics*. **36**(2), pp.135-144.

Peeters, M.A.G. and Rutte, C.G. 2005. Time Management Behavior as a Moderator for the Job Demand-control Interaction. *Journal of Occupational Health Psychology*. **10**(1), pp.64-75.

Pelfrene, E., Vlerick, P., Mak, R.P., De Smet, P., Kornitzer, M. and De Backer, G. 2001. Scale reliability and validity of the Karasek 'Job Demand-control-Support' model in the Belstress study. *Work & Stress*. **15**(4), pp.297-313.

Pencavel, J., Pistaferri, L. and Schivardi, F. 2006. Wages, employment and capital in capitalist and worker-owned firms. *Industrial and Labor Relations Review*. **60**(1), pp.23-44.

Pendleton, A. and Robinson, A. 2010. Employee Stock Ownership, Involvement, and Productivity: An Interaction-Based Approach. *Industrial & Labor Relations Review,* **64**(1), 3-29.

Perotin, V. and Robinson, A. 2000. Employee Participation and Equal Opportunities Practices: Productivity Effects and Potential Complementarities. *British Journal of Industrial Relations*. **38**(4), pp.557-583.

Perotin, V. and Robinson, A. 2003. Employee Participation in Profit and Ownership: A review of Issues and evidence. European parliament.

Perotin, V. 2015. Comments sent to Tolulope Akinfemisoye, 22 August.

Pfeffer, J. and Davis-Blake, A. 1990. Unions and Job Satisfaction: An Alternative View. *Work and Occupations*, **17**(3), pp.259-283.

Pisarski, A., Lawrence, S.A., Bohle, P. and Brook, C. 2008. Organisational influences on the work life conflict and health of shiftworkers. *Applied Ergonomics*. **39**(5), pp.580-588.

Pouliakas, K. 2010. Pay Enough, Don't Pay Too Much or Don't Pay at All? The Impact of Bonus Intensity on Job Satisfaction. *Kyklos*, **63**(4), pp.597-626.

Probst, T. M. 2000. Wedded to the job: Moderating effects of job involvement on the consequences of job insecurity. *Journal of Occupational Health Psychology*, **5**, pp.63-73.

Probst, T.M. 2005. Countering the Negative Effects of Job Insecurity Through Participative Decision-making: Lessons From the Demand--Control Model. *Journal of Occupational Health Psychology*. **10**(4), pp.320-329.

Ramsey, H., Scholarios, D. and Harley, B. 2000. Employees and High Performance Work Systems: Testing inside the Black Box. *British Journal of Industrial Relations*, **38**(4), pp.501-531.

Robinson, A.M. and Smallman, C. 2006. The contemporary British workplace: A safer and healthier place? *Work, employment and society*. **20**(1), pp.87–107.

Rodriguez, I., Bravo, M. J and Peiro, J.M. The Demand-Control-Support model, Locus of Control and Job Dissatisfaction: A Longitudinal Study. *Work & Stress*, **15**(2), pp.97-114.

Roelen, C. A. M., Koopmans, P. C. and Groothoff, J. W. 2009. Occupational rewards relate to sickness absence frequency but not duration. *Work*, **34**(1), pp.13-19.

Rooney, P. M. 1992. Employee ownership and worker participation: Effects on health and safety. *Economics Letters*, **39**, 323-328.

Ross, M., and Sicoly, F. 1979. Egocentric Biases in Availability and Attribution. *Journal of Personality and Social Psychology*, **37**(3), pp.322-336.

Rubin, D. B. 1987. Multiple Imputation for Nonresponse in Surveys. New York: Wiley.

Ryan, R. M. and Deci, E. L. 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, **25**(1), pp.54-67.

Sainfort, P.C. 1991. Stress, job control and other job elements: A study of office workers. *International Journal of Industrial Ergonomics*. **7**(1), pp.11-23.

Seibert, S. E., Silver, S. R. & Randolph, W. A. 2004. Taking Empowerment to the Next Level: A Multiple-Level Model of Empowerment, Performance, and Satisfaction. *Academy of Management Journal,* **47**(3)**,** 332-349.

Shapiro, C. and Stiglitz, J. E. 1984. Equilibrium Unemployment as a Worker Discipline Device. *The American Economic Review*, **74**(3), 433-444.

Skalli, A., Theodossiou, I. and Vasileiou, E. 2008. Jobs as Lancaster goods: Facets of job satisfaction and overall job satisfaction. *The Journal of Socio-Economics*, **37**(5), pp.1906-1920.

Söderfeldt, M., Söderfeldt, B., Ohlson, C.-G., Theorell, T. and Jones, I. 2000. The impact of sense of coherence and high-demand/low-control job environment on self-reported health, burnout and psychophysiological stress indicators. *Work & Stress*, **14**(1), pp.1-15.

Sousa-Poza, A. and Sousa-Poza, A. A. 2000. Wellbeing at work: a cross-national analysis of the levels and determinants of job satisfaction. *The Journal of Socio-Economics*, **29**(6), pp.517-538.

Sousa-Poza, A. and Sousa-Poza, A. A. 2007. The effect of job satisfaction on labor turnover by gender: An analysis for Switzerland. *The Journal of Socio-Economics*, **36**(6), pp.895-913.

Takeuchi, R., Chen G., and Lepak, D. P. 2009. Through the Looking Glass of a Social System: Cross-Level Effects of High-Performance Work Systems on Employees' Attitudes. *Personnel Psychology*, **62**(1), pp.1-29.

Tansel, A., and Gazioglu, S. 2013. Management-Employee Relations, Firm Size and Job satisfaction. Discussion Paper No. 7308, Institute for the Study of Labour/IZA, Bonn.

Taris, T.W. and Feij, J.A. 2004. Learning and Strain among Newcomers: A Three-Wave Study on the Effects of Job Demand and Job Control. *Journal of Psychology*. **138**(6), pp.543-563.

Taris, T. W., Kompier, M. A. J., de Lange, A. H., Schaufeli, W. B., and Schreurs, P. J. G. 2003. Learning new behaviour patterns: a longitudinal test of Karasek's active learning hypothesis among Dutch teachers. *Work & Stress*. **17**(1), pp.1-20.

Taris, T. W., Kompier, M.A.J., Geurts, S.A.E., Houtman, I.L.D., and Van Den Heuvel, F.F.M. 2010. Professional efficacy, exhaustion, and work characteristics among police officers: A longitudinal test of the learning-related predictions of the demand-control model. *Journal of Occupational & Organisational Psychology*, **83**(2), pp.455-474.
209.

Theodossiou, I. and Zangelidis, A.. 2009. Career prospects and tenure–job satisfaction profiles: Evidence from panel data. *The Journal of Socio-Economics*, **38**(4), pp.648-657.

Timming, A.R. 2012. Tracing the effects of employee involvement and participation on trust in managers: an analysis of covariance structures. *International Journal of Human Resource Management*. **23**(15), pp.3243-3257.

Titmuss, R. 1970. The Gift Relationship: From Human Blood to Social Policy. London: George Allen and Unwin.

Torp, S. and Grøgaard, J.B. 2009. The influence of individual and contextual work factors on workers' compliance with health and safety routines. *Applied Ergonomics*. **40**(2), pp.185-193.

Tucker, J. S., Sinclair, R.R., Mohr, C.D., Adler, A.B., Thomas, J.L., and Salvi, A.D. 2008. A temporal investigation of the direct, interactive, and reverse relations between demand and control and affective strain. *Work & Stress*, **22**(2), pp.81-95.

Van Der Westhuizen, D.W., Pacheco, G. and Webber, J. 2012. Culture, Participative Decision-making and Job Satisfaction. *The International Journal of Human Resource Management*. **23**(13), pp.2661-2679.

Van Wanrooy, B., Bewley, H., Bryson, A., Forth, J., Freeth, S., Stokes, L., and Wood, S. 2013. The 2011 workplace employment relations study: first findings: initial report on sixth employment relations survey of a representative sample of 2,680 British workplaces between March 2011 and June 2012. Ref: BIS/13/535 London: Department for Business Innovation and Skills.

Van Yperen, N.W. and Snijders, T.A.B. 2000. A Multi-level Analysis of the Demand-control Model: Is Stress at work determined by Factors at the Group Level or the Individual Level? *Journal of Occupational Health Psychology*, **5**(1), pp.182-190.

Van Yperen, N.W. and Hagedoorn, M. 2003. Do high job demand increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal*. **46**(3), pp.339-348.

Veenhoven, R. 1995. World Database of Happiness. *Social Indicators*. 34(3), pp. 299-313.

Vila, L.E. and García-Mora, B. 2005. Education and the Determinants of Job Satisfaction. *Education Economics.* **13**(4), pp.409-425.

Waehrer, G.M., and Miller, T.R. 2009. Does Safety Training Reduce Work Injury in the United States? *The Ergonomics Open Journal*, **2**(1), pp.26-39.

Wall, T. D., Jackson P. R., Mullarkey, S., and Parker, S.K.. 1996. The demand--control model of job strain: A more specific test. *Journal of Occupational & Organisational Psychology*, **69**(2), pp.153-166.

Wallace, J.E. 2005. Job Stress, Depression and Work-to-Family Conflict: A Test of the Strain and Buffer Hypotheses. *Industrial Relations*. **60**(3), pp.510-539.

Wallgren, L.G. and Hanse, J.J. 2007. Job characteristics, motivators and stress among information technology consultants: A structural equation modeling approach. *International Journal of Industrial Ergonomics*. **37**(1), pp.51-59.

Weaver, C.N. 1977. Relationships Among Pay, Race, Sex, Occupational Prestige, Supervision, Work Autonomy, And Job Satisfaction in a National Sample. *Personnel Psychology.* **30**(3), pp.437-445.

Westerlund, H., Nyberg, A., Bernin, P., Hyde, M., Oxenstierna, G., Jäppinend, P., Vääanänene, A. and Theorell, T. 2010. Managerial leadership is associated with employee stress, health, and sickness absence independently of the demand-control-support model. *Work*, **37**(1), pp.71-79.

Weststar, J. 2009. Worker Control and Workplace Learning: Expansion of the Job Demand-control Model. *Industrial Relations*. **48**(3), pp.533-548.

White, I. R., Royston, P, and Wood, A. M. 2011. Multiple imputation using chained equations: Issues and guidance for practice. *Statistics in Medicine,* **30**(4), pp.377-399.

Winnubst, J. A. M., Marcelissen, F. H. G., and Kleber, R. J. 1982. Effects of social support in the stressor-strain relationship: A Dutch sample. *Social Science & Medicine*, **16**(4), pp.475-482.

Winter, E. 2004. Incentives and Discrimination. *The American Economic Review*, **94**(3), pp.764-773.

Wood, S. 2008. Job characteristics, employee voice and wellbeing in Britain. *Industrial Relations Journal*. **39**(2), pp.153-168.

Wood, S. and de Menezes, L.M. 2011. High involvement management, high-performance work systems and wellbeing. *The International Journal of Human Resource Management*. **22**(7), pp.1586-1610.

Workplace Employee Relations Survey [computer file], 2011. Department for Business, Innovation and Skills, Advisory, Conciliation and Arbitration Service and National Institute of Economic and Social Research, *6th Edition.* Colchester, Essex: UK Data Archive [distributor], February 2015. SN: 7226, http://dx.doi.org/10.5255/UKDA-SN-7226-7.

Wright, P. M., Gardner, T. M., Moynihan, L. M., and Allen, M. R. 2005. The Relationship between HR Practices and Firm Performance: Examining Causal Order. *Personnel Psychology*, 5**8**(2), pp.409-446.

Zajonc, R. B. 1965. Social Facilitation. *Science*, **149**(3681), pp.269-274.

Zatzick, C.D. and Iverson, R.D. 2011. Putting employee involvement in context: a cross-level model examining job satisfaction and absenteeism in high-involvement work systems. *International Journal of Human Resource Management*. **22**(17), pp.3462-3476.

Zhou, Q., G. Hirst, and H. Shipton. 2012. Promoting Creativity at Work: The Role of Problem-Solving Demand. *Applied Psychology: an International Review*, **61**(1), pp.56–80.

Appendix A. Additional Tables

Table A.0.1: Descriptive Statistics for All Variables

	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables (Satisfaction with:)				
Achievement	0.75	0.43	0	1
Initiative	0.76	0.43	0	1
Influence	0.61	0.49	0	1
Training	0.80	0.40	0	1
Skills	0.79	0.41	0	1
Pay	0.65	0.48	0	1
Job security	0.80	0.40	0	1
Work itself	0.76	0.43	0	1
Involvement in decision-making	0.78	0.41	0	1
Job Demand				
Work Intensity	4.15	0.78	1	5
Work overload	3.29	1.09	1	5
Timing Demand	2.77	1.12	1	5
Individual form of participation in decisions at employee level (Influence over :)				
Over tasks	3.10	0.93	1	4
Over pace	3.05	0.97	1	4
On How to do task	3.32	0.83	1	4
Over Order of task	3.30	0.85	1	4
Over Working Time	2.58	1.19	1	4
Informative Management				
Operations	3.43	1.13	1	5
Staffing	3.31	1.13	1	5
Sequence	3.41	1.05	1	5
Finance	3.21	1.16	1	5
Consultative Management				
Views of employees	3.28	1.14	1	5
Response to suggestions	3.18	1.12	1	5
Influence of employees	2.94	1.11	1	5
Supportive Management				
Keep promises	3.29	1.06	1	5
Sincere	3.40	1.06	1	5
Honest	3.44	1.04	1	5
Understanding	3.54	1.01	1	5
Encouraging	3.51	1.03	1	5
Treat fairly	3.44	1.10	1	5
Intrinsic motivation				
Using initiative	3.81	0.89	1	5
Value sharing	3.73	0.86	1	5
Loyal	3.90	0.91	1	5
Proud	3.82	0.99	1	5
Individual forms of participation in decisions at workplace level				
Suggestion scheme	0.42	0.49	0	1

	Mean	Standard Deviation	Minimum	Maximum
Notice Boards	0.81	0.39	0	1
Cascade	0.76	0.43	0	1
Newsletters	0.61	0.49	0	1
Email	0.71	0.45	0	1
Intranet	0.65	0.48	0	1
Other	0.30	0.46	0	1
None	0.01	0.10	0	1
Collective form of participation in decisions at workplace level	0.44	0.50	0	1
Merit Pay	0.28	0.45	0	1
Types of Pay				
Basic pay	0.95	0.22	0	1
Individual pay	0.10	0.20	0	1
Group pay	0.05	0.22	0	1
Workplace pay	0.07	0.26	0	1
Extra pay	0.31	0.46	0	1
Pension	0.44	0.50	0	1
Secure job	3.46	1.11	1	5
Types of Jobs				
High Demand& High control	0.24	0.43	0	1
High Demand& Low control	0.24	0.43	0	1
Low Demand& High control	0.27	0.44	0	1
Low Demand& Low control	0.26	0.44	0	1
Interaction terms				
Demand &EO policies	0.02	1.25	-4.48	2.66
Control &EO policies	-0.02	1.71	-5.13	2.09
Individual pay & suggestion scheme	0.05	0.21	0	1
Individual pay & suggestion scheme& EO policies	0.05	0.21	0	1
Merit pay & suggestion scheme	0.14	0.34	0	1
Merit pay & suggestion scheme & EO policies	0.13	0.34	0	1
Tenure				
Less than a year	0.11	0.29	0	1
1-2 years	0.10	0.43	0	1
2-5 years	0.24	0.43	0	1
5-10 years	0.24	0.46	0	1
>10 years	0.30	0.29	0	1
Types of contract			0	1
Permanent	0.92	0.27	0	1
Temporary	0.03	0.18	0	1
Fixed	0.04	0.19	0	1
Marital status			0	1
Single	0.21	0.41	0	1
Married	0.69	0.46	0	1
Divorced	0.08	0.27	0	1
Widowed	0.01	0.12	0	1
Public sector	0.38	0.49	0	1

Occupational Categories

	Mean	Standard Deviation	Minimum	Maximum
Managerial category	0.32	0.47	0	1
Intermediate category	0.28	0.45	0	1
Lower category	0.40	0.49	0	1
Measures of fairness				
Appeal right	0.98	0.14	0	1
EO policies	0.94	0.23	0	1
Voice mechanisms				
Grievance procedure	0.99	0.12	0	1
Union Membership				
A union member	0.37	0.48	0	1
Have been a union member in in the past	0.17	0.37	0	1
Not a union member	0.46	0.50	0	1
Supervisor	0.32	0.47	0	1
Gender	0.44	0.50	0	1
Qualifications				
GCSE grades D-G	0.25	0.43	0	1
GCSE A-C	0.61	0.49	0	1
ONE GCE	0.10	0.30	0	1
TWO or more GCE	0.26	0.44	0	1
First degree	0.30	0.46	0	1
Higher degree	0.10	0.30	0	1
Other academic qualification	0.19	0.39	0	1
No academic qualification	0.05	0.22	0	1
Level 1 NVQ	0.10	0.30	0	1
Level 2 NVQ	0.23	0.42	0	1
Level 3 NVQ	0.19	0.40	0	1
Level 4 NVQ	0.06	0.23	0	1
Level 5 NVQ	0.01	0.09	0	1
Completion of apprenticeship	0.08	0.26	0	1
Other vocational qualification	0.10	0.29	0	1
Other professional qualification	0.18	0.38	0	1
No vocational qualification	0.07	0.26	0	1
Age				
16-29	0.18	0.39	0	1
30-49	0.50	0.50	0	1
50 and above	0.31	0.46	0	1
No religion	0.31	0.46		
Heterosexual	0.90	0.29		
Organizational size				
5-999	0.19	0.39	0	1
1,000-9,999	0.26	0.44	0	1
10,000 or more	0.25	0.44	0	1
White ethnic background	0.90	0.30	0	1

Table A.0.2: Main, Two-Way and Three-Way Interaction Effects models (1)

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
Main Predictors												
Individual form of participation in decisions at employee level												
Over tasks	0.318***	0.318***	0.318***	0.454***	0.454***	0.454***	0.685***	0.685***	0.685***	0.028	0.028	0.028
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.030)	(0.030)	(0.030)
Over pace	0.050*	0.050*	0.050*	0.021	0.021	0.021	0.107***	0.107***	0.107***	0.016	0.016	0.016
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.025)	(0.025)	(0.025)	(0.028)	(0.028)	(0.028)
On How to do task	0.173***	0.173***	0.173***	0.376***	0.375***	0.375***	0.330***	0.330***	0.330***	0.060*	0.061*	0.061*
	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)	(0.034)	(0.034)	(0.034)	(0.036)	(0.036)	(0.036)
Over Order of task	0.055*	0.055*	0.055*	0.250***	0.250***	0.250***	0.227***	0.227***	0.227***	0.054	0.053	0.053
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)
Over Working Time	0.047**	0.047**	0.047**	0.059***	0.058***	0.058***	0.171***	0.171***	0.171***	0.075***	0.075***	0.075***
	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.018)	(0.018)	(0.018)	(0.020)	(0.020)	(0.020)
Individual forms of participation in decisions at workplace level (ref: none)												
Suggestion	0.013	0.006	0.005	0.014	-0.029	-0.029	0.069	0.100**	0.096**	0.147***	0.206***	0.208***
	(0.044)	(0.051)	(0.051)	(0.046)	(0.054)	(0.053)	(0.042)	(0.049)	(0.048)	(0.047)	(0.055)	(0.055)
Notice Boards	0.010	0.010	0.010	-0.032	-0.031	-0.030	-0.004	-0.005	-0.005	0.142**	0.140**	0.139**
	(0.055)	(0.055)	(0.055)	(0.058)	(0.058)	(0.058)	(0.052)	(0.052)	(0.052)	(0.056)	(0.056)	(0.056)
Cascade	0.016	0.016	0.017	0.057	0.060	0.060	0.027	0.024	0.024	-0.003	-0.008	-0.008
	(0.050)	(0.050)	(0.050)	(0.052)	(0.052)	(0.052)	(0.047)	(0.047)	(0.047)	(0.053)	(0.053)	(0.053)
Newsletters	-0.029	-0.030	-0.030	0.017	0.016	0.016	0.013	0.014	0.014	-0.046	-0.044	-0.044
	(0.047)	(0.047)	(0.047)	(0.049)	(0.049)	(0.049)	(0.044)	(0.044)	(0.044)	(0.049)	(0.049)	(0.049)
Email	-0.000	-0.000	-0.000	-0.024	-0.022	-0.022	-0.073	-0.075	-0.075	-0.083	-0.085	-0.086
	(0.056)	(0.056)	(0.056)	(0.058)	(0.058)	(0.058)	(0.053)	(0.053)	(0.053)	(0.060)	(0.060)	(0.060)
Intranet	-0.059	-0.059	-0.059	-0.019	-0.016	-0.016	-0.014	-0.016	-0.015	0.121**	0.118**	0.118**
	(0.052)	(0.052)	(0.052)	(0.054)	(0.054)	(0.054)	(0.049)	(0.049)	(0.049)	(0.054)	(0.054)	(0.054)
Other	-0.008	-0.008	-0.009	-0.002	-0.003	-0.003	0.006	0.007	0.008	-0.005	-0.004	-0.003
	(0.043)	(0.043)	(0.043)	(0.045)	(0.045)	(0.045)	(0.041)	(0.041)	(0.041)	(0.046)	(0.046)	(0.046)
Collective form of participation in decisions at workplace level												
	0.029	0.029	0.029	-0.013	-0.014	-0.014	-0.061	-0.061	-0.061	-0.048	-0.048	-0.048
	(0.044)	(0.044)	(0.044)	(0.045)	(0.045)	(0.045)	(0.041)	(0.041)	(0.041)	(0.045)	(0.045)	(0.045)

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
Secure job	0.141***	0.141***	0.141***	0.129***	0.129***	0.129***	0.198***	0.199***	0.199***	0.198***	0.198***	0.198***
	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.021)	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)
Individual Incentive pay												
Merit Pay	-0.016	-0.026	-0.028	0.012	-0.056	-0.056	-0.054	-0.005	-0.010	-0.098**	-0.016	-0.012
	(0.046)	(0.062)	(0.062)	(0.048)	(0.065)	(0.064)	(0.044)	(0.059)	(0.058)	(0.048)	(0.064)	(0.064)
Types of Pay (ref: basic pay)												
Individual pay	0.156**	0.156**	0.156**	-0.065	-0.067	-0.067	-0.054	-0.053	-0.053	0.066	0.068	0.068
	(0.071)	(0.072)	(0.072)	(0.074)	(0.074)	(0.074)	(0.068)	(0.068)	(0.068)	(0.074)	(0.074)	(0.074)
Group pay	0.012	0.012	0.012	0.147	0.150	0.150	0.124	0.122	0.122	-0.184*	-0.187*	-0.187*
	(0.096)	(0.096)	(0.096)	(0.104)	(0.104)	(0.104)	(0.092)	(0.092)	(0.092)	(0.098)	(0.098)	(0.098)
Workplace pay	0.182**	0.182**	0.182**	0.003	0.003	0.003	-0.055	-0.054	-0.054	-0.119	-0.119	-0.118
	(0.087)	(0.087)	(0.087)	(0.092)	(0.092)	(0.092)	(0.082)	(0.082)	(0.082)	(0.087)	(0.087)	(0.087)
Extra pay	0.126***	0.126***	0.126***	0.032	0.031	0.031	0.019	0.020	0.020	0.074	0.076	0.076
	(0.046)	(0.046)	(0.046)	(0.047)	(0.047)	(0.047)	(0.043)	(0.043)	(0.043)	(0.049)	(0.049)	(0.049)
Pension (deferred payment schemes like ESOP)	-0.021	-0.021	-0.021	0.057	0.057	0.057	0.006	0.006	0.006	-0.056	-0.056	-0.056
	(0.045)	(0.045)	(0.045)	(0.047)	(0.047)	(0.047)	(0.043)	(0.043)	(0.043)	(0.047)	(0.047)	(0.047)
Measures of fairness												
Appeal right	0.080	0.081	0.082	-0.077	-0.066	-0.066	0.041	0.035	0.037	-0.109	-0.127	-0.127
	(0.159)	(0.159)	(0.159)	(0.173)	(0.173)	(0.172)	(0.168)	(0.168)	(0.168)	(0.175)	(0.175)	(0.175)
EO policies	-0.182*	-0.182*	-0.183*	0.029	0.028	0.022	-0.133	-0.131	-0.127	0.153	0.155	0.162
	(0.099)	(0.099)	(0.099)	(0.102)	(0.101)	(0.102)	(0.093)	(0.093)	(0.093)	(0.099)	(0.099)	(0.099)
Informative Management												
Operations	-0.025	-0.025	-0.025	-0.039	-0.039	-0.039	-0.093***	-0.093***	-0.093***	0.034	0.034	0.034
	(0.032)	(0.032)	(0.032)	(0.033)	(0.033)	(0.033)	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)
Staffing	-0.009	-0.009	-0.009	-0.037	-0.036	-0.036	-0.002	-0.003	-0.003	-0.033	-0.033	-0.033
	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)	(0.030)	(0.030)	(0.030)	(0.032)	(0.032)	(0.032)
Sequence	0.184***	0.184***	0.184***	0.190***	0.190***	0.190***	0.221***	0.221***	0.221***	0.365***	0.366***	0.366***
	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Finance	-0.050*	-0.050*	-0.050*	0.052*	0.053**	0.053**	0.062**	0.062**	0.062**	0.067**	0.067**	0.067**
	(0.026)	(0.026)	(0.026)	(0.027)	(0.027)	(0.027)	(0.025)	(0.025)	(0.025)	(0.027)	(0.027)	(0.027)
Consultative Management												
Views of employees	0.069**	0.069**	0.070**	0.004	0.004	0.004	0.026	0.026	0.026	0.089***	0.090***	0.090***
	(0.032)	(0.032)	(0.032)	(0.033)	(0.033)	(0.033)	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
Response to suggestions	0.050	0.050	0.050	0.105***	0.105***	0.105***	0.038	0.038	0.038	0.061	0.062	0.062
	(0.037)	(0.037)	(0.037)	(0.038)	(0.038)	(0.038)	(0.035)	(0.035)	(0.035)	(0.038)	(0.038)	(0.038)
Influence of employees	0.046	0.046	0.046	0.182***	0.182***	0.182***	0.260***	0.259***	0.259***	0.087**	0.087**	0.087**
	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)	(0.032)	(0.032)	(0.032)	(0.036)	(0.036)	(0.036)
Supportive Management												
Keep promises	0.034	0.034	0.035	-0.006	-0.005	-0.005	0.058*	0.057*	0.057*	0.169***	0.168***	0.168***
	(0.036)	(0.036)	(0.036)	(0.037)	(0.037)	(0.037)	(0.034)	(0.034)	(0.034)	(0.037)	(0.037)	(0.037)
Sincere	0.040	0.040	0.040	0.109***	0.110***	0.110***	0.048	0.048	0.048	-0.188***	-0.189***	-0.189***
	(0.039)	(0.039)	(0.039)	(0.040)	(0.040)	(0.040)	(0.037)	(0.037)	(0.037)	(0.040)	(0.040)	(0.040)
Honest	-0.130***	-0.130***	-0.130***	-0.068*	-0.069*	-0.069*	-0.027	-0.026	-0.026	-0.052	-0.051	-0.051
	(0.039)	(0.039)	(0.039)	(0.041)	(0.041)	(0.041)	(0.038)	(0.038)	(0.038)	(0.041)	(0.041)	(0.041)
Understanding	-0.010	-0.010	-0.010	0.034	0.033	0.033	0.029	0.030	0.030	-0.044	-0.043	-0.043
	(0.026)	(0.026)	(0.026)	(0.027)	(0.027)	(0.027)	(0.026)	(0.026)	(0.026)	(0.027)	(0.027)	(0.027)
Encouraging	0.232***	0.232***	0.232***	0.254***	0.254***	0.254***	0.140***	0.140***	0.140***	0.815***	0.816***	0.816***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.028)	(0.028)	(0.028)	(0.030)	(0.030)	(0.030)
Treat fairly	0.078**	0.078**	0.078**	-0.004	-0.004	-0.004	0.039	0.039	0.039	-0.016	-0.017	-0.017
	(0.032)	(0.032)	(0.032)	(0.033)	(0.033)	(0.033)	(0.031)	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)
Interactions												
Merit pay x suggestion scheme		0.020			0.141			-0.102			-0.178*	
		(0.087)			(0.091)			(0.083)			(0.091)	
Merit pay x suggestion schemex EO policies			0.025			0.145			-0.093			-0.190**
			(0.086)			(0.090)			(0.083)			(0.090)
CONTROLS												
Job Demand												
Work overload	-0.160***	-0.160***	-0.160***	-0.070***	-0.071***	-0.071***	-0.116***	-0.116***	-0.116***	-0.167***	-0.166***	-0.166***
	(0.023)	(0.023)	(0.023)	(0.024)	(0.024)	(0.024)	(0.022)	(0.022)	(0.022)	(0.024)	(0.024)	(0.024)
Work Intensity	0.420***	0.420***	0.420***	0.204***	0.204***	0.204***	0.122***	0.122***	0.122***	0.017	0.016	0.016
	(0.029)	(0.029)	(0.029)	(0.030)	(0.030)	(0.030)	(0.028)	(0.028)	(0.028)	(0.031)	(0.031)	(0.031)
Timing Demand	-0.131***	-0.131***	-0.131***	-0.105***	-0.105***	-0.105***	-0.136***	-0.137***	-0.137***	-0.057***	-0.058***	-0.058***
	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.021)	(0.019)	(0.019)	(0.019)	(0.021)	(0.021)	(0.021)
Supervisor	-0.023	-0.023	-0.023	0.185***	0.185***	0.185***	0.203***	0.203***	0.203***	0.005	0.005	0.005
	(0.047)	(0.047)	(0.047)	(0.050)	(0.050)	(0.050)	(0.044)	(0.044)	(0.044)	(0.049)	(0.049)	(0.049)
Intrinsic Motivation												

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
Using initiative	0.143***	0.143***	0.143***	0.258***	0.259***	0.259***	0.152***	0.151***	0.151***	-0.070***	-0.070***	-0.070***
	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)
Value sharing	0.156***	0.156***	0.156***	0.081**	0.081**	0.081**	0.153***	0.153***	0.153***	0.021	0.022	0.022
	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Loyal	0.216***	0.216***	0.216***	0.139***	0.137***	0.137***	0.111***	0.111***	0.111***	0.012	0.014	0.014
	(0.032)	(0.032)	(0.032)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Proud	0.499***	0.499***	0.499***	0.264***	0.266***	0.266***	0.201***	0.200***	0.200***	0.150***	0.149***	0.149***
	(0.030)	(0.030)	(0.030)	(0.031)	(0.031)	(0.031)	(0.030)	(0.030)	(0.030)	(0.031)	(0.031)	(0.031)
Voice mechanisms												
Grievance procedure	0.061	0.060	0.061	-0.210	-0.218	-0.213	-0.133	-0.129	-0.133	-0.285	-0.278	-0.284
	(0.182)	(0.182)	(0.182)	(0.199)	(0.199)	(0.199)	(0.184)	(0.184)	(0.184)	(0.209)	(0.209)	(0.209)
Union Member (ref: not a member)												
A member	0.084	0.084	0.084	-0.009	-0.009	-0.009	-0.048	-0.048	-0.048	-0.030	-0.029	-0.029
	(0.053)	(0.053)	(0.053)	(0.055)	(0.055)	(0.055)	(0.050)	(0.050)	(0.050)	(0.056)	(0.056)	(0.056)
Have been in the past	0.109*	0.109*	0.109*	0.044	0.044	0.044	-0.036	-0.036	-0.036	-0.088	-0.088	-0.088
	(0.060)	(0.060)	(0.060)	(0.062)	(0.062)	(0.062)	(0.056)	(0.056)	(0.056)	(0.062)	(0.062)	(0.062)
Gender (ref: female)	-0.031	-0.031	-0.031	0.171***	0.171***	0.171***	0.236***	0.236***	0.236***	0.104**	0.105**	0.105**
	(0.046)	(0.046)	(0.046)	(0.048)	(0.048)	(0.048)	(0.044)	(0.044)	(0.044)	(0.048)	(0.048)	(0.048)
White ethnic background (ref: others)	0.178**	0.178**	0.178**	-0.082	-0.085	-0.085	0.070	0.071	0.071	0.004	0.007	0.007
	(0.074)	(0.074)	(0.074)	(0.078)	(0.078)	(0.078)	(0.071)	(0.071)	(0.071)	(0.081)	(0.081)	(0.081)
Tenure (ref: <1year)												
1-2 years	-0.048	-0.048	-0.047	-0.007	-0.006	-0.005	0.022	0.021	0.021	-0.101	-0.102	-0.103
	(0.086)	(0.086)	(0.086)	(0.089)	(0.089)	(0.089)	(0.081)	(0.081)	(0.081)	(0.093)	(0.093)	(0.093)
2-5 years	0.003	0.003	0.004	-0.019	-0.018	-0.018	0.061	0.059	0.059	-0.017	-0.018	-0.018
	(0.073)	(0.073)	(0.073)	(0.075)	(0.075)	(0.075)	(0.068)	(0.068)	(0.068)	(0.080)	(0.080)	(0.080)
5-10 years	-0.105	-0.105	-0.105	0.012	0.013	0.014	0.060	0.059	0.059	0.036	0.035	0.035
	(0.075)	(0.075)	(0.075)	(0.078)	(0.078)	(0.078)	(0.070)	(0.070)	(0.070)	(0.082)	(0.082)	(0.082)
>10 years	-0.020	-0.020	-0.020	0.064	0.065	0.065	0.140*	0.139*	0.139*	0.142*	0.141*	0.140*
	(0.078)	(0.078)	(0.078)	(0.081)	(0.081)	(0.081)	(0.073)	(0.073)	(0.073)	(0.084)	(0.084)	(0.084)
contract (ref: permanent)												
Temporary	-0.027	-0.027	-0.027	-0.164	-0.163	-0.162	0.053	0.053	0.052	-0.265**	-0.267**	-0.267**
	(0.111)	(0.111)	(0.111)	(0.112)	(0.112)	(0.112)	(0.106)	(0.106)	(0.106)	(0.122)	(0.122)	(0.122)
Fixed	0.163	0.163	0.163	0.023	0.023	0.023	0.144	0.144	0.144	0.107	0.106	0.106
	(0.112)	(0.112)	(0.112)	(0.113)	(0.113)	(0.113)	(0.101)	(0.101)	(0.101)	(0.117)	(0.117)	(0.117)

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
Marital Status (Ref: Single)												
Married	0.096*	0.096*	0.096*	0.041	0.042	0.042	0.075	0.074	0.074	-0.020	-0.021	-0.021
	(0.052)	(0.052)	(0.052)	(0.055)	(0.055)	(0.055)	(0.051)	(0.051)	(0.051)	(0.056)	(0.056)	(0.056)
Divorced	0.037	0.037	0.037	0.103	0.102	0.101	0.056	0.056	0.056	-0.062	-0.061	-0.061
	(0.087)	(0.087)	(0.087)	(0.091)	(0.091)	(0.091)	(0.083)	(0.083)	(0.083)	(0.091)	(0.092)	(0.092)
Widowed	-0.042	-0.041	-0.041	0.102	0.103	0.103	0.085	0.085	0.085	0.158	0.156	0.156
	(0.178)	(0.178)	(0.178)	(0.188)	(0.188)	(0.188)	(0.167)	(0.167)	(0.167)	(0.208)	(0.208)	(0.208)
Age (ref: 16-29)												
30-49	0.330***	0.329***	0.329***	0.106*	0.105*	0.105*	0.015	0.015	0.015	-0.082	-0.080	-0.080
	(0.060)	(0.060)	(0.060)	(0.063)	(0.063)	(0.063)	(0.058)	(0.058)	(0.058)	(0.065)	(0.065)	(0.065)
50 and above	0.515***	0.515***	0.515***	0.115	0.115	0.114	0.008	0.008	0.008	0.088	0.088	0.088
	(0.072)	(0.072)	(0.072)	(0.075)	(0.075)	(0.075)	(0.069)	(0.069)	(0.069)	(0.077)	(0.077)	(0.077)
Qualifications (Ref: GCSE grades D-G)												
GCSE A-C	0.040	0.040	0.040	0.007	0.006	0.006	-0.009	-0.008	-0.008	0.003	0.003	0.003
	(0.047)	(0.047)	(0.047)	(0.049)	(0.049)	(0.049)	(0.044)	(0.044)	(0.044)	(0.049)	(0.049)	(0.049)
ONE GCE	-0.007	-0.008	-0.008	0.024	0.023	0.023	-0.057	-0.057	-0.057	-0.011	-0.011	-0.011
	(0.066)	(0.066)	(0.066)	(0.069)	(0.069)	(0.069)	(0.063)	(0.063)	(0.063)	(0.068)	(0.068)	(0.068)
TWO or more GCE	0.065	0.065	0.065	-0.005	-0.003	-0.003	0.053	0.052	0.052	-0.097*	-0.099*	-0.099*
	(0.053)	(0.053)	(0.053)	(0.056)	(0.056)	(0.056)	(0.051)	(0.051)	(0.051)	(0.054)	(0.054)	(0.054)
First degree	0.033	0.033	0.033	-0.106*	-0.107*	-0.107*	-0.051	-0.050	-0.050	-0.239***	-0.239***	-0.239***
	(0.053)	(0.053)	(0.053)	(0.056)	(0.056)	(0.056)	(0.050)	(0.050)	(0.050)	(0.054)	(0.054)	(0.054)
Higher degree	0.102	0.102	0.103	-0.024	-0.022	-0.022	0.053	0.051	0.051	0.137*	0.133*	0.133*
	(0.076)	(0.076)	(0.076)	(0.078)	(0.078)	(0.078)	(0.068)	(0.068)	(0.068)	(0.074)	(0.074)	(0.074)
Other academic qualification	0.124**	0.124**	0.124**	-0.050	-0.049	-0.050	-0.063	-0.064	-0.063	0.004	0.004	0.004
	(0.053)	(0.053)	(0.053)	(0.054)	(0.054)	(0.054)	(0.049)	(0.049)	(0.049)	(0.054)	(0.054)	(0.054)
No academic qualification	0.094	0.094	0.094	0.245**	0.244**	0.244**	0.173*	0.174*	0.174*	0.469***	0.468***	0.468***
	(0.108)	(0.108)	(0.108)	(0.115)	(0.115)	(0.115)	(0.105)	(0.105)	(0.105)	(0.134)	(0.134)	(0.134)
Level 1 NVQ	0.004	0.004	0.004	0.134*	0.134*	0.134*	0.108	0.108	0.108	0.061	0.060	0.061
	(0.069)	(0.069)	(0.069)	(0.074)	(0.074)	(0.074)	(0.067)	(0.067)	(0.067)	(0.075)	(0.075)	(0.075)
Level 2 NVQ	0.020	0.021	0.021	0.051	0.052	0.052	-0.036	-0.037	-0.037	0.064	0.062	0.062
	(0.052)	(0.052)	(0.052)	(0.055)	(0.055)	(0.055)	(0.050)	(0.050)	(0.050)	(0.056)	(0.056)	(0.056)
Level 3 NVQ	-0.050	-0.050	-0.049	0.022	0.023	0.023	0.076	0.075	0.075	-0.088	-0.090	-0.090
	(0.053)	(0.053)	(0.053)	(0.056)	(0.056)	(0.056)	(0.051)	(0.051)	(0.051)	(0.056)	(0.056)	(0.056)
Level 4 NVQ	0.056	0.056	0.056	-0.056	-0.057	-0.057	-0.057	-0.057	-0.057	0.091	0.090	0.090

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
	(0.090)	(0.090)	(0.090)	(0.093)	(0.093)	(0.093)	(0.083)	(0.083)	(0.083)	(0.092)	(0.092)	(0.092)
Level 5 NVQ	-0.324	-0.324	-0.324	-0.081	-0.082	-0.082	0.051	0.051	0.051	-0.488**	-0.489**	-0.489**
	(0.230)	(0.230)	(0.230)	(0.253)	(0.253)	(0.253)	(0.225)	(0.225)	(0.225)	(0.223)	(0.224)	(0.224)
Completion of apprenticeship	0.037	0.037	0.037	0.008	0.006	0.007	-0.006	-0.005	-0.006	-0.195**	-0.194**	-0.194**
	(0.080)	(0.080)	(0.080)	(0.085)	(0.085)	(0.085)	(0.079)	(0.079)	(0.079)	(0.082)	(0.082)	(0.082)
Other vocational qualification	0.014	0.014	0.014	-0.079	-0.079	-0.079	-0.040	-0.040	-0.040	-0.028	-0.027	-0.027
	(0.068)	(0.068)	(0.068)	(0.070)	(0.070)	(0.070)	(0.064)	(0.064)	(0.064)	(0.070)	(0.070)	(0.070)
Other professional qualification	0.096*	0.096*	0.096*	0.068	0.068	0.068	0.074	0.074	0.074	0.129**	0.129**	0.129**
	(0.058)	(0.058)	(0.058)	(0.060)	(0.060)	(0.060)	(0.053)	(0.053)	(0.053)	(0.058)	(0.058)	(0.058)
No vocational qualification	0.203**	0.204**	0.204**	0.329***	0.330***	0.330***	0.302***	0.301***	0.301***	0.272***	0.270**	0.270**
	(0.092)	(0.092)	(0.092)	(0.097)	(0.097)	(0.097)	(0.089)	(0.089)	(0.089)	(0.105)	(0.106)	(0.106)
No religion (ref: having a religion)	-0.091**	-0.091**	-0.091**	-0.006	-0.007	-0.007	-0.002	-0.002	-0.002	-0.062	-0.061	-0.061
	(0.043)	(0.043)	(0.043)	(0.046)	(0.046)	(0.046)	(0.042)	(0.042)	(0.042)	(0.046)	(0.046)	(0.046)
Heterosexual (ref: other orientations)	-0.033	-0.033	-0.033	0.005	0.004	0.005	-0.080	-0.079	-0.079	0.189**	0.190**	0.190**
	(0.076)	(0.076)	(0.076)	(0.079)	(0.079)	(0.079)	(0.074)	(0.074)	(0.074)	(0.079)	(0.079)	(0.079)
Organizational size (ref: 5-999)												
1000-9,999	0.016	0.016	0.016	-0.032	-0.030	-0.030	-0.069	-0.070	-0.070	0.032	0.030	0.030
	(0.052)	(0.052)	(0.052)	(0.055)	(0.055)	(0.055)	(0.049)	(0.049)	(0.049)	(0.055)	(0.055)	(0.055)
10,000 and above	0.006	0.006	0.006	-0.115**	-0.116**	-0.116**	-0.050	-0.050	-0.050	0.042	0.042	0.043
	(0.056)	(0.056)	(0.056)	(0.058)	(0.058)	(0.058)	(0.053)	(0.053)	(0.053)	(0.059)	(0.059)	(0.059)
Industries (ref: manufacturing)												
Electricity	0.279*	0.280*	0.280*	0.097	0.102	0.102	-0.027	-0.033	-0.033	0.337**	0.328**	0.327**
	(0.148)	(0.148)	(0.148)	(0.156)	(0.156)	(0.156)	(0.144)	(0.144)	(0.144)	(0.156)	(0.156)	(0.156)
Water supply	-0.077	-0.078	-0.078	0.333*	0.325*	0.324*	-0.162	-0.156	-0.156	0.451**	0.462**	0.463**
	(0.164)	(0.164)	(0.164)	(0.186)	(0.186)	(0.186)	(0.167)	(0.167)	(0.167)	(0.190)	(0.190)	(0.190)
Construction	0.591***	0.592***	0.592***	0.425***	0.429***	0.429***	0.094	0.091	0.091	0.505***	0.500***	0.500***
	(0.128)	(0.128)	(0.128)	(0.138)	(0.138)	(0.138)	(0.123)	(0.123)	(0.123)	(0.136)	(0.136)	(0.136)
Wholesale/Retail	0.057	0.057	0.057	-0.074	-0.076	-0.077	-0.249***	-0.248**	-0.248**	0.053	0.055	0.056
	(0.096)	(0.096)	(0.096)	(0.103)	(0.103)	(0.103)	(0.097)	(0.097)	(0.097)	(0.105)	(0.105)	(0.105)
Transportation	0.185*	0.185*	0.185*	0.045	0.047	0.047	-0.156	-0.158	-0.158	0.367***	0.364***	0.364***
	(0.103)	(0.103)	(0.103)	(0.109)	(0.109)	(0.109)	(0.106)	(0.106)	(0.106)	(0.111)	(0.111)	(0.111)
Accommodation services	-0.124	-0.125	-0.124	-0.265**	-0.270**	-0.265**	-0.164	-0.161	-0.165	0.393***	0.400***	0.396***
	(0.127)	(0.127)	(0.127)	(0.134)	(0.134)	(0.134)	(0.130)	(0.130)	(0.130)	(0.152)	(0.152)	(0.152)
Information and communication	0.499***	0.500***	0.500***	0.153	0.156	0.155	-0.005	-0.008	-0.007	-0.205	-0.209	-0.209

	Satisfaction with:											
	Achieve Main	Achieve IAE[1]	Achieve IAE[2]	Initiative Main	Initiative IAE[1]	Initiative IAE[2]	Influence Main	Influence IAE[1]	Influence IAE[2]	Training Main	Training IAE[1]	Training IAE[2]
	(0.149)	(0.149)	(0.149)	(0.159)	(0.159)	(0.159)	(0.145)	(0.145)	(0.145)	(0.143)	(0.143)	(0.143)
Financial services	0.318*	0.318*	0.318*	-0.051	-0.050	-0.050	0.024	0.022	0.022	0.264	0.262	0.261
	(0.173)	(0.173)	(0.173)	(0.180)	(0.180)	(0.180)	(0.169)	(0.169)	(0.169)	(0.179)	(0.179)	(0.179)
Real estate	0.332**	0.332**	0.332**	0.029	0.030	0.030	-0.031	-0.033	-0.033	0.508***	0.507***	0.508***
	(0.136)	(0.136)	(0.136)	(0.144)	(0.144)	(0.144)	(0.132)	(0.132)	(0.132)	(0.150)	(0.150)	(0.150)
Professional services	0.443***	0.442***	0.442***	0.330**	0.325**	0.325**	-0.071	-0.068	-0.068	0.335***	0.341***	0.341***
	(0.119)	(0.119)	(0.119)	(0.129)	(0.129)	(0.129)	(0.114)	(0.114)	(0.114)	(0.122)	(0.122)	(0.122)
Administrative and support	0.592***	0.592***	0.592***	0.180	0.179	0.180	-0.013	-0.013	-0.013	0.452***	0.453***	0.453***
	(0.141)	(0.141)	(0.141)	(0.148)	(0.148)	(0.148)	(0.135)	(0.135)	(0.135)	(0.153)	(0.153)	(0.153)
Public admin	0.473***	0.473***	0.473***	0.105	0.104	0.104	0.006	0.005	0.006	0.354***	0.354***	0.354***
	(0.109)	(0.109)	(0.109)	(0.115)	(0.115)	(0.115)	(0.106)	(0.106)	(0.106)	(0.115)	(0.115)	(0.115)
Education	0.883***	0.883***	0.883***	0.523***	0.522***	0.523***	0.154	0.154	0.153	0.440***	0.443***	0.443***
	(0.104)	(0.104)	(0.104)	(0.109)	(0.109)	(0.109)	(0.098)	(0.098)	(0.098)	(0.107)	(0.108)	(0.108)
Human health	0.598***	0.598***	0.598***	0.388***	0.389***	0.389***	-0.054	-0.055	-0.055	0.724***	0.724***	0.723***
	(0.093)	(0.093)	(0.093)	(0.098)	(0.098)	(0.098)	(0.090)	(0.090)	(0.090)	(0.102)	(0.102)	(0.102)
Arts, entertainment	0.486***	0.487***	0.487***	0.314**	0.315**	0.315**	0.012	0.011	0.011	0.451***	0.451***	0.451***
	(0.122)	(0.122)	(0.122)	(0.129)	(0.129)	(0.129)	(0.118)	(0.118)	(0.118)	(0.131)	(0.131)	(0.131)
Other services	0.577***	0.576***	0.576***	0.253*	0.246	0.247	-0.158	-0.154	-0.155	0.183	0.195	0.195
	(0.148)	(0.148)	(0.148)	(0.154)	(0.154)	(0.153)	(0.137)	(0.137)	(0.137)	(0.146)	(0.146)	(0.146)
Public sector	0.045	0.045	0.045	0.052	0.047	0.048	-0.025	-0.021	-0.022	-0.061	-0.054	-0.053
	(0.063)	(0.063)	(0.063)	(0.065)	(0.065)	(0.065)	(0.058)	(0.058)	(0.058)	(0.066)	(0.066)	(0.066)
Occupational Categories (ref:Managerial)												
Intermediate	-0.048	-0.048	-0.049	-0.026	-0.029	-0.029	0.009	0.011	0.011	0.142**	0.146**	0.147**
	(0.056)	(0.056)	(0.056)	(0.059)	(0.059)	(0.059)	(0.052)	(0.052)	(0.052)	(0.057)	(0.057)	(0.057)
Lower	0.244***	0.244***	0.244***	0.047	0.047	0.048	0.092	0.092	0.091	0.366***	0.367***	0.366***
	(0.066)	(0.066)	(0.066)	(0.069)	(0.069)	(0.069)	(0.062)	(0.062)	(0.062)	(0.070)	(0.070)	(0.070)
Intercept	-8.545***	-8.543***	-8.542***	-8.401***	-8.387***	-8.387***	-9.497***	-9.508***	-9.508***	-4.405***	-4.421***	-4.422***
	(0.333)	(0.333)	(0.333)	(0.355)	(0.355)	(0.355)	(0.338)	(0.338)	(0.338)	(0.354)	(0.355)	(0.355)
Pseudo R-Squared	0.280	0.280	0.280	0.315	0.315	0.315	0.337	0.337	0.337	0.262	0.262	0.262
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596

Notes: IAE[1] refers to the two-way interaction effect model while IAE[2] shows three-way interaction effect model. Standard errors are in parentheses. Coefficients are statistically significant at * p<0.10, ** p<0.05, *** p<0.01.

Table A.0.3: Main, Two-Way and Three-Way Interaction Effects Models (2)

	Satisfaction with:											
	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Main Predictors												
Individual form of participation in decisions at employee level												
Over tasks	0.117***	0.117***	0.117***	0.049**	0.048**	0.048**	0.051	0.050	0.050	0.227***	0.227***	0.227***
	(0.031)	(0.031)	(0.031)	(0.024)	(0.024)	(0.024)	(0.039)	(0.039)	(0.039)	(0.028)	(0.028)	(0.028)
Over pace	0.008	0.008	0.008	0.058**	0.059***	0.059***	0.060	0.061	0.061*	0.042	0.042	0.042
	(0.029)	(0.029)	(0.029)	(0.023)	(0.023)	(0.023)	(0.037)	(0.037)	(0.037)	(0.027)	(0.027)	(0.027)
On How to do task	0.144***	0.144***	0.145***	-0.011	-0.010	-0.009	0.051	0.052	0.052	0.199***	0.199***	0.199***
	(0.037)	(0.037)	(0.037)	(0.030)	(0.030)	(0.030)	(0.048)	(0.048)	(0.048)	(0.034)	(0.034)	(0.034)
Over Order of task	0.012	0.012	0.012	-0.026	-0.027	-0.027	0.005	0.004	0.004	-0.007	-0.007	-0.007
	(0.034)	(0.034)	(0.034)	(0.027)	(0.027)	(0.027)	(0.045)	(0.045)	(0.045)	(0.031)	(0.031)	(0.031)
Over Working Time	0.086***	0.086***	0.086***	0.089***	0.090***	0.090***	-0.001	-0.001	-0.001	-0.014	-0.014	-0.014
	(0.021)	(0.021)	(0.021)	(0.016)	(0.016)	(0.016)	(0.027)	(0.027)	(0.027)	(0.019)	(0.019)	(0.019)
Individual forms of participation in decisions at workplace level (ref: none)												
Suggestion	0.069	0.100*	0.103*	0.014	0.095**	0.093**	0.094	0.134*	0.138*	-0.009	0.004	-0.000
	(0.048)	(0.056)	(0.056)	(0.036)	(0.042)	(0.042)	(0.061)	(0.071)	(0.071)	(0.043)	(0.051)	(0.050)
Notice Boards	-0.036	-0.037	-0.037	-0.167***	-0.169***	-0.170***	-0.106	-0.108	-0.108	-0.008	-0.008	-0.008
	(0.060)	(0.060)	(0.060)	(0.046)	(0.046)	(0.046)	(0.076)	(0.076)	(0.076)	(0.054)	(0.054)	(0.054)
Cascade	-0.162***	-0.164***	-0.164***	0.010	0.003	0.004	-0.025	-0.029	-0.029	0.057	0.056	0.057
	(0.056)	(0.056)	(0.056)	(0.041)	(0.041)	(0.041)	(0.071)	(0.071)	(0.071)	(0.049)	(0.050)	(0.050)
Newsletters	-0.013	-0.012	-0.012	-0.033	-0.031	-0.031	0.085	0.086	0.085	-0.043	-0.043	-0.043
	(0.051)	(0.051)	(0.051)	(0.039)	(0.039)	(0.039)	(0.065)	(0.065)	(0.065)	(0.047)	(0.047)	(0.047)
Email	-0.006	-0.008	-0.008	0.081*	0.076*	0.077*	-0.104	-0.105	-0.106	-0.034	-0.034	-0.034
	(0.062)	(0.062)	(0.062)	(0.045)	(0.045)	(0.045)	(0.080)	(0.080)	(0.080)	(0.056)	(0.056)	(0.056)
Intranet	0.058	0.056	0.056	0.041	0.036	0.037	-0.057	-0.060	-0.060	-0.046	-0.047	-0.047
	(0.056)	(0.056)	(0.056)	(0.042)	(0.042)	(0.042)	(0.072)	(0.073)	(0.072)	(0.051)	(0.051)	(0.051)
Other	-0.028	-0.028	-0.027	-0.020	-0.019	-0.017	-0.025	-0.024	-0.023	0.059	0.060	0.060
	(0.047)	(0.047)	(0.047)	(0.036)	(0.036)	(0.036)	(0.060)	(0.060)	(0.060)	(0.043)	(0.043)	(0.043)
Collective form of participation in decisions at workplace level												
	-0.033	-0.033	-0.033	0.009	0.010	0.010	-0.091	-0.092	-0.092	-0.008	-0.007	-0.007
	(0.047)	(0.047)	(0.047)	(0.036)	(0.036)	(0.036)	(0.060)	(0.060)	(0.060)	(0.043)	(0.043)	(0.043)

	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
						Satisfaction with:						
Secure job	0.232***	0.232***	0.232***	0.138***	0.139***	0.139***	2.354***	2.355***	2.355***	0.189***	0.189***	0.189***
	(0.021)	(0.021)	(0.021)	(0.017)	(0.017)	(0.017)	(0.040)	(0.040)	(0.040)	(0.019)	(0.019)	(0.019)
Individual Incentive pay												
Merit Pay	0.003	0.051	0.056	0.030	0.163***	0.161***	-0.070	-0.003	0.005	-0.040	-0.019	-0.026
	(0.050)	(0.068)	(0.067)	(0.039)	(0.053)	(0.052)	(0.065)	(0.089)	(0.089)	(0.046)	(0.062)	(0.061)
Types of Pay (ref: basic pay)												
Individual pay	0.030	0.031	0.031	0.091	0.094	0.093	0.150	0.152	0.153	0.007	0.008	0.008
	(0.078)	(0.078)	(0.078)	(0.061)	(0.061)	(0.061)	(0.100)	(0.100)	(0.100)	(0.069)	(0.069)	(0.069)
Group pay	0.054	0.053	0.052	0.028	0.025	0.024	0.091	0.088	0.087	0.028	0.027	0.027
	(0.107)	(0.107)	(0.107)	(0.084)	(0.084)	(0.084)	(0.142)	(0.142)	(0.142)	(0.094)	(0.094)	(0.094)
Workplace pay	0.024	0.024	0.025	0.290***	0.290***	0.291***	-0.024	-0.025	-0.024	0.081	0.081	0.081
	(0.095)	(0.095)	(0.095)	(0.077)	(0.077)	(0.077)	(0.128)	(0.128)	(0.128)	(0.085)	(0.085)	(0.085)
Extra pay	0.050	0.051	0.052	-0.027	-0.026	-0.026	0.099	0.099	0.099	0.195***	0.196***	0.196***
	(0.050)	(0.050)	(0.050)	(0.038)	(0.038)	(0.038)	(0.065)	(0.065)	(0.065)	(0.046)	(0.046)	(0.046)
Pension (deferred payment schemes like ESOP)	-0.117**	-0.118**	-0.118**	0.207***	0.207***	0.207***	-0.037	-0.037	-0.037	0.025	0.025	0.025
	(0.049)	(0.049)	(0.049)	(0.037)	(0.037)	(0.037)	(0.062)	(0.062)	(0.062)	(0.045)	(0.045)	(0.045)
Measures of fairness												
Appeal right	0.167	0.157	0.157	0.020	-0.004	0.001	-0.380	-0.391	-0.393	0.091	0.087	0.089
	(0.177)	(0.178)	(0.178)	(0.134)	(0.135)	(0.135)	(0.256)	(0.257)	(0.257)	(0.158)	(0.158)	(0.158)
EO policies	0.065	0.066	0.070	-0.114	-0.111	-0.098	-0.008	-0.009	-0.004	-0.023	-0.023	-0.022
	(0.105)	(0.105)	(0.105)	(0.081)	(0.081)	(0.081)	(0.146)	(0.146)	(0.146)	(0.098)	(0.098)	(0.098)
Informative Management												
Operations	-0.073**	-0.073**	-0.072**	-0.052*	-0.051*	-0.051*	0.065	0.065	0.065	-0.039	-0.039	-0.039
	(0.034)	(0.034)	(0.034)	(0.027)	(0.027)	(0.027)	(0.045)	(0.045)	(0.045)	(0.032)	(0.032)	(0.032)
Staffing	-0.023	-0.023	-0.023	-0.035	-0.036	-0.036	0.075*	0.075*	0.075*	-0.035	-0.035	-0.035
	(0.033)	(0.033)	(0.033)	(0.026)	(0.026)	(0.026)	(0.044)	(0.044)	(0.044)	(0.031)	(0.031)	(0.031)
Sequence	0.314***	0.314***	0.314***	0.013	0.013	0.013	0.038	0.038	0.038	0.245***	0.245***	0.245***
	(0.033)	(0.033)	(0.033)	(0.027)	(0.027)	(0.027)	(0.043)	(0.043)	(0.043)	(0.031)	(0.031)	(0.031)
Finance	0.048*	0.048*	0.048*	0.146***	0.145***	0.145***	-0.015	-0.015	-0.015	-0.043*	-0.043*	-0.043*
	(0.027)	(0.027)	(0.027)	(0.021)	(0.021)	(0.021)	(0.036)	(0.036)	(0.036)	(0.026)	(0.026)	(0.026)
Consultative Management												
Views of employees	0.121***	0.122***	0.122***	0.042	0.042	0.042	-0.040	-0.040	-0.040	-0.002	-0.002	-0.002

	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
						Satisfaction with:						
	(0.034)	(0.034)	(0.034)	(0.027)	(0.027)	(0.027)	(0.044)	(0.044)	(0.044)	(0.032)	(0.032)	(0.032)
Response to suggestions	0.131***	0.131***	0.131***	0.050	0.051*	0.051*	-0.075	-0.074	-0.074	0.090**	0.090**	0.090**
	(0.039)	(0.039)	(0.039)	(0.031)	(0.031)	(0.031)	(0.051)	(0.051)	(0.051)	(0.037)	(0.037)	(0.037)
Influence of employees	0.094**	0.094**	0.094**	0.166***	0.166***	0.165***	0.200***	0.200***	0.200***	0.025	0.025	0.025
	(0.037)	(0.037)	(0.037)	(0.028)	(0.028)	(0.028)	(0.047)	(0.047)	(0.047)	(0.034)	(0.034)	(0.034)
Supportive Management												
Keep promises	0.058	0.058	0.058	0.118***	0.117***	0.116***	0.081*	0.080	0.080	-0.016	-0.017	-0.016
	(0.038)	(0.038)	(0.038)	(0.030)	(0.030)	(0.030)	(0.049)	(0.049)	(0.049)	(0.035)	(0.035)	(0.035)
Sincere	-0.105**	-0.106**	-0.106**	-0.129***	-0.130***	-0.130***	-0.021	-0.021	-0.021	0.034	0.034	0.034
	(0.042)	(0.042)	(0.042)	(0.033)	(0.033)	(0.033)	(0.054)	(0.054)	(0.054)	(0.038)	(0.038)	(0.038)
Honest	-0.077*	-0.077*	-0.077*	-0.045	-0.044	-0.044	-0.125**	-0.125**	-0.125**	-0.051	-0.051	-0.051
	(0.042)	(0.042)	(0.042)	(0.033)	(0.033)	(0.033)	(0.055)	(0.055)	(0.055)	(0.039)	(0.039)	(0.039)
Understanding	-0.027	-0.026	-0.026	0.035	0.037	0.037*	0.046	0.046	0.046	0.051**	0.051**	0.051**
	(0.028)	(0.028)	(0.028)	(0.022)	(0.022)	(0.022)	(0.037)	(0.037)	(0.037)	(0.026)	(0.026)	(0.026)
Encouraging	1.060***	1.060***	1.060***	0.118***	0.119***	0.119***	0.087**	0.087**	0.087**	0.170***	0.170***	0.170***
	(0.032)	(0.032)	(0.032)	(0.024)	(0.024)	(0.024)	(0.040)	(0.040)	(0.040)	(0.028)	(0.028)	(0.028)
Treat fairly	-0.011	-0.011	-0.011	0.168***	0.167***	0.167***	0.120***	0.119***	0.120***	0.079**	0.079**	0.079**
	(0.034)	(0.034)	(0.034)	(0.027)	(0.027)	(0.027)	(0.045)	(0.045)	(0.045)	(0.032)	(0.032)	(0.032)
Interactions												
Merit pay x suggestion scheme		-0.100			-0.277***			-0.135			-0.043	
		(0.095)			(0.073)			(0.123)			(0.086)	
Merit pay x suggestion schemex EO policies			-0.113			-0.280***			-0.153			-0.028
			(0.094)			(0.073)			(0.122)			(0.085)
CONTROLS												
Job Demand												
Work overload	-0.073***	-0.072***	-0.072***	-0.059***	-0.058***	-0.058***	-0.025	-0.024	-0.024	-0.189***	-0.189***	-0.189***
	(0.025)	(0.025)	(0.025)	(0.018)	(0.018)	(0.018)	(0.032)	(0.032)	(0.032)	(0.023)	(0.023)	(0.023)
Work Intensity	0.083***	0.082***	0.082***	-0.218***	-0.219***	-0.219***	-0.191***	-0.192***	-0.192***	0.268***	0.268***	0.268***
	(0.032)	(0.032)	(0.032)	(0.024)	(0.024)	(0.024)	(0.041)	(0.041)	(0.041)	(0.029)	(0.029)	(0.029)
Timing Demand	-0.078***	-0.079***	-0.079***	-0.082***	-0.082***	-0.082***	-0.065**	-0.066**	-0.066**	-0.182***	-0.182***	-0.182***
	(0.021)	(0.021)	(0.021)	(0.016)	(0.016)	(0.016)	(0.028)	(0.028)	(0.028)	(0.020)	(0.020)	(0.020)
Supervisor	0.088*	0.088*	0.088*	0.154***	0.154***	0.154***	0.066	0.067	0.067	0.011	0.011	0.011
	(0.051)	(0.051)	(0.051)	(0.039)	(0.039)	(0.039)	(0.065)	(0.065)	(0.065)	(0.047)	(0.047)	(0.047)

	Satisfaction with:											
	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Intrinsic Motivation												
Using initiative	-0.039	-0.039	-0.040	-0.099***	-0.100***	-0.100***	-0.071**	-0.072**	-0.072**	0.125***	0.125***	0.125***
	(0.026)	(0.026)	(0.026)	(0.020)	(0.020)	(0.020)	(0.033)	(0.033)	(0.033)	(0.024)	(0.024)	(0.024)
Value sharing	-0.020	-0.020	-0.020	0.030	0.031	0.031	0.001	0.001	0.001	0.125***	0.125***	0.125***
	(0.033)	(0.033)	(0.033)	(0.027)	(0.027)	(0.027)	(0.043)	(0.043)	(0.043)	(0.031)	(0.031)	(0.031)
Loyal	0.035	0.036	0.037	0.073**	0.075***	0.076***	0.094**	0.095**	0.096**	0.239***	0.239***	0.239***
	(0.034)	(0.034)	(0.034)	(0.028)	(0.028)	(0.028)	(0.045)	(0.045)	(0.045)	(0.031)	(0.031)	(0.031)
Proud	0.190***	0.189***	0.189***	0.225***	0.223***	0.223***	0.078*	0.077*	0.077*	0.471***	0.471***	0.471***
	(0.032)	(0.032)	(0.032)	(0.026)	(0.026)	(0.026)	(0.041)	(0.041)	(0.041)	(0.029)	(0.029)	(0.029)
Voice mechanisms												
Grievance procedure	-0.592**	-0.589**	-0.593**	-0.230	-0.224	-0.234	-0.338	-0.330	-0.332	0.080	0.082	0.080
	(0.232)	(0.232)	(0.232)	(0.157)	(0.157)	(0.157)	(0.282)	(0.282)	(0.282)	(0.183)	(0.183)	(0.183)
Union Member (ref: not a member)												
A member	-0.110*	-0.110*	-0.110*	0.090**	0.092**	0.091**	-0.101	-0.099	-0.100	0.104**	0.104**	0.104**
	(0.057)	(0.057)	(0.057)	(0.044)	(0.044)	(0.044)	(0.071)	(0.071)	(0.071)	(0.052)	(0.052)	(0.052)
Have been in the past	-0.044	-0.044	-0.044	-0.089*	-0.088*	-0.088*	-0.016	-0.016	-0.016	0.124**	0.124**	0.124**
	(0.065)	(0.065)	(0.065)	(0.048)	(0.048)	(0.048)	(0.081)	(0.081)	(0.081)	(0.059)	(0.059)	(0.059)
Gender (ref: female)	0.155***	0.156***	0.156***	0.001	0.001	0.002	-0.065	-0.064	-0.064	-0.065	-0.065	-0.065
	(0.050)	(0.050)	(0.050)	(0.038)	(0.038)	(0.038)	(0.063)	(0.064)	(0.064)	(0.045)	(0.045)	(0.045)
White ethnic background (ref: others)	0.124	0.126	0.126	0.201***	0.205***	0.204***	0.090	0.093	0.093	0.391***	0.392***	0.391***
	(0.082)	(0.082)	(0.082)	(0.061)	(0.061)	(0.061)	(0.104)	(0.104)	(0.104)	(0.072)	(0.072)	(0.072)
Tenure (ref: <1year)												
1-2 years	-0.332***	-0.333***	-0.334***	-0.227***	-0.228***	-0.228***	0.066	0.063	0.062	-0.079	-0.079	-0.079
	(0.099)	(0.099)	(0.099)	(0.072)	(0.072)	(0.072)	(0.127)	(0.127)	(0.127)	(0.085)	(0.085)	(0.085)
2-5 years	-0.331***	-0.332***	-0.332***	-0.242***	-0.244***	-0.245***	-0.157	-0.160	-0.160	0.019	0.019	0.019
	(0.084)	(0.084)	(0.084)	(0.061)	(0.061)	(0.061)	(0.106)	(0.106)	(0.106)	(0.072)	(0.072)	(0.072)
5-10 years	-0.303***	-0.303***	-0.304***	-0.161**	-0.163***	-0.163***	-0.158	-0.161	-0.162	0.054	0.054	0.054
	(0.087)	(0.087)	(0.087)	(0.063)	(0.063)	(0.063)	(0.109)	(0.109)	(0.109)	(0.075)	(0.075)	(0.075)
>10 years	-0.133	-0.134	-0.134	-0.110*	-0.112*	-0.113*	-0.085	-0.088	-0.088	0.065	0.065	0.065
	(0.090)	(0.090)	(0.090)	(0.065)	(0.065)	(0.065)	(0.110)	(0.110)	(0.110)	(0.077)	(0.077)	(0.077)
contract (ref: permanent)												
Temporary	0.079	0.078	0.077	0.238**	0.235**	0.234**	-0.688***	-0.688***	-0.688***	0.253**	0.252**	0.252**
	(0.131)	(0.131)	(0.131)	(0.095)	(0.095)	(0.095)	(0.139)	(0.139)	(0.139)	(0.116)	(0.116)	(0.116)

	Satisfaction with:											
	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Fixed	0.027	0.027	0.027	0.204**	0.203**	0.204**	-0.769***	-0.769***	-0.769***	0.197*	0.197*	0.197*
	(0.121)	(0.121)	(0.121)	(0.092)	(0.092)	(0.092)	(0.132)	(0.132)	(0.132)	(0.111)	(0.111)	(0.111)
Marital Status (Ref: Single)												
Married	0.021	0.020	0.020	0.025	0.023	0.023	0.061	0.059	0.058	0.180***	0.179***	0.179***
	(0.057)	(0.057)	(0.057)	(0.044)	(0.044)	(0.044)	(0.075)	(0.075)	(0.075)	(0.051)	(0.051)	(0.051)
Divorced	-0.043	-0.042	-0.042	-0.138*	-0.137*	-0.136*	0.005	0.005	0.006	0.232***	0.232***	0.232***
	(0.094)	(0.094)	(0.094)	(0.071)	(0.071)	(0.071)	(0.118)	(0.118)	(0.118)	(0.087)	(0.087)	(0.087)
Widowed	0.305	0.304	0.305	0.210	0.208	0.210	0.188	0.187	0.187	0.214	0.213	0.213
	(0.218)	(0.218)	(0.218)	(0.146)	(0.146)	(0.146)	(0.250)	(0.249)	(0.249)	(0.181)	(0.181)	(0.181)
Age (ref: 16-29)												
30-49	0.104	0.105	0.105	0.031	0.032	0.033	-0.063	-0.061	-0.061	0.139**	0.139**	0.139**
	(0.066)	(0.066)	(0.066)	(0.051)	(0.051)	(0.051)	(0.090)	(0.090)	(0.090)	(0.060)	(0.060)	(0.060)
50 and above	0.284***	0.284***	0.284***	-0.012	-0.012	-0.011	-0.112	-0.112	-0.111	0.211***	0.211***	0.211***
	(0.079)	(0.079)	(0.079)	(0.060)	(0.060)	(0.060)	(0.104)	(0.104)	(0.104)	(0.072)	(0.072)	(0.072)
Qualifications (Ref: GCSE grades D-G)												
GCSE A-C	0.057	0.057	0.057	0.067*	0.068*	0.068*	-0.011	-0.011	-0.011	0.010	0.010	0.010
	(0.051)	(0.051)	(0.051)	(0.038)	(0.038)	(0.038)	(0.064)	(0.064)	(0.064)	(0.046)	(0.046)	(0.046)
ONE GCE	-0.048	-0.048	-0.048	-0.098*	-0.096*	-0.096*	-0.150*	-0.150*	-0.150*	-0.051	-0.051	-0.051
	(0.071)	(0.071)	(0.071)	(0.055)	(0.055)	(0.055)	(0.091)	(0.091)	(0.091)	(0.065)	(0.065)	(0.065)
TWO or more GCE	-0.099*	-0.100*	-0.100*	0.072	0.070	0.070	-0.005	-0.006	-0.006	0.004	0.004	0.004
	(0.057)	(0.057)	(0.057)	(0.045)	(0.045)	(0.045)	(0.074)	(0.074)	(0.074)	(0.053)	(0.053)	(0.053)
First degree	-0.255***	-0.255***	-0.255***	0.052	0.053	0.053	0.006	0.006	0.006	0.021	0.021	0.021
	(0.057)	(0.057)	(0.057)	(0.045)	(0.045)	(0.045)	(0.073)	(0.073)	(0.073)	(0.053)	(0.053)	(0.053)
Higher degree	0.126	0.124	0.124	0.184***	0.178***	0.178***	-0.008	-0.012	-0.012	0.090	0.090	0.090
	(0.078)	(0.078)	(0.078)	(0.062)	(0.062)	(0.062)	(0.099)	(0.099)	(0.099)	(0.073)	(0.073)	(0.073)
Other academic qualification	0.014	0.014	0.014	-0.042	-0.042	-0.042	-0.076	-0.077	-0.077	-0.002	-0.002	-0.002
	(0.056)	(0.056)	(0.056)	(0.043)	(0.043)	(0.043)	(0.070)	(0.070)	(0.070)	(0.052)	(0.052)	(0.052)
No academic qualification	0.118	0.117	0.117	-0.004	-0.003	-0.002	0.219	0.221	0.221	0.035	0.035	0.035
	(0.129)	(0.129)	(0.129)	(0.087)	(0.087)	(0.087)	(0.163)	(0.163)	(0.163)	(0.109)	(0.109)	(0.109)
Level 1 NVQ	-0.045	-0.045	-0.045	0.081	0.079	0.079	-0.051	-0.049	-0.048	-0.016	-0.016	-0.016
	(0.075)	(0.075)	(0.075)	(0.057)	(0.057)	(0.057)	(0.098)	(0.098)	(0.098)	(0.069)	(0.069)	(0.069)
Level 2 NVQ	-0.082	-0.083	-0.083	-0.087**	-0.090**	-0.090**	-0.132*	-0.135*	-0.135*	-0.010	-0.011	-0.010
	(0.057)	(0.057)	(0.057)	(0.043)	(0.043)	(0.043)	(0.072)	(0.072)	(0.072)	(0.052)	(0.052)	(0.052)

	Satisfaction with:											
	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Level 3 NVQ	-0.176***	-0.177***	-0.178***	-0.027	-0.029	-0.029	-0.053	-0.055	-0.055	-0.045	-0.046	-0.045
	(0.057)	(0.057)	(0.057)	(0.044)	(0.044)	(0.044)	(0.072)	(0.072)	(0.072)	(0.053)	(0.053)	(0.053)
Level 4 NVQ	-0.021	-0.021	-0.021	0.012	0.012	0.012	-0.077	-0.077	-0.077	-0.109	-0.109	-0.109
	(0.094)	(0.094)	(0.094)	(0.072)	(0.072)	(0.072)	(0.115)	(0.115)	(0.115)	(0.086)	(0.086)	(0.086)
Level 5 NVQ	-0.514**	-0.514**	-0.514**	-0.239	-0.238	-0.238	-0.176	-0.176	-0.176	-0.298	-0.298	-0.298
	(0.230)	(0.230)	(0.230)	(0.186)	(0.186)	(0.186)	(0.282)	(0.283)	(0.283)	(0.222)	(0.222)	(0.222)
Completion of apprenticeship	0.069	0.070	0.070	0.041	0.043	0.043	0.120	0.121	0.120	0.224***	0.224***	0.224***
	(0.087)	(0.088)	(0.088)	(0.068)	(0.068)	(0.068)	(0.109)	(0.109)	(0.109)	(0.081)	(0.081)	(0.081)
Other vocational qualification	-0.058	-0.058	-0.058	-0.048	-0.047	-0.047	-0.068	-0.067	-0.067	-0.070	-0.070	-0.070
	(0.071)	(0.072)	(0.072)	(0.056)	(0.056)	(0.056)	(0.090)	(0.090)	(0.090)	(0.067)	(0.067)	(0.067)
Other professional qualification	0.136**	0.136**	0.136**	0.278***	0.277***	0.277***	0.110	0.110	0.111	0.161***	0.161***	0.161***
	(0.061)	(0.061)	(0.061)	(0.048)	(0.048)	(0.048)	(0.077)	(0.077)	(0.077)	(0.057)	(0.057)	(0.057)
No vocational qualification	0.375***	0.374***	0.374***	0.160**	0.157**	0.157**	-0.004	-0.006	-0.006	0.140	0.139	0.139
	(0.108)	(0.108)	(0.108)	(0.075)	(0.075)	(0.075)	(0.135)	(0.135)	(0.135)	(0.092)	(0.092)	(0.092)
No religion (ref: having a religion)	-0.024	-0.024	-0.024	0.025	0.026	0.026	0.021	0.022	0.022	-0.022	-0.022	-0.022
	(0.047)	(0.047)	(0.047)	(0.037)	(0.037)	(0.037)	(0.061)	(0.061)	(0.061)	(0.043)	(0.043)	(0.043)
Heterosexual (ref: other orientations)	0.042	0.042	0.042	-0.028	-0.027	-0.028	-0.033	-0.032	-0.032	-0.071	-0.070	-0.071
	(0.083)	(0.083)	(0.083)	(0.063)	(0.063)	(0.063)	(0.104)	(0.104)	(0.104)	(0.075)	(0.075)	(0.075)
Organizational size (ref: 5-999)												
1000-9,999	0.118**	0.117**	0.117**	0.015	0.011	0.012	-0.022	-0.022	-0.021	-0.034	-0.035	-0.035
	(0.057)	(0.057)	(0.057)	(0.043)	(0.043)	(0.043)	(0.072)	(0.072)	(0.072)	(0.052)	(0.052)	(0.052)
10,000 and above	0.061	0.062	0.062	-0.075	-0.076	-0.075	0.012	0.013	0.014	-0.053	-0.053	-0.053
	(0.061)	(0.061)	(0.061)	(0.046)	(0.046)	(0.046)	(0.078)	(0.078)	(0.078)	(0.056)	(0.056)	(0.056)
Industries (ref: manufacturing)												
Electricity	0.304*	0.300*	0.298*	0.598***	0.585***	0.584***	0.629***	0.624***	0.623***	0.291**	0.289**	0.289**
	(0.167)	(0.167)	(0.167)	(0.145)	(0.145)	(0.145)	(0.232)	(0.232)	(0.232)	(0.147)	(0.147)	(0.147)
Water supply	0.422**	0.428**	0.429**	0.056	0.068	0.067	0.490**	0.497**	0.498**	0.022	0.024	0.023
	(0.199)	(0.199)	(0.199)	(0.150)	(0.150)	(0.150)	(0.247)	(0.247)	(0.247)	(0.166)	(0.167)	(0.167)
Construction	0.220	0.217	0.217	0.056	0.050	0.050	0.045	0.042	0.042	0.294**	0.293**	0.293**
	(0.140)	(0.140)	(0.140)	(0.107)	(0.107)	(0.107)	(0.175)	(0.175)	(0.175)	(0.124)	(0.124)	(0.124)
Wholesale/Retail	0.162	0.163	0.163	-0.167**	-0.161*	-0.160*	0.069	0.075	0.076	0.126	0.127	0.127
	(0.111)	(0.111)	(0.111)	(0.083)	(0.083)	(0.083)	(0.155)	(0.155)	(0.155)	(0.097)	(0.097)	(0.097)
Transportation	0.361***	0.359***	0.359***	0.576***	0.573***	0.573***	-0.200	-0.201	-0.200	0.233**	0.232**	0.232**

	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Satisfaction with:												
	(0.115)	(0.115)	(0.115)	(0.092)	(0.092)	(0.092)	(0.146)	(0.146)	(0.146)	(0.103)	(0.103)	(0.103)
Accommodation services	0.060	0.064	0.061	-0.171	-0.164	-0.172	0.182	0.187	0.187	0.060	0.061	0.060
	(0.151)	(0.151)	(0.151)	(0.109)	(0.109)	(0.109)	(0.209)	(0.209)	(0.209)	(0.128)	(0.128)	(0.128)
Information and communication	-0.058	-0.060	-0.060	-0.418***	-0.424***	-0.423***	-0.306	-0.311	-0.311	0.343**	0.342**	0.342**
	(0.155)	(0.155)	(0.155)	(0.126)	(0.126)	(0.126)	(0.217)	(0.217)	(0.217)	(0.147)	(0.147)	(0.147)
Financial services	0.097	0.096	0.095	-0.273*	-0.277*	-0.277*	0.404	0.406	0.407	0.055	0.055	0.055
	(0.188)	(0.188)	(0.188)	(0.154)	(0.154)	(0.154)	(0.276)	(0.276)	(0.276)	(0.167)	(0.167)	(0.167)
Real estate	0.298*	0.297*	0.297*	-0.050	-0.052	-0.052	0.022	0.023	0.024	0.199	0.198	0.199
	(0.153)	(0.153)	(0.153)	(0.115)	(0.115)	(0.115)	(0.193)	(0.193)	(0.193)	(0.135)	(0.135)	(0.135)
Professional services	0.256*	0.259**	0.260**	-0.299***	-0.289***	-0.289***	-0.088	-0.083	-0.082	0.249**	0.250**	0.250**
	(0.131)	(0.131)	(0.131)	(0.102)	(0.102)	(0.102)	(0.172)	(0.172)	(0.172)	(0.117)	(0.117)	(0.117)
Administrative and support	-0.087	-0.086	-0.086	-0.123	-0.121	-0.121	0.072	0.071	0.072	0.340**	0.341**	0.340**
	(0.151)	(0.151)	(0.151)	(0.116)	(0.116)	(0.116)	(0.211)	(0.211)	(0.211)	(0.137)	(0.137)	(0.137)
Public admin	0.296**	0.296**	0.297**	-0.330***	-0.328***	-0.327***	0.070	0.072	0.072	0.335***	0.335***	0.335***
	(0.119)	(0.119)	(0.119)	(0.093)	(0.093)	(0.093)	(0.151)	(0.151)	(0.151)	(0.108)	(0.108)	(0.108)
Education	0.446***	0.447***	0.447***	-0.219**	-0.218**	-0.219**	0.332**	0.336**	0.337**	0.551***	0.552***	0.552***
	(0.113)	(0.113)	(0.113)	(0.086)	(0.086)	(0.086)	(0.146)	(0.146)	(0.146)	(0.103)	(0.103)	(0.103)
Human health	0.293***	0.293***	0.293***	-0.247***	-0.247***	-0.248***	0.175	0.176	0.177	0.414***	0.414***	0.414***
	(0.104)	(0.104)	(0.104)	(0.077)	(0.077)	(0.077)	(0.134)	(0.134)	(0.134)	(0.092)	(0.092)	(0.092)
Arts, entertainment	0.282**	0.282**	0.282**	-0.275***	-0.277***	-0.277***	0.049	0.050	0.050	0.600***	0.599***	0.600***
	(0.133)	(0.133)	(0.133)	(0.100)	(0.100)	(0.100)	(0.168)	(0.168)	(0.168)	(0.125)	(0.125)	(0.125)
Other services	0.087	0.093	0.093	0.205*	0.218*	0.213*	-0.255	-0.249	-0.249	0.616***	0.619***	0.618***
	(0.153)	(0.153)	(0.153)	(0.125)	(0.125)	(0.125)	(0.200)	(0.200)	(0.200)	(0.149)	(0.149)	(0.149)
Public sector	-0.050	-0.047	-0.046	0.080	0.090*	0.089*	-0.319***	-0.315***	-0.314***	0.089	0.090	0.090
	(0.067)	(0.067)	(0.067)	(0.051)	(0.051)	(0.051)	(0.083)	(0.083)	(0.083)	(0.062)	(0.062)	(0.062)
Occupational Categories (ref: Managerial)												
Intermediate	0.079	0.081	0.082	-0.101**	-0.097**	-0.097**	0.022	0.024	0.024	-0.164***	-0.163***	-0.163***
	(0.060)	(0.060)	(0.060)	(0.046)	(0.046)	(0.046)	(0.076)	(0.076)	(0.076)	(0.055)	(0.055)	(0.055)
Lower	0.225***	0.226***	0.225***	-0.231***	-0.231***	-0.232***	-0.115	-0.115	-0.116	0.028	0.028	0.028
	(0.072)	(0.072)	(0.072)	(0.054)	(0.054)	(0.054)	(0.090)	(0.090)	(0.090)	(0.065)	(0.065)	(0.065)
Intercept	-5.506***	-5.513***	-5.514***	-1.413***	-1.432***	-1.435***	-5.306***	-5.314***	-5.317***	-7.119***	-7.123***	-7.122***
	(0.379)	(0.379)	(0.379)	(0.272)	(0.272)	(0.272)	(0.487)	(0.488)	(0.488)	(0.327)	(0.327)	(0.327)

	Satisfaction with:											
	Skills Main	Skills IAE[1]	Skills IAE[2]	Pay Main	Pay IAE[1]	Pay IAE[2]	Job security Main	Job security IAE[1]	Job security IAE[2]	Work Main	Work IAE[1]	Work IAE[2]
Pseudo R-Squared	0.312	0.312	0.312	0.134	0.135	0.135	0.558	0.558	0.558	0.256	0.256	0.256
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596	20596

Notes: IAE[1] refers to the two-way interaction effect model while IAE[2] shows three-way interaction effect model. Standard errors in parentheses. Coefficients are statistically significant at * p<0.10, ** p<0.05, *** p<0.01

Table A.0.4: Main, Two-Way and Three-Way Interaction Effects Models (3)

	Satisfaction with:		
	Involvement in decision Main	Involvement in decision IAE[1]	Involvement in decision IAE[2]
Main Predictors			
Individual form of participation in decisions at employee level			
Over tasks	0.145***	0.146***	0.146***
	(0.034)	(0.034)	(0.034)
Over pace	0.054*	0.053*	0.053*
	(0.032)	(0.032)	(0.032)
On How to do task	0.062	0.061	0.061
	(0.041)	(0.041)	(0.041)
Over Order of task	0.130***	0.130***	0.130***
	(0.037)	(0.037)	(0.037)
Over Working Time	-0.024	-0.024	-0.024
	(0.023)	(0.023)	(0.023)
Individual forms of participation in decisions at workplace level (ref: none)			
Suggestion	0.015	-0.056	-0.056
	(0.053)	(0.062)	(0.061)
Notice Boards	-0.110	-0.107	-0.107
	(0.067)	(0.067)	(0.067)
Cascade	-0.028	-0.023	-0.024
	(0.061)	(0.061)	(0.061)
Newsletters	0.019	0.017	0.017
	(0.057)	(0.057)	(0.057)
Email	0.042	0.047	0.048
	(0.068)	(0.068)	(0.068)
Intranet	-0.063	-0.057	-0.058
	(0.062)	(0.062)	(0.062)
Other	-0.035	-0.037	-0.037
	(0.052)	(0.052)	(0.052)
Collective form of participation in decisions at workplace level	-0.036	-0.038	-0.038
	(0.052)	(0.052)	(0.052)
Secure job	0.109***	0.108***	0.108***
	(0.023)	(0.023)	(0.023)
Individual Incentive pay			
Merit Pay	0.128**	0.010	0.009
	(0.056)	(0.076)	(0.076)
Types of Pay (ref: basic pay)			
Individual pay	-0.149*	-0.152*	-0.152*
	(0.086)	(0.086)	(0.086)
Group pay	-0.099	-0.095	-0.094
	(0.120)	(0.120)	(0.120)
Workplace pay	0.109	0.108	0.107
	(0.109)	(0.109)	(0.109)
Extra pay	-0.039	-0.040	-0.040
	(0.055)	(0.055)	(0.055)
Pension (deferred payment schemes like ESOP)	-0.028	-0.027	-0.027
	(0.054)	(0.054)	(0.054)
Measures of fairness			
Appeal right	0.154	0.177	0.176
	(0.196)	(0.196)	(0.196)
EO policies	-0.047	-0.048	-0.057
	(0.124)	(0.123)	(0.123)
Informative Management			
Operations	0.035	0.035	0.035
	(0.036)	(0.036)	(0.036)
Staffing	0.036	0.036	0.037
	(0.035)	(0.035)	(0.035)

	Satisfaction with:		
	Involvement in decision **Main**	**Involvement in decision** **IAE[1]**	**Involvement in decision** **IAE[2]**
Sequence	0.227***	0.227***	0.227***
	(0.035)	(0.035)	(0.035)
Finance	0.150***	0.150***	0.150***
	(0.029)	(0.029)	(0.029)
Consultative Management			
Views of employees	0.168***	0.167***	0.167***
	(0.035)	(0.035)	(0.035)
Response to suggestions	0.377***	0.376***	0.376***
	(0.041)	(0.041)	(0.041)
Influence of employees	0.785***	0.786***	0.786***
	(0.040)	(0.040)	(0.040)
Supportive Management			
Keep promises	0.055	0.056	0.056
	(0.040)	(0.040)	(0.040)
Sincere	0.129***	0.130***	0.130***
	(0.043)	(0.043)	(0.043)
Honest	-0.011	-0.012	-0.012
	(0.044)	(0.044)	(0.044)
Understanding	0.005	0.004	0.004
	(0.030)	(0.030)	(0.030)
Encouraging	0.181***	0.181***	0.181***
	(0.032)	(0.032)	(0.032)
Treat fairly	0.137***	0.138***	0.138***
	(0.036)	(0.036)	(0.036)
Interactions			
Merit pay x suggestion scheme		0.240**	
		(0.106)	
Merit pay x suggestion schemex EO policies			0.247**
			(0.105)
CONTROLS			
Job Demand			
Work overload	-0.084***	-0.085***	-0.085***
	(0.027)	(0.027)	(0.027)
Work Intensity	-0.042	-0.042	-0.042
	(0.035)	(0.035)	(0.035)
Timing Demand	-0.089***	-0.089***	-0.089***
	(0.023)	(0.023)	(0.023)
Supervisor	0.193***	0.194***	0.193***
	(0.057)	(0.057)	(0.057)
Intrinsic Motivation			
Using initiative	-0.034	-0.034	-0.034
	(0.029)	(0.029)	(0.029)
Value sharing	0.058	0.058	0.058
	(0.037)	(0.037)	(0.037)
Loyal	0.106***	0.103***	0.103***
	(0.037)	(0.037)	(0.037)
Proud	0.114***	0.116***	0.117***
	(0.034)	(0.034)	(0.034)
Voice mechanisms			
Grievance procedure	-0.221	-0.232	-0.226
	(0.260)	(0.261)	(0.261)
Union Member (ref: not a member)			
A member	-0.173***	-0.174***	-0.173***
	(0.063)	(0.063)	(0.063)
Have been in the past	0.014	0.014	0.014
	(0.073)	(0.073)	(0.073)
Gender (ref: female)	0.029	0.028	0.027
	(0.056)	(0.056)	(0.056)
White ethnic background (ref: others)	0.249***	0.245***	0.245***
	(0.090)	(0.090)	(0.090)
Tenure (ref: <1year)			

	Satisfaction with:		
	Involvement in decision	Involvement in decision	Involvement in decision
	Main	IAE[1]	IAE[2]
1-2 years	-0.268**	-0.268**	-0.267**
	(0.114)	(0.114)	(0.114)
2-5 years	-0.320***	-0.319***	-0.319***
	(0.097)	(0.097)	(0.097)
5-10 years	-0.281***	-0.281***	-0.280***
	(0.098)	(0.099)	(0.099)
>10 years	-0.113	-0.112	-0.112
	(0.101)	(0.101)	(0.101)
contract (ref: permanent)			
Temporary	0.097	0.099	0.100
	(0.151)	(0.151)	(0.151)
Fixed	-0.212	-0.212	-0.212
	(0.137)	(0.137)	(0.137)
Marital Status (Ref: Single)			
Married	0.101	0.103	0.103
	(0.064)	(0.064)	(0.064)
Divorced	0.095	0.091	0.091
	(0.104)	(0.104)	(0.104)
Widowed	0.070	0.073	0.072
	(0.220)	(0.219)	(0.219)
Age (ref: 16-29)			
30-49	0.014	0.013	0.013
	(0.075)	(0.075)	(0.075)
50 and above	-0.087	-0.087	-0.087
	(0.088)	(0.088)	(0.088)
Qualifications (Ref: GCSE grades D-G)			
GCSE A-C	0.099*	0.099*	0.098*
	(0.056)	(0.056)	(0.056)
ONE GCE	-0.157**	-0.157**	-0.157**
	(0.079)	(0.079)	(0.079)
TWO or more GCE	-0.174***	-0.172***	-0.172***
	(0.063)	(0.064)	(0.064)
First degree	-0.062	-0.062	-0.062
	(0.064)	(0.064)	(0.064)
Higher degree	-0.104	-0.098	-0.098
	(0.086)	(0.086)	(0.086)
Other academic qualification	-0.155**	-0.155**	-0.155**
	(0.061)	(0.061)	(0.061)
No academic qualification	0.177	0.177	0.177
	(0.136)	(0.137)	(0.137)
Level 1 NVQ	-0.020	-0.018	-0.018
	(0.085)	(0.085)	(0.085)
Level 2 NVQ	-0.014	-0.012	-0.012
	(0.064)	(0.064)	(0.064)
Level 3 NVQ	-0.055	-0.053	-0.053
	(0.064)	(0.064)	(0.064)
Level 4 NVQ	-0.088	-0.089	-0.089
	(0.105)	(0.105)	(0.105)
Level 5 NVQ	-0.004	-0.004	-0.004
	(0.285)	(0.285)	(0.285)
Completion of apprenticeship	0.156	0.153	0.154
	(0.099)	(0.099)	(0.099)
Other vocational qualification	-0.059	-0.058	-0.058
	(0.081)	(0.081)	(0.081)
Other professional qualification	-0.065	-0.064	-0.064
	(0.067)	(0.067)	(0.067)
No vocational qualification	0.103	0.107	0.107
	(0.112)	(0.112)	(0.112)
No religion (ref: having a religion)	-0.009	-0.010	-0.010
	(0.053)	(0.053)	(0.053)
Heterosexual (ref: other orientations)	-0.034	-0.035	-0.035

	Satisfaction with:		
	Involvement in decision	Involvement in decision	Involvement in decision
	Main	IAE[1]	IAE[2]
	(0.093)	(0.093)	(0.093)
Organizational size (ref: 5-999)			
1000-9,999	-0.056	-0.054	-0.055
	(0.063)	(0.063)	(0.063)
10,000 and above	-0.028	-0.028	-0.028
	(0.068)	(0.068)	(0.068)
Industries (ref: manufacturing)			
Electricity	0.212	0.223	0.223
	(0.187)	(0.187)	(0.187)
Water supply	0.007	-0.005	-0.006
	(0.210)	(0.211)	(0.211)
Construction	0.085	0.092	0.092
	(0.159)	(0.159)	(0.159)
Wholesale/Retail	-0.138	-0.142	-0.143
	(0.127)	(0.127)	(0.127)
Transportation	-0.063	-0.059	-0.060
	(0.126)	(0.126)	(0.126)
Accommodation services	-0.060	-0.068	-0.063
	(0.174)	(0.174)	(0.174)
Information and communication	-0.450**	-0.451**	-0.452**
	(0.187)	(0.187)	(0.187)
Financial services	-0.434**	-0.430**	-0.431**
	(0.207)	(0.207)	(0.207)
Real estate	0.022	0.023	0.022
	(0.176)	(0.176)	(0.176)
Professional services	-0.055	-0.065	-0.065
	(0.155)	(0.155)	(0.155)
Administrative and support	-0.089	-0.093	-0.093
	(0.182)	(0.182)	(0.182)
Public admin	-0.196	-0.200	-0.201
	(0.134)	(0.134)	(0.134)
Education	-0.126	-0.129	-0.129
	(0.127)	(0.127)	(0.127)
Human health	-0.210*	-0.211*	-0.211*
	(0.115)	(0.115)	(0.115)
Arts, entertainment	-0.297**	-0.296**	-0.296**
	(0.148)	(0.148)	(0.148)
Other services	-0.130	-0.144	-0.144
	(0.174)	(0.174)	(0.174)
Public sector	0.037	0.027	0.027
	(0.073)	(0.073)	(0.073)
Occupational Categories (ref: Managerial)			
Intermediate	0.024	0.019	0.019
	(0.068)	(0.068)	(0.068)
Lower	0.003	0.002	0.003
	(0.080)	(0.080)	(0.080)
Intercept	-6.332***	-6.311***	-6.309***
	(0.426)	(0.426)	(0.426)
Pseudo R-Squared	0.444	0.444	0.444
Prob > chi2	0.000	0.000	0.000
N	20596	20596	20596

Notes: IAE[1] refers to the two-way interaction effect model while IAE[2] shows three-way interaction effect model. Standard errors in parentheses. Coefficients are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.0.5: **Weighted Logit Estimation of Demand-Control Model (Coefficients)**

	Satisfaction with:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
Main Predictors									
Job Control									
Over tasks	0.243***	0.391***	0.582***	0.043	0.142***	0.072**	0.096*	0.163***	0.113**
	(0.037)	(0.038)	(0.039)	(0.041)	(0.041)	(0.033)	(0.055)	(0.036)	(0.046)
Over pace	-0.021	-0.038	0.009	0.031	0.032	0.078***	0.109**	-0.020	0.024
	(0.035)	(0.036)	(0.036)	(0.037)	(0.037)	(0.030)	(0.052)	(0.034)	(0.043)
On How to do task	0.080*	0.298***	0.197***	0.080*	0.175***	0.015	0.110*	0.120***	0.023
	(0.044)	(0.046)	(0.047)	(0.048)	(0.048)	(0.039)	(0.067)	(0.043)	(0.056)
Over Order of task	-0.023	0.184***	0.112***	0.067	0.036	-0.001	0.055	-0.075*	0.099**
	(0.042)	(0.042)	(0.042)	(0.045)	(0.045)	(0.036)	(0.061)	(0.040)	(0.050)
Over Working Time	0.003	0.022	0.113***	0.085***	0.101***	0.101***	0.029	-0.050**	-0.042
	(0.023)	(0.025)	(0.025)	(0.026)	(0.025)	(0.020)	(0.035)	(0.023)	(0.028)
Job Demand									
Work overload	-0.094**	-0.020	-0.120***	-0.225***	-0.186***	-0.081**	-0.089	-0.106**	-0.041
	(0.044)	(0.045)	(0.041)	(0.045)	(0.045)	(0.036)	(0.069)	(0.043)	(0.057)
Work Intensity	0.501***	0.268***	0.115**	-0.055	-0.059	-0.239***	-0.274***	0.369***	0.013
	(0.054)	(0.056)	(0.051)	(0.056)	(0.057)	(0.049)	(0.091)	(0.053)	(0.071)
Timing Demand	-0.074**	-0.063	-0.139***	-0.106***	-0.174***	-0.097***	-0.122**	-0.112***	-0.049
	(0.038)	(0.039)	(0.034)	(0.037)	(0.038)	(0.031)	(0.059)	(0.036)	(0.048)
Types of Jobs (ref: LD_HC)									
HD_HC	-0.061	0.101	-0.030	0.054	0.014	-0.105	0.009	-0.091	-0.098
	(0.082)	(0.091)	(0.075)	(0.082)	(0.090)	(0.066)	(0.107)	(0.080)	(0.099)
HD_LC	-0.243***	-0.099	-0.203**	0.168*	0.138	-0.165**	0.179	-0.209**	-0.234**
	(0.091)	(0.101)	(0.089)	(0.098)	(0.105)	(0.080)	(0.127)	(0.094)	(0.112)
LD_LC	-0.268***	-0.109	-0.174**	0.084	0.086	0.053	0.015	-0.113	-0.088
	(0.073)	(0.078)	(0.073)	(0.081)	(0.085)	(0.064)	(0.102)	(0.074)	(0.092)
Demand x EO Policies	-0.117*	-0.104	0.019	0.081	0.195***	0.091*	0.085	-0.120*	-0.038
	(0.066)	(0.067)	(0.060)	(0.064)	(0.067)	(0.055)	(0.109)	(0.063)	(0.085)
Control x EO Policies	0.109**	0.099**	0.176***	-0.010	-0.029	-0.047	-0.080	0.111**	0.041
	(0.046)	(0.048)	(0.054)	(0.051)	(0.048)	(0.042)	(0.077)	(0.043)	(0.060)
Control Variables									
Consultation Schemes (ref: none)									

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
Suggestion	0.013	0.013	0.070	0.149***	0.068	0.013	0.092	-0.007	0.013
	(0.047)	(0.047)	(0.043)	(0.051)	(0.053)	(0.048)	(0.061)	(0.047)	(0.055)
Notice Boards	0.006	-0.037	-0.008	0.139**	-0.032	-0.166***	-0.106	-0.012	-0.104
	(0.056)	(0.063)	(0.052)	(0.062)	(0.061)	(0.057)	(0.074)	(0.058)	(0.070)
Cascade	0.014	0.057	0.022	-0.002	-0.158***	0.011	-0.023	0.054	-0.037
	(0.052)	(0.055)	(0.047)	(0.059)	(0.057)	(0.051)	(0.071)	(0.053)	(0.066)
Newsletters	-0.026	0.016	0.016	-0.047	-0.015	-0.035	0.085	-0.038	0.018
	(0.049)	(0.052)	(0.045)	(0.055)	(0.055)	(0.051)	(0.064)	(0.050)	(0.060)
Email	0.001	-0.017	-0.077	-0.079	-0.008	0.081	-0.105	-0.034	0.036
	(0.057)	(0.060)	(0.053)	(0.068)	(0.066)	(0.059)	(0.088)	(0.059)	(0.073)
Intranet	-0.059	-0.023	-0.015	0.120**	0.056	0.037	-0.057	-0.049	-0.056
	(0.052)	(0.054)	(0.049)	(0.059)	(0.058)	(0.054)	(0.077)	(0.056)	(0.065)
Other	-0.010	-0.005	0.002	-0.005	-0.028	-0.019	-0.022	0.059	-0.037
	(0.045)	(0.048)	(0.043)	(0.051)	(0.052)	(0.045)	(0.061)	(0.047)	(0.055)
Joint Consultative Committees	0.026	-0.013	-0.064	-0.046	-0.031	0.011	-0.095	-0.011	-0.039
	(0.045)	(0.048)	(0.043)	(0.050)	(0.051)	(0.048)	(0.061)	(0.046)	(0.054)
Secure job	0.142***	0.130***	0.199***	0.198***	0.230***	0.136***	2.355***	0.191***	0.109***
	(0.020)	(0.021)	(0.020)	(0.022)	(0.023)	(0.018)	(0.048)	(0.020)	(0.024)
Individual Incentive pay									
Merit Pay	-0.015	0.013	-0.054	-0.100*	0.003	0.030	-0.070	-0.037	0.131**
	(0.046)	(0.050)	(0.045)	(0.054)	(0.054)	(0.051)	(0.065)	(0.048)	(0.058)
Types of Pay (ref: basic pay)									
Individual pay	0.153**	-0.067	-0.056	0.067	0.028	0.088	0.153	0.006	-0.149*
	(0.072)	(0.077)	(0.070)	(0.076)	(0.078)	(0.066)	(0.100)	(0.071)	(0.081)
Group pay	0.011	0.149	0.127	-0.186*	0.054	0.031	0.087	0.028	-0.098
	(0.091)	(0.103)	(0.094)	(0.104)	(0.116)	(0.086)	(0.135)	(0.090)	(0.122)
Workplace pay	0.182**	0.000	-0.056	-0.119	0.026	0.285***	-0.018	0.080	0.108
	(0.091)	(0.092)	(0.089)	(0.091)	(0.102)	(0.083)	(0.123)	(0.086)	(0.100)
Extra pay	0.132***	0.041	0.024	0.071	0.049	-0.025	0.102	0.199***	-0.035
	(0.045)	(0.048)	(0.044)	(0.051)	(0.053)	(0.040)	(0.065)	(0.046)	(0.056)
Pension (deferred payment schemes like ESOP)	-0.024	0.052	0.005	-0.055	-0.117**	0.211***	-0.039	0.023	-0.029
	(0.046)	(0.047)	(0.043)	(0.049)	(0.050)	(0.039)	(0.059)	(0.047)	(0.056)
Measures of fairness									

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
Appeal right	0.102	-0.087	0.067	-0.110	0.163	0.010	-0.378	0.102	0.158
	(0.168)	(0.183)	(0.223)	(0.197)	(0.242)	(0.125)	(0.284)	(0.171)	(0.289)
EO policies	-0.181*	0.033	-0.124	0.151	0.055	-0.100	-0.023	-0.023	-0.034
	(0.096)	(0.108)	(0.091)	(0.101)	(0.103)	(0.095)	(0.145)	(0.101)	(0.118)
Informative Management									
Operations	-0.025	-0.041	-0.097***	0.035	-0.073**	-0.053*	0.065	-0.039	0.036
	(0.034)	(0.035)	(0.033)	(0.035)	(0.036)	(0.029)	(0.045)	(0.033)	(0.038)
Staffing	-0.009	-0.036	0.000	-0.033	-0.021	-0.032	0.077*	-0.036	0.038
	(0.032)	(0.033)	(0.030)	(0.034)	(0.034)	(0.028)	(0.044)	(0.032)	(0.037)
Sequence	0.182***	0.191***	0.221***	0.365***	0.316***	0.013	0.038	0.244***	0.227***
	(0.033)	(0.034)	(0.032)	(0.035)	(0.033)	(0.027)	(0.045)	(0.033)	(0.038)
Finance	-0.050*	0.053*	0.062**	0.066**	0.045	0.145***	-0.017	-0.044*	0.148***
	(0.027)	(0.028)	(0.025)	(0.029)	(0.029)	(0.022)	(0.038)	(0.026)	(0.031)
Consultative Management									
Views of employees	0.070**	0.004	0.028	0.089**	0.121***	0.041	-0.044	-0.002	0.167***
	(0.033)	(0.033)	(0.031)	(0.036)	(0.036)	(0.028)	(0.042)	(0.032)	(0.036)
Response to suggestions	0.050	0.107***	0.041	0.062	0.133***	0.050	-0.070	0.090**	0.379***
	(0.038)	(0.038)	(0.035)	(0.040)	(0.043)	(0.031)	(0.049)	(0.036)	(0.045)
Influence of employees	0.045	0.179***	0.258***	0.089**	0.096**	0.167***	0.201***	0.025	0.785***
	(0.035)	(0.036)	(0.032)	(0.037)	(0.039)	(0.028)	(0.049)	(0.035)	(0.044)
Supportive Management									
Keep promises	0.036	-0.006	0.056	0.169***	0.057	0.117***	0.079	-0.016	0.053
	(0.037)	(0.037)	(0.035)	(0.038)	(0.040)	(0.031)	(0.051)	(0.036)	(0.042)
Sincere	0.043	0.111***	0.052	-0.190***	-0.109**	-0.129***	-0.022	0.036	0.130***
	(0.040)	(0.041)	(0.039)	(0.043)	(0.046)	(0.035)	(0.057)	(0.040)	(0.046)
Honest	-0.136***	-0.073*	-0.031	-0.052	-0.078*	-0.044	-0.129**	-0.055	-0.012
	(0.039)	(0.040)	(0.039)	(0.043)	(0.045)	(0.034)	(0.058)	(0.039)	(0.048)
Understanding	-0.009	0.034	0.030	-0.045	-0.030	0.035	0.042	0.051*	0.005
	(0.027)	(0.029)	(0.027)	(0.029)	(0.029)	(0.024)	(0.037)	(0.028)	(0.033)
Encouraging	0.231***	0.254***	0.140***	0.814***	1.062***	0.119***	0.088**	0.167***	0.182***
	(0.030)	(0.031)	(0.030)	(0.033)	(0.034)	(0.026)	(0.041)	(0.029)	(0.035)
Treat fairly	0.081**	-0.000	0.040	-0.016	-0.012	0.169***	0.119**	0.082***	0.136***
	(0.033)	(0.035)	(0.032)	(0.035)	(0.037)	(0.028)	(0.048)	(0.031)	(0.039)
Supervisor	-0.026	0.186***	0.202***	0.009	0.094*	0.156***	0.074	0.007	0.193***

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
	(0.048)	(0.052)	(0.045)	(0.051)	(0.052)	(0.041)	(0.065)	(0.047)	(0.054)
Intrinsic Motivation									
Using initiative	0.141***	0.257***	0.150***	-0.071***	-0.041	-0.097***	-0.075**	0.125***	-0.033
	(0.024)	(0.025)	(0.024)	(0.027)	(0.028)	(0.021)	(0.034)	(0.024)	(0.031)
Value sharing	0.154***	0.080**	0.152***	0.020	-0.021	0.030	-0.003	0.124***	0.057
	(0.032)	(0.033)	(0.032)	(0.034)	(0.036)	(0.027)	(0.045)	(0.033)	(0.038)
Loyal	0.214***	0.138***	0.108***	0.012	0.038	0.072**	0.098**	0.238***	0.105**
	(0.033)	(0.035)	(0.035)	(0.035)	(0.036)	(0.030)	(0.045)	(0.033)	(0.041)
Proud	0.500***	0.264***	0.201***	0.153***	0.191***	0.227***	0.079*	0.471***	0.115***
	(0.031)	(0.031)	(0.031)	(0.032)	(0.033)	(0.027)	(0.042)	(0.030)	(0.036)
Voice mechanisms									
Grievance procedure	0.035	-0.208	-0.124	-0.274	-0.591**	-0.231	-0.361	0.063	-0.224
	(0.151)	(0.189)	(0.170)	(0.309)	(0.264)	(0.223)	(0.370)	(0.198)	(0.220)
Union Member (ref: not a member)									
A member	0.082	-0.007	-0.046	-0.036	-0.114*	0.089*	-0.111	0.103*	-0.169***
	(0.053)	(0.055)	(0.049)	(0.058)	(0.060)	(0.048)	(0.068)	(0.053)	(0.063)
Have been in the past	0.107*	0.044	-0.034	-0.091	-0.048	-0.093*	-0.020	0.124**	0.015
	(0.059)	(0.063)	(0.059)	(0.064)	(0.067)	(0.050)	(0.081)	(0.058)	(0.075)
Gender (ref: female)	-0.033	0.171***	0.237***	0.103**	0.156***	0.003	-0.067	-0.064	0.030
	(0.047)	(0.048)	(0.046)	(0.051)	(0.052)	(0.041)	(0.063)	(0.046)	(0.055)
White ethnic background (ref: others)	0.176**	-0.083	0.068	0.011	0.125	0.201***	0.088	0.392***	0.251**
	(0.080)	(0.077)	(0.073)	(0.080)	(0.088)	(0.068)	(0.108)	(0.073)	(0.099)
Tenure (ref: <1year)									
1-2 years	-0.042	0.002	0.017	-0.103	-0.331***	-0.226***	0.072	-0.076	-0.278**
	(0.086)	(0.093)	(0.083)	(0.094)	(0.099)	(0.074)	(0.132)	(0.085)	(0.114)
2-5 years	0.007	-0.015	0.055	-0.015	-0.334***	-0.246***	-0.158	0.022	-0.324***
	(0.073)	(0.075)	(0.069)	(0.077)	(0.083)	(0.063)	(0.106)	(0.073)	(0.098)
5-10 years	-0.101	0.019	0.055	0.039	-0.300***	-0.162**	-0.152	0.057	-0.281***
	(0.074)	(0.078)	(0.069)	(0.081)	(0.086)	(0.066)	(0.108)	(0.077)	(0.097)
>10 years	-0.018	0.069	0.134*	0.142*	-0.135	-0.112*	-0.089	0.068	-0.116
	(0.078)	(0.080)	(0.073)	(0.083)	(0.091)	(0.067)	(0.109)	(0.080)	(0.102)
contract (ref: permanent)									
Temporary	-0.027	-0.162	0.036	-0.270**	0.063	0.233**	-0.701***	0.251**	0.091
	(0.108)	(0.118)	(0.112)	(0.127)	(0.130)	(0.100)	(0.166)	(0.118)	(0.156)

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
Fixed	0.162	0.025	0.141	0.106	0.027	0.215**	-0.761***	0.192*	-0.198
	(0.116)	(0.116)	(0.108)	(0.118)	(0.123)	(0.095)	(0.129)	(0.107)	(0.128)
Marital Status (Ref: Single)									
Married	0.089*	0.038	0.077	-0.019	0.023	0.029	0.059	0.177***	0.099
	(0.051)	(0.054)	(0.050)	(0.057)	(0.056)	(0.046)	(0.077)	(0.051)	(0.065)
Divorced	0.040	0.106	0.061	-0.066	-0.049	-0.138*	-0.003	0.240***	0.092
	(0.090)	(0.094)	(0.084)	(0.089)	(0.091)	(0.072)	(0.118)	(0.088)	(0.106)
Widowed	-0.067	0.086	0.073	0.156	0.305	0.235	0.176	0.197	0.066
	(0.185)	(0.181)	(0.159)	(0.196)	(0.204)	(0.147)	(0.271)	(0.176)	(0.214)
Age (ref: 16-29)									
30-49	0.326***	0.105*	0.013	-0.078	0.106	0.030	-0.058	0.137**	0.009
	(0.059)	(0.061)	(0.058)	(0.068)	(0.067)	(0.054)	(0.085)	(0.059)	(0.073)
50 and above	0.515***	0.119	0.007	0.089	0.287***	-0.012	-0.107	0.211***	-0.091
	(0.074)	(0.075)	(0.069)	(0.078)	(0.080)	(0.063)	(0.102)	(0.075)	(0.086)
Qualifications (Ref: GCSE grades D-G)									
GCSE A-C	0.036	0.004	-0.010	0.003	0.057	0.069*	-0.013	0.008	0.098*
	(0.047)	(0.050)	(0.044)	(0.048)	(0.049)	(0.038)	(0.063)	(0.046)	(0.055)
ONE GCE	-0.011	0.025	-0.057	-0.007	-0.045	-0.097*	-0.151*	-0.054	-0.157**
	(0.066)	(0.071)	(0.063)	(0.071)	(0.068)	(0.057)	(0.085)	(0.067)	(0.076)
TWO or more GCE	0.063	-0.008	0.050	-0.098*	-0.094*	0.071	0.002	0.004	-0.173***
	(0.054)	(0.057)	(0.052)	(0.053)	(0.057)	(0.044)	(0.071)	(0.053)	(0.061)
First degree	0.036	-0.105*	-0.050	-0.235***	-0.254***	0.051	0.004	0.024	-0.060
	(0.054)	(0.058)	(0.050)	(0.056)	(0.059)	(0.046)	(0.070)	(0.056)	(0.062)
Higher degree	0.107	-0.014	0.058	0.134*	0.130	0.190***	-0.003	0.087	-0.104
	(0.079)	(0.082)	(0.070)	(0.074)	(0.081)	(0.066)	(0.100)	(0.079)	(0.084)
Other academic qualification	0.125**	-0.052	-0.065	0.002	0.011	-0.042	-0.077	0.001	-0.155**
	(0.052)	(0.053)	(0.049)	(0.054)	(0.057)	(0.044)	(0.070)	(0.053)	(0.061)
No academic qualification	0.086	0.226**	0.161	0.480***	0.124	-0.001	0.227	0.033	0.172
	(0.111)	(0.114)	(0.112)	(0.131)	(0.126)	(0.091)	(0.182)	(0.108)	(0.142)
Level 1 NVQ	0.004	0.133*	0.102	0.065	-0.039	0.081	-0.035	-0.019	-0.019
	(0.069)	(0.075)	(0.066)	(0.075)	(0.076)	(0.058)	(0.093)	(0.073)	(0.085)
Level 2 NVQ	0.016	0.047	-0.037	0.064	-0.081	-0.084*	-0.135**	-0.010	-0.018
	(0.052)	(0.056)	(0.051)	(0.057)	(0.057)	(0.044)	(0.068)	(0.052)	(0.063)
Level 3 NVQ	-0.049	0.023	0.077	-0.091	-0.178***	-0.027	-0.052	-0.046	-0.049

	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
					Satisfaction with:				
	(0.055)	(0.056)	(0.053)	(0.058)	(0.058)	(0.045)	(0.071)	(0.056)	(0.066)
Level 4 NVQ	0.056	-0.060	-0.061	0.091	-0.019	0.015	-0.074	-0.110	-0.089
	(0.093)	(0.091)	(0.080)	(0.093)	(0.095)	(0.073)	(0.112)	(0.088)	(0.104)
Level 5 NVQ	-0.320	-0.071	0.051	-0.491**	-0.520**	-0.242	-0.183	-0.294	-0.002
	(0.249)	(0.261)	(0.237)	(0.243)	(0.237)	(0.185)	(0.295)	(0.242)	(0.299)
Completion of apprenticeship	0.033	0.001	-0.012	-0.192**	0.071	0.040	0.122	0.217**	0.159
	(0.086)	(0.082)	(0.082)	(0.081)	(0.089)	(0.071)	(0.103)	(0.085)	(0.107)
Other vocational qualification	0.011	-0.084	-0.043	-0.030	-0.059	-0.044	-0.076	-0.071	-0.057
	(0.069)	(0.075)	(0.062)	(0.071)	(0.075)	(0.057)	(0.086)	(0.067)	(0.082)
Other professional qualification	0.091	0.069	0.077	0.132**	0.143**	0.280***	0.115	0.157***	-0.063
	(0.059)	(0.061)	(0.053)	(0.061)	(0.061)	(0.051)	(0.076)	(0.057)	(0.067)
No vocational qualification	0.197**	0.314***	0.298***	0.283**	0.388***	0.153**	0.010	0.132	0.106
	(0.093)	(0.101)	(0.097)	(0.113)	(0.116)	(0.076)	(0.139)	(0.092)	(0.116)
No religion (ref: having a religion)	-0.089**	-0.005	-0.004	-0.066	-0.023	0.030	0.023	-0.022	-0.010
	(0.044)	(0.047)	(0.042)	(0.047)	(0.048)	(0.037)	(0.059)	(0.044)	(0.054)
Heterosexual (ref: other orientations)	-0.039	0.002	-0.077	0.185**	0.045	-0.033	-0.034	-0.072	-0.022
	(0.075)	(0.080)	(0.074)	(0.078)	(0.086)	(0.066)	(0.106)	(0.076)	(0.095)
Organizational size (ref: 5-999)									
1000-9,999	0.018	-0.029	-0.069	0.033	0.119*	0.016	-0.019	-0.029	-0.054
	(0.055)	(0.058)	(0.050)	(0.062)	(0.063)	(0.058)	(0.074)	(0.054)	(0.067)
10,000 and above	0.009	-0.110*	-0.053	0.043	0.061	-0.072	0.015	-0.051	-0.025
	(0.060)	(0.060)	(0.056)	(0.064)	(0.068)	(0.059)	(0.077)	(0.062)	(0.072)
Industries (ref: manufacturing)									
Electricity	0.281*	0.090	-0.033	0.337**	0.306*	0.593***	0.643***	0.291**	0.213
	(0.164)	(0.152)	(0.153)	(0.152)	(0.167)	(0.175)	(0.212)	(0.144)	(0.193)
Water supply	-0.079	0.304	-0.168	0.469**	0.447**	0.048	0.512**	0.024	0.039
	(0.193)	(0.199)	(0.200)	(0.223)	(0.216)	(0.182)	(0.239)	(0.158)	(0.218)
Construction	0.591***	0.421***	0.093	0.503***	0.222	0.053	0.044	0.291**	0.103
	(0.124)	(0.135)	(0.121)	(0.162)	(0.140)	(0.127)	(0.174)	(0.121)	(0.177)
Wholesale/Retail	0.062	-0.072	-0.252**	0.061	0.164	-0.167	0.075	0.127	-0.142
	(0.094)	(0.103)	(0.101)	(0.113)	(0.120)	(0.102)	(0.179)	(0.101)	(0.126)
Transportation	0.174*	0.037	-0.164	0.370***	0.366***	0.578***	-0.200	0.229**	-0.069
	(0.101)	(0.113)	(0.113)	(0.127)	(0.133)	(0.127)	(0.157)	(0.117)	(0.140)
Accommodation services	-0.126	-0.259**	-0.189	0.385**	0.042	-0.173	0.169	0.060	-0.060

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
	(0.132)	(0.124)	(0.129)	(0.186)	(0.172)	(0.129)	(0.211)	(0.130)	(0.197)
Information and communication	0.495***	0.163	0.007	-0.207	-0.051	-0.409**	-0.302	0.336*	-0.451**
	(0.180)	(0.189)	(0.194)	(0.166)	(0.164)	(0.168)	(0.198)	(0.177)	(0.192)
Financial services	0.306*	-0.067	0.012	0.264	0.105	-0.274	0.406	0.041	-0.428**
	(0.177)	(0.239)	(0.201)	(0.191)	(0.261)	(0.195)	(0.252)	(0.186)	(0.201)
Real estate	0.325**	0.023	-0.042	0.509***	0.304**	-0.035	0.025	0.199	0.030
	(0.133)	(0.156)	(0.121)	(0.167)	(0.140)	(0.151)	(0.185)	(0.153)	(0.227)
Professional services	0.443***	0.328**	-0.071	0.330**	0.255*	-0.297**	-0.088	0.252**	-0.045
	(0.125)	(0.146)	(0.124)	(0.139)	(0.144)	(0.133)	(0.154)	(0.126)	(0.151)
Administrative and support	0.580***	0.169	-0.003	0.451***	-0.083	-0.126	0.078	0.331**	-0.087
	(0.149)	(0.134)	(0.140)	(0.165)	(0.143)	(0.143)	(0.234)	(0.146)	(0.203)
Public admin	0.465***	0.099	0.005	0.351***	0.304**	-0.326***	0.075	0.331***	-0.186
	(0.117)	(0.119)	(0.112)	(0.126)	(0.129)	(0.117)	(0.154)	(0.118)	(0.140)
Education	0.883***	0.519***	0.151	0.434***	0.446***	-0.222**	0.341**	0.552***	-0.119
	(0.110)	(0.110)	(0.101)	(0.117)	(0.117)	(0.110)	(0.145)	(0.115)	(0.131)
Human health	0.595***	0.384***	-0.055	0.719***	0.299***	-0.240**	0.182	0.413***	-0.198
	(0.101)	(0.105)	(0.092)	(0.117)	(0.113)	(0.099)	(0.141)	(0.098)	(0.123)
Arts, entertainment	0.479***	0.307**	0.010	0.452***	0.291**	-0.271**	0.060	0.600***	-0.295*
	(0.125)	(0.126)	(0.123)	(0.154)	(0.137)	(0.126)	(0.175)	(0.133)	(0.153)
Other services	0.593***	0.262	-0.145	0.193	0.086	0.209	-0.236	0.627***	-0.126
	(0.139)	(0.173)	(0.140)	(0.147)	(0.158)	(0.161)	(0.188)	(0.161)	(0.181)
Public sector	0.054	0.057	-0.024	-0.056	-0.054	0.076	-0.318***	0.094	0.033
	(0.068)	(0.065)	(0.058)	(0.073)	(0.073)	(0.068)	(0.085)	(0.067)	(0.078)
Occupational Categories (ref:Managerial)									
Intermediate	-0.049	-0.030	0.006	0.142**	0.081	-0.102*	0.028	-0.166***	0.023
	(0.060)	(0.063)	(0.054)	(0.060)	(0.062)	(0.060)	(0.071)	(0.060)	(0.068)
Lower	0.242***	0.043	0.094	0.366***	0.226***	-0.233***	-0.115	0.027	0.006
	(0.070)	(0.071)	(0.062)	(0.079)	(0.075)	(0.069)	(0.094)	(0.071)	(0.082)
Intercept	-7.932***	-7.935***	-7.751***	-4.091***	-4.699***	-1.510***	-5.312***	-6.905***	-6.269***
	(0.632)	(0.633)	(0.586)	(0.623)	(0.667)	(0.535)	(0.901)	(0.593)	(0.786)
Pseudo R-Squared	0.281	0.315	0.337	0.262	0.312	0.135	0.558	0.256	0.444
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20549	20549	20549	20549	20549	20549	20549	20549	20549

Clustered standard errors in parenthesis and the coefficients are statistically significant at * p<0.10, ** p<0.05, *** p<0.01.

Table A.0.6: Weighted Logit Estimation of Demand-Control Model (Odd-ratios)

	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
				Satisfaction with:					
Main Predictors									
Job Control									
Over tasks	0.243***	0.391***	0.582***	0.043	0.142***	0.072**	0.096*	0.163***	0.113**
	(0.037)	(0.038)	(0.039)	(0.041)	(0.041)	(0.033)	(0.055)	(0.036)	(0.046)
Over pace	-0.021	-0.038	0.009	0.031	0.032	0.078***	0.109**	-0.020	0.024
	(0.035)	(0.036)	(0.036)	(0.037)	(0.037)	(0.030)	(0.052)	(0.034)	(0.043)
On How to do task	0.080*	0.298***	0.197***	0.080*	0.175***	0.015	0.110*	0.120***	0.023
	(0.044)	(0.046)	(0.047)	(0.048)	(0.048)	(0.039)	(0.067)	(0.043)	(0.056)
Over Order of task	-0.023	0.184***	0.112***	0.067	0.036	-0.001	0.055	-0.075*	0.099**
	(0.042)	(0.042)	(0.042)	(0.045)	(0.045)	(0.036)	(0.061)	(0.040)	(0.050)
Over Working Time	0.003	0.022	0.113***	0.085***	0.101***	0.101***	0.029	-0.050**	-0.042
	(0.023)	(0.025)	(0.025)	(0.026)	(0.025)	(0.020)	(0.035)	(0.023)	(0.028)
Job Demand									
Work overload	-0.094**	-0.020	-0.120***	-0.225***	-0.186***	-0.081**	-0.089	-0.106**	-0.041
	(0.044)	(0.045)	(0.041)	(0.045)	(0.045)	(0.036)	(0.069)	(0.043)	(0.057)
Work Intensity	0.501***	0.268***	0.115**	-0.055	-0.059	-0.239***	-0.274***	0.369***	0.013
	(0.054)	(0.056)	(0.051)	(0.056)	(0.057)	(0.049)	(0.091)	(0.053)	(0.071)
Timing Demand	-0.074**	-0.063	-0.139***	-0.106***	-0.174***	-0.097***	-0.122**	-0.112***	-0.049
	(0.038)	(0.039)	(0.034)	(0.037)	(0.038)	(0.031)	(0.059)	(0.036)	(0.048)
Types of Jobs (ref: LD_HC)									
HD_HC	-0.061	0.101	-0.030	0.054	0.014	-0.105	0.009	-0.091	-0.098
	(0.082)	(0.091)	(0.075)	(0.082)	(0.090)	(0.066)	(0.107)	(0.080)	(0.099)
HD_LC	-0.243***	-0.099	-0.203**	0.168*	0.138	-0.165**	0.179	-0.209**	-0.234**
	(0.091)	(0.101)	(0.089)	(0.098)	(0.105)	(0.080)	(0.127)	(0.094)	(0.112)
LD_LC	-0.268***	-0.109	-0.174**	0.084	0.086	0.053	0.015	-0.113	-0.088
	(0.073)	(0.078)	(0.073)	(0.081)	(0.085)	(0.064)	(0.102)	(0.074)	(0.092)
Demand x EO Policies	-0.117*	-0.104	0.019	0.081	0.195***	0.091*	0.085	-0.120*	-0.038
	(0.066)	(0.067)	(0.060)	(0.064)	(0.067)	(0.055)	(0.109)	(0.063)	(0.085)
Control x EO Policies	0.109**	0.099**	0.176***	-0.010	-0.029	-0.047	-0.080	0.111**	0.041
	(0.046)	(0.048)	(0.054)	(0.051)	(0.048)	(0.042)	(0.077)	(0.043)	(0.060)
Control Variables									
Consultation Schemes (ref: none)									
Suggestion	0.013	0.013	0.070	0.149***	0.068	0.013	0.092	-0.007	0.013

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
	(0.047)	(0.047)	(0.043)	(0.051)	(0.053)	(0.048)	(0.061)	(0.047)	(0.055)
Notice Boards	0.006	-0.037	-0.008	0.139**	-0.032	-0.166***	-0.106	-0.012	-0.104
	(0.056)	(0.063)	(0.052)	(0.062)	(0.061)	(0.057)	(0.074)	(0.058)	(0.070)
Cascade	0.014	0.057	0.022	-0.002	-0.158***	0.011	-0.023	0.054	-0.037
	(0.052)	(0.055)	(0.047)	(0.059)	(0.057)	(0.051)	(0.071)	(0.053)	(0.066)
Newsletters	-0.026	0.016	0.016	-0.047	-0.015	-0.035	0.085	-0.038	0.018
	(0.049)	(0.052)	(0.045)	(0.055)	(0.055)	(0.051)	(0.064)	(0.050)	(0.060)
Email	0.001	-0.017	-0.077	-0.079	-0.008	0.081	-0.105	-0.034	0.036
	(0.057)	(0.060)	(0.053)	(0.068)	(0.066)	(0.059)	(0.088)	(0.059)	(0.073)
Intranet	-0.059	-0.023	-0.015	0.120**	0.056	0.037	-0.057	-0.049	-0.056
	(0.052)	(0.054)	(0.049)	(0.059)	(0.058)	(0.054)	(0.077)	(0.056)	(0.065)
Other	-0.010	-0.005	0.002	-0.005	-0.028	-0.019	-0.022	0.059	-0.037
	(0.045)	(0.048)	(0.043)	(0.051)	(0.052)	(0.045)	(0.061)	(0.047)	(0.055)
Joint Consultative Committees	0.026	-0.013	-0.064	-0.046	-0.031	0.011	-0.095	-0.011	-0.039
	(0.045)	(0.048)	(0.043)	(0.050)	(0.051)	(0.048)	(0.061)	(0.046)	(0.054)
Secure job	0.142***	0.130***	0.199***	0.198***	0.230***	0.136***	2.355***	0.191***	0.109***
	(0.020)	(0.021)	(0.020)	(0.022)	(0.023)	(0.018)	(0.048)	(0.020)	(0.024)
Individual Incentive pay									
Merit Pay	-0.015	0.013	-0.054	-0.100*	0.003	0.030	-0.070	-0.037	0.131**
	(0.046)	(0.050)	(0.045)	(0.054)	(0.054)	(0.051)	(0.065)	(0.048)	(0.058)
Types of Pay (ref: basic pay)									
Individual pay	0.153**	-0.067	-0.056	0.067	0.028	0.088	0.153	0.006	-0.149*
	(0.072)	(0.077)	(0.070)	(0.076)	(0.078)	(0.066)	(0.100)	(0.071)	(0.081)
Group pay	0.011	0.149	0.127	-0.186*	0.054	0.031	0.087	0.028	-0.098
	(0.091)	(0.103)	(0.094)	(0.104)	(0.116)	(0.086)	(0.135)	(0.090)	(0.122)
Workplace pay	0.182**	0.000	-0.056	-0.119	0.026	0.285***	-0.018	0.080	0.108
	(0.091)	(0.092)	(0.089)	(0.091)	(0.102)	(0.083)	(0.123)	(0.086)	(0.100)
Extra pay	0.132***	0.041	0.024	0.071	0.049	-0.025	0.102	0.199***	-0.035
	(0.045)	(0.048)	(0.044)	(0.051)	(0.053)	(0.040)	(0.065)	(0.046)	(0.056)
Pension (deferred payment schemes like ESOP)	-0.024	0.052	0.005	-0.055	-0.117**	0.211***	-0.039	0.023	-0.029
	(0.046)	(0.047)	(0.043)	(0.049)	(0.050)	(0.039)	(0.059)	(0.047)	(0.056)
Measures of fairness									
Appeal right	0.102	-0.087	0.067	-0.110	0.163	0.010	-0.378	0.102	0.158
	(0.168)	(0.183)	(0.223)	(0.197)	(0.242)	(0.125)	(0.284)	(0.171)	(0.289)

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
EO policies	-0.181*	0.033	-0.124	0.151	0.055	-0.100	-0.023	-0.023	-0.034
	(0.096)	(0.108)	(0.091)	(0.101)	(0.103)	(0.095)	(0.145)	(0.101)	(0.118)
Informative Management									
Operations	-0.025	-0.041	-0.097***	0.035	-0.073**	-0.053*	0.065	-0.039	0.036
	(0.034)	(0.035)	(0.033)	(0.035)	(0.036)	(0.029)	(0.045)	(0.033)	(0.038)
Staffing	-0.009	-0.036	0.000	-0.033	-0.021	-0.032	0.077*	-0.036	0.038
	(0.032)	(0.033)	(0.030)	(0.034)	(0.034)	(0.028)	(0.044)	(0.032)	(0.037)
Sequence	0.182***	0.191***	0.221***	0.365***	0.316***	0.013	0.038	0.244***	0.227***
	(0.033)	(0.034)	(0.032)	(0.035)	(0.033)	(0.027)	(0.045)	(0.033)	(0.038)
Finance	-0.050*	0.053*	0.062**	0.066**	0.045	0.145***	-0.017	-0.044*	0.148***
	(0.027)	(0.028)	(0.025)	(0.029)	(0.029)	(0.022)	(0.038)	(0.026)	(0.031)
Consultative Management									
Views of employees	0.070**	0.004	0.028	0.089**	0.121***	0.041	-0.044	-0.002	0.167***
	(0.033)	(0.033)	(0.031)	(0.036)	(0.036)	(0.028)	(0.042)	(0.032)	(0.036)
Response to suggestions	0.050	0.107***	0.041	0.062	0.133***	0.050	-0.070	0.090**	0.379***
	(0.038)	(0.038)	(0.035)	(0.040)	(0.043)	(0.031)	(0.049)	(0.036)	(0.045)
Influence of employees	0.045	0.179***	0.258***	0.089**	0.096**	0.167***	0.201***	0.025	0.785***
	(0.035)	(0.036)	(0.032)	(0.037)	(0.039)	(0.028)	(0.049)	(0.035)	(0.044)
Supportive Management									
Keep promises	0.036	-0.006	0.056	0.169***	0.057	0.117***	0.079	-0.016	0.053
	(0.037)	(0.037)	(0.035)	(0.038)	(0.040)	(0.031)	(0.051)	(0.036)	(0.042)
Sincere	0.043	0.111***	0.052	-0.190***	-0.109**	-0.129***	-0.022	0.036	0.130***
	(0.040)	(0.041)	(0.039)	(0.043)	(0.046)	(0.035)	(0.057)	(0.040)	(0.046)
Honest	-0.136***	-0.073*	-0.031	-0.052	-0.078*	-0.044	-0.129**	-0.055	-0.012
	(0.039)	(0.040)	(0.039)	(0.043)	(0.045)	(0.034)	(0.058)	(0.039)	(0.048)
Understanding	-0.009	0.034	0.030	-0.045	-0.030	0.035	0.042	0.051*	0.005
	(0.027)	(0.029)	(0.027)	(0.029)	(0.029)	(0.024)	(0.037)	(0.028)	(0.033)
Encouraging	0.231***	0.254***	0.140***	0.814***	1.062***	0.119***	0.088**	0.167***	0.182***
	(0.030)	(0.031)	(0.030)	(0.033)	(0.034)	(0.026)	(0.041)	(0.029)	(0.035)
Treat fairly	0.081**	-0.000	0.040	-0.016	-0.012	0.169***	0.119**	0.082***	0.136***
	(0.033)	(0.035)	(0.032)	(0.035)	(0.037)	(0.028)	(0.048)	(0.031)	(0.039)
Supervisor	-0.026	0.186***	0.202***	0.009	0.094*	0.156***	0.074	0.007	0.193***
	(0.048)	(0.052)	(0.045)	(0.051)	(0.052)	(0.041)	(0.065)	(0.047)	(0.054)
Intrinsic Motivation									

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
Using initiative	0.141***	0.257***	0.150***	-0.071***	-0.041	-0.097***	-0.075**	0.125***	-0.033
	(0.024)	(0.025)	(0.024)	(0.027)	(0.028)	(0.021)	(0.034)	(0.024)	(0.031)
Value sharing	0.154***	0.080**	0.152***	0.020	-0.021	0.030	-0.003	0.124***	0.057
	(0.032)	(0.033)	(0.032)	(0.034)	(0.036)	(0.027)	(0.045)	(0.033)	(0.038)
Loyal	0.214***	0.138***	0.108***	0.012	0.038	0.072**	0.098**	0.238***	0.105**
	(0.033)	(0.035)	(0.035)	(0.035)	(0.036)	(0.030)	(0.045)	(0.033)	(0.041)
Proud	0.500***	0.264***	0.201***	0.153***	0.191***	0.227***	0.079*	0.471***	0.115***
	(0.031)	(0.031)	(0.031)	(0.032)	(0.033)	(0.027)	(0.042)	(0.030)	(0.036)
Voice mechanisms									
Grievance procedure	0.035	-0.208	-0.124	-0.274	-0.591**	-0.231	-0.361	0.063	-0.224
	(0.151)	(0.189)	(0.170)	(0.309)	(0.264)	(0.223)	(0.370)	(0.198)	(0.220)
Union Member (ref: not a member)									
A member	0.082	-0.007	-0.046	-0.036	-0.114*	0.089*	-0.111	0.103*	-0.169***
	(0.053)	(0.055)	(0.049)	(0.058)	(0.060)	(0.048)	(0.068)	(0.053)	(0.063)
Have been in the past	0.107*	0.044	-0.034	-0.091	-0.048	-0.093*	-0.020	0.124**	0.015
	(0.059)	(0.063)	(0.059)	(0.064)	(0.067)	(0.050)	(0.081)	(0.058)	(0.075)
Gender (ref: female)	-0.033	0.171***	0.237***	0.103**	0.156***	0.003	-0.067	-0.064	0.030
	(0.047)	(0.048)	(0.046)	(0.051)	(0.052)	(0.041)	(0.063)	(0.046)	(0.055)
White ethnic background (ref: others)	0.176**	-0.083	0.068	0.011	0.125	0.201***	0.088	0.392***	0.251**
	(0.080)	(0.077)	(0.073)	(0.080)	(0.088)	(0.068)	(0.108)	(0.073)	(0.099)
Tenure (ref: <1year)									
1-2 years	-0.042	0.002	0.017	-0.103	-0.331***	-0.226***	0.072	-0.076	-0.278**
	(0.086)	(0.093)	(0.083)	(0.094)	(0.099)	(0.074)	(0.132)	(0.085)	(0.114)
2-5 years	0.007	-0.015	0.055	-0.015	-0.334***	-0.246***	-0.158	0.022	-0.324***
	(0.073)	(0.075)	(0.069)	(0.077)	(0.083)	(0.063)	(0.106)	(0.073)	(0.098)
5-10 years	-0.101	0.019	0.055	0.039	-0.300***	-0.162**	-0.152	0.057	-0.281***
	(0.074)	(0.078)	(0.069)	(0.081)	(0.086)	(0.066)	(0.108)	(0.077)	(0.097)
>10 years	-0.018	0.069	0.134*	0.142*	-0.135	-0.112*	-0.089	0.068	-0.116
	(0.078)	(0.080)	(0.073)	(0.083)	(0.091)	(0.067)	(0.109)	(0.080)	(0.102)
contract (ref: permanent)									
Temporary	-0.027	-0.162	0.036	-0.270**	0.063	0.233**	-0.701***	0.251**	0.091
	(0.108)	(0.118)	(0.112)	(0.127)	(0.130)	(0.100)	(0.166)	(0.118)	(0.156)
Fixed	0.162	0.025	0.141	0.106	0.027	0.215**	-0.761***	0.192*	-0.198
	(0.116)	(0.116)	(0.108)	(0.118)	(0.123)	(0.095)	(0.129)	(0.107)	(0.128)

	Satisfaction with:								
	Achievement	Initiative	Influence	Training	Skills	Pay	Job security	Work itself	Involvement in decisions
Marital Status (Ref: Single)									
Married	0.089*	0.038	0.077	-0.019	0.023	0.029	0.059	0.177***	0.099
	(0.051)	(0.054)	(0.050)	(0.057)	(0.056)	(0.046)	(0.077)	(0.051)	(0.065)
Divorced	0.040	0.106	0.061	-0.066	-0.049	-0.138*	-0.003	0.240***	0.092
	(0.090)	(0.094)	(0.084)	(0.089)	(0.091)	(0.072)	(0.118)	(0.088)	(0.106)
Widowed	-0.067	0.086	0.073	0.156	0.305	0.235	0.176	0.197	0.066
	(0.185)	(0.181)	(0.159)	(0.196)	(0.204)	(0.147)	(0.271)	(0.176)	(0.214)
Age (ref: 16-29)									
30-49	0.326***	0.105*	0.013	-0.078	0.106	0.030	-0.058	0.137**	0.009
	(0.059)	(0.061)	(0.058)	(0.068)	(0.067)	(0.054)	(0.085)	(0.059)	(0.073)
50 and above	0.515***	0.119	0.007	0.089	0.287***	-0.012	-0.107	0.211***	-0.091
	(0.074)	(0.075)	(0.069)	(0.078)	(0.080)	(0.063)	(0.102)	(0.075)	(0.086)
Qualifications (Ref: GCSE grades D-G)									
GCSE A-C	0.036	0.004	-0.010	0.003	0.057	0.069*	-0.013	0.008	0.098*
	(0.047)	(0.050)	(0.044)	(0.048)	(0.049)	(0.038)	(0.063)	(0.046)	(0.055)
ONE GCE	-0.011	0.025	-0.057	-0.007	-0.045	-0.097*	-0.151*	-0.054	-0.157**
	(0.066)	(0.071)	(0.063)	(0.071)	(0.068)	(0.057)	(0.085)	(0.067)	(0.076)
TWO or more GCE	0.063	-0.008	0.050	-0.098*	-0.094*	0.071	0.002	0.004	-0.173***
	(0.054)	(0.057)	(0.052)	(0.053)	(0.057)	(0.044)	(0.071)	(0.053)	(0.061)
First degree	0.036	-0.105*	-0.050	-0.235***	-0.254***	0.051	0.004	0.024	-0.060
	(0.054)	(0.058)	(0.050)	(0.056)	(0.059)	(0.046)	(0.070)	(0.056)	(0.062)
Higher degree	0.107	-0.014	0.058	0.134*	0.130	0.190***	-0.003	0.087	-0.104
	(0.079)	(0.082)	(0.070)	(0.074)	(0.081)	(0.066)	(0.100)	(0.079)	(0.084)
Other academic qualification	0.125**	-0.052	-0.065	0.002	0.011	-0.042	-0.077	0.001	-0.155**
	(0.052)	(0.053)	(0.049)	(0.054)	(0.057)	(0.044)	(0.070)	(0.053)	(0.061)
No academic qualification	0.086	0.226**	0.161	0.480***	0.124	-0.001	0.227	0.033	0.172
	(0.111)	(0.114)	(0.112)	(0.131)	(0.126)	(0.091)	(0.182)	(0.108)	(0.142)
Level 1 NVQ	0.004	0.133*	0.102	0.065	-0.039	0.081	-0.035	-0.019	-0.019
	(0.069)	(0.075)	(0.066)	(0.075)	(0.076)	(0.058)	(0.093)	(0.073)	(0.085)
Level 2 NVQ	0.016	0.047	-0.037	0.064	-0.081	-0.084*	-0.135**	-0.010	-0.018
	(0.052)	(0.056)	(0.051)	(0.057)	(0.057)	(0.044)	(0.068)	(0.052)	(0.063)
Level 3 NVQ	-0.049	0.023	0.077	-0.091	-0.178***	-0.027	-0.052	-0.046	-0.049
	(0.055)	(0.056)	(0.053)	(0.058)	(0.058)	(0.045)	(0.071)	(0.056)	(0.066)
Level 4 NVQ	0.056	-0.060	-0.061	0.091	-0.019	0.015	-0.074	-0.110	-0.089

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
	(0.093)	(0.091)	(0.080)	(0.093)	(0.095)	(0.073)	(0.112)	(0.088)	(0.104)
Level 5 NVQ	-0.320	-0.071	0.051	-0.491**	-0.520**	-0.242	-0.183	-0.294	-0.002
	(0.249)	(0.261)	(0.237)	(0.243)	(0.237)	(0.185)	(0.295)	(0.242)	(0.299)
Completion of apprenticeship	0.033	0.001	-0.012	-0.192**	0.071	0.040	0.122	0.217**	0.159
	(0.086)	(0.082)	(0.082)	(0.081)	(0.089)	(0.071)	(0.103)	(0.085)	(0.107)
Other vocational qualification	0.011	-0.084	-0.043	-0.030	-0.059	-0.044	-0.076	-0.071	-0.057
	(0.069)	(0.075)	(0.062)	(0.071)	(0.075)	(0.057)	(0.086)	(0.067)	(0.082)
Other professional qualification	0.091	0.069	0.077	0.132**	0.143**	0.280***	0.115	0.157***	-0.063
	(0.059)	(0.061)	(0.053)	(0.061)	(0.061)	(0.051)	(0.076)	(0.057)	(0.067)
No vocational qualification	0.197**	0.314***	0.298***	0.283**	0.388***	0.153**	0.010	0.132	0.106
	(0.093)	(0.101)	(0.097)	(0.113)	(0.116)	(0.076)	(0.139)	(0.092)	(0.116)
No religion (ref: having a religion)	-0.089**	-0.005	-0.004	-0.066	-0.023	0.030	0.023	-0.022	-0.010
	(0.044)	(0.047)	(0.042)	(0.047)	(0.048)	(0.037)	(0.059)	(0.044)	(0.054)
Heterosexual (ref: other orientations)	-0.039	0.002	-0.077	0.185**	0.045	-0.033	-0.034	-0.072	-0.022
	(0.075)	(0.080)	(0.074)	(0.078)	(0.086)	(0.066)	(0.106)	(0.076)	(0.095)
Organizational size (ref: 5-999)									
1000-9,999	0.018	-0.029	-0.069	0.033	0.119*	0.016	-0.019	-0.029	-0.054
	(0.055)	(0.058)	(0.050)	(0.062)	(0.063)	(0.058)	(0.074)	(0.054)	(0.067)
10,000 and above	0.009	-0.110*	-0.053	0.043	0.061	-0.072	0.015	-0.051	-0.025
	(0.060)	(0.060)	(0.056)	(0.064)	(0.068)	(0.059)	(0.077)	(0.062)	(0.072)
Industries (ref: manufacturing)									
Electricity	0.281*	0.090	-0.033	0.337**	0.306*	0.593***	0.643***	0.291**	0.213
	(0.164)	(0.152)	(0.153)	(0.152)	(0.167)	(0.175)	(0.212)	(0.144)	(0.193)
Water supply	-0.079	0.304	-0.168	0.469**	0.447**	0.048	0.512**	0.024	0.039
	(0.193)	(0.199)	(0.200)	(0.223)	(0.216)	(0.182)	(0.239)	(0.158)	(0.218)
Construction	0.591***	0.421***	0.093	0.503***	0.222	0.053	0.044	0.291**	0.103
	(0.124)	(0.135)	(0.121)	(0.162)	(0.140)	(0.127)	(0.174)	(0.121)	(0.177)
Wholesale/Retail	0.062	-0.072	-0.252**	0.061	0.164	-0.167	0.075	0.127	-0.142
	(0.094)	(0.103)	(0.101)	(0.113)	(0.120)	(0.102)	(0.179)	(0.101)	(0.126)
Transportation	0.174*	0.037	-0.164	0.370***	0.366***	0.578***	-0.200	0.229**	-0.069
	(0.101)	(0.113)	(0.113)	(0.127)	(0.133)	(0.127)	(0.157)	(0.117)	(0.140)
Accommodation services	-0.126	-0.259**	-0.189	0.385**	0.042	-0.173	0.169	0.060	-0.060
	(0.132)	(0.124)	(0.129)	(0.186)	(0.172)	(0.129)	(0.211)	(0.130)	(0.197)
Information and communication	0.495***	0.163	0.007	-0.207	-0.051	-0.409**	-0.302	0.336*	-0.451**

	Satisfaction with:								
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
	(0.180)	(0.189)	(0.194)	(0.166)	(0.164)	(0.168)	(0.198)	(0.177)	(0.192)
Financial services	0.306*	-0.067	0.012	0.264	0.105	-0.274	0.406	0.041	-0.428**
	(0.177)	(0.239)	(0.201)	(0.191)	(0.261)	(0.195)	(0.252)	(0.186)	(0.201)
Real estate	0.325**	0.023	-0.042	0.509***	0.304**	-0.035	0.025	0.199	0.030
	(0.133)	(0.156)	(0.121)	(0.167)	(0.140)	(0.151)	(0.185)	(0.153)	(0.227)
Professional services	0.443***	0.328**	-0.071	0.330**	0.255*	-0.297**	-0.088	0.252**	-0.045
	(0.125)	(0.146)	(0.124)	(0.139)	(0.144)	(0.133)	(0.154)	(0.126)	(0.151)
Administrative and support	0.580***	0.169	-0.003	0.451***	-0.083	-0.126	0.078	0.331**	-0.087
	(0.149)	(0.134)	(0.140)	(0.165)	(0.143)	(0.143)	(0.234)	(0.146)	(0.203)
Public admin	0.465***	0.099	0.005	0.351***	0.304**	-0.326***	0.075	0.331***	-0.186
	(0.117)	(0.119)	(0.112)	(0.126)	(0.129)	(0.117)	(0.154)	(0.118)	(0.140)
Education	0.883***	0.519***	0.151	0.434***	0.446***	-0.222**	0.341**	0.552***	-0.119
	(0.110)	(0.110)	(0.101)	(0.117)	(0.117)	(0.110)	(0.145)	(0.115)	(0.131)
Human health	0.595***	0.384***	-0.055	0.719***	0.299***	-0.240**	0.182	0.413***	-0.198
	(0.101)	(0.105)	(0.092)	(0.117)	(0.113)	(0.099)	(0.141)	(0.098)	(0.123)
Arts, entertainment	0.479***	0.307**	0.010	0.452***	0.291**	-0.271**	0.060	0.600***	-0.295*
	(0.125)	(0.126)	(0.123)	(0.154)	(0.137)	(0.126)	(0.175)	(0.133)	(0.153)
Other services	0.593***	0.262	-0.145	0.193	0.086	0.209	-0.236	0.627***	-0.126
	(0.139)	(0.173)	(0.140)	(0.147)	(0.158)	(0.161)	(0.188)	(0.161)	(0.181)
Public sector	0.054	0.057	-0.024	-0.056	-0.054	0.076	-0.318***	0.094	0.033
	(0.068)	(0.065)	(0.058)	(0.073)	(0.073)	(0.068)	(0.085)	(0.067)	(0.078)
Occupational Categories (ref:Managerial)									
Intermediate	-0.049	-0.030	0.006	0.142**	0.081	-0.102*	0.028	-0.166***	0.023
	(0.060)	(0.063)	(0.054)	(0.060)	(0.062)	(0.060)	(0.071)	(0.060)	(0.068)
Lower	0.242***	0.043	0.094	0.366***	0.226***	-0.233***	-0.115	0.027	0.006
	(0.070)	(0.071)	(0.062)	(0.079)	(0.075)	(0.069)	(0.094)	(0.071)	(0.082)
Intercept	-7.932***	-7.935***	-7.751***	-4.091***	-4.699***	-1.510***	-5.312***	-6.905***	-6.269***
	(0.632)	(0.633)	(0.586)	(0.623)	(0.667)	(0.535)	(0.901)	(0.593)	(0.786)
Pseudo R-Squared	0.281	0.315	0.337	0.262	0.312	0.135	0.558	0.256	0.444
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20549	20549	20549	20549	20549	20549	20549	20549	20549

Table A.0.0.7: Union Membership and Job Satisfaction (Endogeneity Analysis)

	Union	Union	Union	Union	Union	Union	Union	Union	Union
Instrumental variable									
Dispute over pay and Working conditions	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***	0.684***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Constant	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***	-0.456***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Satisfaction With:									
	Achievement	**Initiative**	**Influence**	**Training**	**Skills**	**Pay**	**Job security**	**Work itself**	**Involvement in decisions**
Job Control									
Over tasks	0.186***	0.257***	0.397***	0.016	0.063***	0.030**	0.025	0.132***	0.085***
	(0.016)	(0.016)	(0.016)	(0.017)	(0.017)	(0.015)	(0.021)	(0.016)	(0.019)
Over pace	0.028*	0.013	0.063***	0.011	0.007	0.035***	0.044**	0.024	0.028
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.014)	(0.020)	(0.015)	(0.018)
On How to do task	0.097***	0.210***	0.189***	0.032	0.079***	-0.006	0.019	0.117***	0.030
	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.018)	(0.026)	(0.020)	(0.023)
Over Order of task	0.036**	0.144***	0.133***	0.032*	0.006	-0.016	0.006	-0.006	0.074***
	(0.018)	(0.018)	(0.018)	(0.019)	(0.019)	(0.016)	(0.024)	(0.018)	(0.021)
Over Working Time	0.025**	0.031***	0.100***	0.045***	0.051***	0.052***	-0.007	-0.010	-0.011
	(0.011)	(0.011)	(0.010)	(0.011)	(0.012)	(0.009)	(0.015)	(0.011)	(0.013)
Consultation Schemes (ref: none)									
Suggestion	0.006	0.009	0.040*	0.088***	0.041	0.010	0.039	-0.007	0.009
	(0.025)	(0.026)	(0.024)	(0.026)	(0.027)	(0.022)	(0.033)	(0.025)	(0.029)
Notice Boards	-0.004	-0.014	-0.004	0.080**	-0.017	-0.101***	-0.063	-0.009	-0.056
	(0.031)	(0.032)	(0.030)	(0.032)	(0.033)	(0.027)	(0.042)	(0.031)	(0.037)
Cascade	0.014	0.026	0.012	0.001	-0.093***	0.009	-0.014	0.034	-0.016
	(0.028)	(0.029)	(0.027)	(0.030)	(0.031)	(0.024)	(0.038)	(0.028)	(0.034)
Newsletters	-0.014	0.010	0.009	-0.028	-0.012	-0.026	0.057	-0.019	-0.000
	(0.027)	(0.027)	(0.026)	(0.028)	(0.029)	(0.023)	(0.036)	(0.027)	(0.032)
Email	0.001	-0.007	-0.043	-0.053	0.000	0.048*	-0.068	-0.015	0.021
	(0.032)	(0.032)	(0.030)	(0.034)	(0.034)	(0.027)	(0.043)	(0.032)	(0.038)
Intranet	-0.026	-0.000	-0.010	0.070**	0.029	0.018	-0.015	-0.025	-0.039
	(0.029)	(0.030)	(0.028)	(0.030)	(0.031)	(0.025)	(0.039)	(0.029)	(0.035)
Other	-0.004	-0.002	0.001	-0.004	-0.020	-0.009	-0.015	0.034	-0.020
	(0.025)	(0.025)	(0.024)	(0.026)	(0.026)	(0.021)	(0.033)	(0.025)	(0.029)
Joint Consultative Committees	0.012	-0.011	-0.042*	-0.031	-0.021	0.005	-0.057*	-0.009	-0.027

	(0.025)	(0.025)	(0.024)	(0.026)	(0.026)	(0.021)	(0.032)	(0.024)	(0.029)
Secure job	0.082***	0.073***	0.117***	0.115***	0.133***	0.082***	1.223***	0.110***	0.060***
	(0.011)	(0.012)	(0.011)	(0.011)	(0.012)	(0.010)	(0.019)	(0.011)	(0.013)
Individual Incentive pay									
Merit Pay	-0.003	0.010	-0.033	-0.057**	0.004	0.015	-0.035	-0.016	0.070**
	(0.026)	(0.027)	(0.026)	(0.027)	(0.028)	(0.023)	(0.035)	(0.026)	(0.031)
Types of Pay (ref: basic pay)									
Individual pay	0.090**	-0.033	-0.029	0.042	0.015	0.049	0.085	0.008	-0.089*
	(0.041)	(0.042)	(0.039)	(0.042)	(0.043)	(0.036)	(0.054)	(0.039)	(0.048)
Group pay	0.008	0.086	0.067	-0.108**	0.028	0.018	0.044	0.016	-0.057
	(0.055)	(0.058)	(0.053)	(0.055)	(0.059)	(0.049)	(0.077)	(0.054)	(0.066)
Workplace pay	0.109**	0.005	-0.032	-0.059	0.019	0.168***	0.008	0.050	0.063
	(0.049)	(0.051)	(0.047)	(0.049)	(0.052)	(0.045)	(0.070)	(0.048)	(0.060)
Extra pay	0.070***	0.015	0.010	0.041	0.031	-0.013	0.061*	0.106***	-0.019
	(0.026)	(0.026)	(0.025)	(0.027)	(0.028)	(0.022)	(0.035)	(0.026)	(0.030)
Pension (deferred payment schemes like ESOP)	-0.008	0.033	0.003	-0.033	-0.064**	0.124***	-0.033	0.016	-0.004
	(0.026)	(0.026)	(0.025)	(0.026)	(0.027)	(0.022)	(0.034)	(0.026)	(0.030)
Measures of fairness									
Appeal right	0.071	-0.035	0.055	-0.065	0.103	0.004	-0.187	0.073	0.099
	(0.091)	(0.096)	(0.095)	(0.098)	(0.098)	(0.081)	(0.136)	(0.091)	(0.106)
EO policies	-0.090	0.008	-0.077	0.082	0.029	-0.071	-0.004	0.001	-0.026
	(0.055)	(0.056)	(0.053)	(0.056)	(0.059)	(0.048)	(0.079)	(0.055)	(0.068)
Informative Management									
Operations	-0.015	-0.022	-0.050***	0.022	-0.037*	-0.030*	0.035	-0.021	0.020
	(0.018)	(0.019)	(0.018)	(0.019)	(0.019)	(0.016)	(0.024)	(0.018)	(0.020)
Staffing	-0.005	-0.022	-0.003	-0.020	-0.013	-0.021	0.040*	-0.016	0.021
	(0.018)	(0.018)	(0.017)	(0.018)	(0.019)	(0.016)	(0.024)	(0.018)	(0.020)
Sequence	0.106***	0.105***	0.125***	0.208***	0.176***	0.009	0.021	0.138***	0.124***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.016)	(0.023)	(0.018)	(0.020)
Finance	-0.030**	0.027*	0.035**	0.039***	0.023	0.087***	-0.010	-0.026*	0.082***
	(0.015)	(0.015)	(0.014)	(0.015)	(0.015)	(0.013)	(0.019)	(0.015)	(0.016)
Consultative Management									
Views of employees	0.044**	0.008	0.017	0.047***	0.067***	0.027*	-0.032	-0.002	0.097***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)	(0.016)	(0.024)	(0.018)	(0.020)
Response to suggestions	0.026	0.060***	0.021	0.041*	0.074***	0.028	-0.039	0.055***	0.208***
	(0.021)	(0.021)	(0.020)	(0.021)	(0.022)	(0.018)	(0.028)	(0.021)	(0.023)
Influence of employees	0.029	0.099***	0.150***	0.047**	0.057***	0.099***	0.120***	0.015	0.432***

	(0.019)	(0.020)	(0.019)	(0.020)	(0.020)	(0.017)	(0.025)	(0.019)	(0.022)
Supportive Management									
Keep promises	0.019	-0.013	0.031	0.090***	0.025	0.072***	0.040	-0.008	0.028
	(0.020)	(0.021)	(0.020)	(0.021)	(0.021)	(0.018)	(0.026)	(0.020)	(0.022)
Sincere	0.022	0.066***	0.028	-0.103***	-0.052**	-0.078***	-0.005	0.016	0.064***
	(0.022)	(0.023)	(0.022)	(0.023)	(0.023)	(0.020)	(0.029)	(0.022)	(0.024)
Honest	-0.074***	-0.038	-0.020	-0.026	-0.046**	-0.027	-0.075**	-0.029	-0.009
	(0.022)	(0.023)	(0.022)	(0.023)	(0.024)	(0.020)	(0.029)	(0.022)	(0.025)
Understanding	-0.006	0.017	0.016	-0.025	-0.017	0.022*	0.028	0.030**	0.002
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.013)	(0.020)	(0.015)	(0.017)
Encouraging	0.132***	0.142***	0.080***	0.456***	0.590***	0.070***	0.052**	0.094***	0.100***
	(0.016)	(0.017)	(0.016)	(0.017)	(0.018)	(0.015)	(0.022)	(0.016)	(0.018)
Treat fairly	0.044**	-0.002	0.025	-0.011	-0.009	0.100***	0.066***	0.048***	0.081***
	(0.018)	(0.019)	(0.018)	(0.019)	(0.019)	(0.016)	(0.024)	(0.018)	(0.020)
Job Demand									
Work overload	-0.093***	-0.038***	-0.066***	-0.091***	-0.037***	-0.036***	-0.010	-0.107***	-0.048***
	(0.013)	(0.013)	(0.012)	(0.013)	(0.014)	(0.011)	(0.017)	(0.013)	(0.015)
Work Intensity	0.235***	0.114***	0.067***	0.002	0.043**	-0.128***	-0.106***	0.146***	-0.023
	(0.016)	(0.017)	(0.016)	(0.017)	(0.018)	(0.014)	(0.022)	(0.016)	(0.019)
Timing Demand	-0.073***	-0.059***	-0.081***	-0.031***	-0.045***	-0.048***	-0.042***	-0.104***	-0.050***
	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)	(0.010)	(0.015)	(0.011)	(0.013)
Supervisor	-0.015	0.106***	0.124***	0.001	0.051*	0.094***	0.043	0.008	0.108***
	(0.027)	(0.028)	(0.025)	(0.027)	(0.028)	(0.023)	(0.035)	(0.026)	(0.031)
Intrinsic Motivation									
Using initiative	0.078***	0.143***	0.085***	-0.041***	-0.023	-0.059***	-0.041**	0.070***	-0.023
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.012)	(0.018)	(0.014)	(0.016)
Value sharing	0.084***	0.042**	0.084***	0.006	-0.015	0.017	-0.009	0.064***	0.031
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)	(0.016)	(0.023)	(0.018)	(0.020)
Loyal	0.123***	0.077***	0.063***	0.008	0.023	0.042**	0.048**	0.137***	0.064***
	(0.018)	(0.019)	(0.019)	(0.019)	(0.019)	(0.017)	(0.024)	(0.018)	(0.021)
Proud	0.280***	0.151***	0.121***	0.085***	0.105***	0.135***	0.060***	0.267***	0.062***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.015)	(0.022)	(0.017)	(0.019)
Voice mechanisms									
Grievance procedure	0.028	-0.119	-0.083	-0.155	-0.321**	-0.127	-0.201	0.044	-0.124
	(0.103)	(0.110)	(0.105)	(0.115)	(0.125)	(0.092)	(0.153)	(0.104)	(0.140)
Union Member (ref: not a member)									
A member	-0.110	-0.323***	-0.010	-0.089	-0.096	0.243**	-0.152	-0.050	-0.050
	(0.116)	(0.121)	(0.117)	(0.118)	(0.121)	(0.100)	(0.144)	(0.117)	(0.143)

Have been in the past	0.059*	0.020	-0.018	-0.052	-0.025	-0.057**	-0.005	0.074**	0.010
	(0.034)	(0.035)	(0.032)	(0.035)	(0.036)	(0.029)	(0.044)	(0.033)	(0.040)
Gender (ref: female)	-0.023	0.097***	0.138***	0.056**	0.083***	-0.000	-0.029	-0.038	0.007
	(0.026)	(0.027)	(0.025)	(0.027)	(0.028)	(0.023)	(0.034)	(0.026)	(0.031)
White ethnic background (ref: others)	0.113***	-0.035	0.041	0.009	0.079*	0.122***	0.047	0.235***	0.134***
	(0.042)	(0.044)	(0.041)	(0.045)	(0.045)	(0.036)	(0.056)	(0.041)	(0.049)
Tenure (ref: <1year)									
1-2 years	-0.018	-0.006	0.004	-0.059	-0.191***	-0.129***	0.038	-0.053	-0.139**
	(0.049)	(0.050)	(0.047)	(0.052)	(0.055)	(0.043)	(0.068)	(0.048)	(0.062)
2-5 years	0.007	-0.017	0.029	-0.010	-0.192***	-0.144***	-0.080	0.012	-0.164***
	(0.042)	(0.042)	(0.039)	(0.044)	(0.047)	(0.036)	(0.057)	(0.041)	(0.053)
5-10 years	-0.058	0.004	0.026	0.018	-0.173***	-0.093**	-0.066	0.029	-0.135**
	(0.043)	(0.044)	(0.041)	(0.046)	(0.048)	(0.037)	(0.059)	(0.042)	(0.054)
>10 years	-0.005	0.034	0.079*	0.079*	-0.072	-0.063	-0.035	0.036	-0.047
	(0.044)	(0.045)	(0.042)	(0.047)	(0.050)	(0.038)	(0.060)	(0.044)	(0.055)
contract (ref: permanent)									
Temporary	-0.002	-0.094	0.023	-0.151**	0.033	0.139**	-0.375***	0.146**	0.051
	(0.065)	(0.063)	(0.061)	(0.068)	(0.073)	(0.057)	(0.074)	(0.066)	(0.083)
Fixed	0.100	0.019	0.081	0.056	0.015	0.123**	-0.444***	0.118*	-0.099
	(0.063)	(0.063)	(0.058)	(0.065)	(0.067)	(0.054)	(0.072)	(0.063)	(0.075)
Marital Status (Ref: Single)									
Married	0.053*	0.020	0.045	-0.006	0.019	0.014	0.037	0.099***	0.055
	(0.030)	(0.031)	(0.029)	(0.032)	(0.032)	(0.026)	(0.040)	(0.030)	(0.036)
Divorced	0.026	0.052	0.038	-0.032	-0.016	-0.088**	0.015	0.136***	0.040
	(0.049)	(0.051)	(0.048)	(0.052)	(0.053)	(0.042)	(0.064)	(0.049)	(0.058)
Widowed	-0.016	0.058	0.062	0.117	0.198*	0.130	0.078	0.129	0.035
	(0.099)	(0.105)	(0.097)	(0.116)	(0.120)	(0.086)	(0.134)	(0.102)	(0.121)
Age (ref: 16-29)									
30-49	0.182***	0.056	0.005	-0.047	0.050	0.018	-0.050	0.078**	0.010
	(0.034)	(0.035)	(0.034)	(0.036)	(0.037)	(0.030)	(0.048)	(0.034)	(0.042)
50 and above	0.282***	0.065	-0.001	0.050	0.155***	-0.004	-0.076	0.113***	-0.042
	(0.041)	(0.042)	(0.040)	(0.043)	(0.044)	(0.036)	(0.056)	(0.041)	(0.049)
Qualifications (Ref: GCSE grades D-G)									
GCSE A-C	0.019	0.002	-0.006	0.000	0.034	0.040*	-0.000	-0.003	0.063**
	(0.026)	(0.027)	(0.026)	(0.028)	(0.028)	(0.023)	(0.035)	(0.026)	(0.031)
ONE GCE	0.001	0.019	-0.029	0.000	-0.025	-0.058*	-0.085*	-0.028	-0.089**
	(0.038)	(0.039)	(0.036)	(0.038)	(0.040)	(0.033)	(0.049)	(0.037)	(0.044)
TWO or more GCE	0.035	-0.005	0.031	-0.059*	-0.053*	0.040	0.006	0.001	-0.090**

	(0.030)	(0.031)	(0.029)	(0.031)	(0.032)	(0.026)	(0.040)	(0.030)	(0.035)
First degree	0.019	-0.058*	-0.029	-0.129***	-0.132***	0.030	-0.002	0.014	-0.028
	(0.030)	(0.031)	(0.029)	(0.031)	(0.032)	(0.026)	(0.040)	(0.030)	(0.035)
Higher degree	0.063	-0.009	0.035	0.081*	0.066	0.106***	-0.025	0.044	-0.063
	(0.042)	(0.043)	(0.039)	(0.042)	(0.044)	(0.036)	(0.053)	(0.041)	(0.048)
Other academic qualification	0.072**	-0.025	-0.039	0.002	0.001	-0.027	-0.043	0.001	-0.086**
	(0.030)	(0.030)	(0.028)	(0.030)	(0.031)	(0.025)	(0.038)	(0.029)	(0.034)
No academic qualification	0.058	0.133**	0.091	0.280***	0.068	-0.010	0.133	0.020	0.098
	(0.061)	(0.064)	(0.060)	(0.074)	(0.071)	(0.052)	(0.086)	(0.062)	(0.074)
Level 1 NVQ	-0.002	0.065	0.061	0.038	-0.021	0.048	-0.006	-0.013	0.002
	(0.039)	(0.041)	(0.039)	(0.042)	(0.042)	(0.034)	(0.053)	(0.039)	(0.047)
Level 2 NVQ	0.010	0.032	-0.021	0.034	-0.046	-0.052**	-0.067*	-0.009	-0.015
	(0.030)	(0.031)	(0.029)	(0.031)	(0.032)	(0.026)	(0.039)	(0.030)	(0.035)
Level 3 NVQ	-0.028	0.008	0.042	-0.045	-0.094***	-0.018	-0.026	-0.025	-0.031
	(0.030)	(0.031)	(0.029)	(0.032)	(0.032)	(0.026)	(0.039)	(0.030)	(0.036)
Level 4 NVQ	0.016	-0.022	-0.032	0.045	-0.002	0.011	-0.037	-0.063	-0.046
	(0.050)	(0.052)	(0.048)	(0.051)	(0.053)	(0.043)	(0.063)	(0.049)	(0.058)
Level 5 NVQ	-0.199	-0.073	0.013	-0.261**	-0.299**	-0.143	-0.097	-0.188	-0.020
	(0.128)	(0.138)	(0.128)	(0.126)	(0.130)	(0.111)	(0.155)	(0.124)	(0.156)
Completion of apprenticeship	0.019	0.004	-0.002	-0.102**	0.033	0.027	0.069	0.123***	0.080
	(0.046)	(0.048)	(0.045)	(0.047)	(0.049)	(0.040)	(0.060)	(0.046)	(0.054)
Other vocational qualification	0.005	-0.044	-0.025	-0.023	-0.036	-0.029	-0.043	-0.036	-0.041
	(0.039)	(0.039)	(0.037)	(0.039)	(0.040)	(0.033)	(0.049)	(0.038)	(0.045)
Other professional qualification	0.056*	0.039	0.047	0.075**	0.079**	0.163***	0.064	0.091***	-0.037
	(0.033)	(0.033)	(0.031)	(0.033)	(0.034)	(0.028)	(0.042)	(0.032)	(0.037)
No vocational qualification	0.112**	0.173***	0.176***	0.145**	0.202***	0.089**	-0.003	0.080	0.056
	(0.052)	(0.054)	(0.051)	(0.058)	(0.059)	(0.045)	(0.072)	(0.052)	(0.061)
No religion (ref: having a religion)	-0.051**	-0.002	-0.002	-0.035	-0.012	0.019	0.009	-0.016	-0.006
	(0.025)	(0.026)	(0.024)	(0.026)	(0.027)	(0.022)	(0.033)	(0.025)	(0.029)
Heterosexual (ref: other orientations)	-0.030	-0.012	-0.045	0.106**	0.034	-0.019	-0.013	-0.042	-0.002
	(0.043)	(0.044)	(0.043)	(0.045)	(0.046)	(0.037)	(0.056)	(0.043)	(0.051)
Organizational size (ref: 5-999)									
1000-9,999	0.012	-0.010	-0.039	0.023	0.068**	0.008	-0.010	-0.019	-0.032
	(0.030)	(0.030)	(0.028)	(0.031)	(0.032)	(0.026)	(0.039)	(0.029)	(0.035)
10,000 and above	0.001	-0.056*	-0.031	0.026	0.036	-0.045	0.003	-0.031	-0.019
	(0.032)	(0.033)	(0.031)	(0.033)	(0.034)	(0.028)	(0.042)	(0.032)	(0.038)
Industries (ref: manufacturing)									
Electricity	0.148*	0.049	-0.023	0.181**	0.146	0.342***	0.356***	0.166**	0.139

	(0.084)	(0.087)	(0.083)	(0.087)	(0.092)	(0.083)	(0.126)	(0.084)	(0.103)
Water supply	-0.040	0.189*	-0.108	0.248**	0.233**	0.036	0.319**	0.015	0.020
	(0.095)	(0.104)	(0.097)	(0.107)	(0.111)	(0.089)	(0.137)	(0.096)	(0.117)
Construction	0.331***	0.235***	0.052	0.294***	0.138*	0.027	0.042	0.170**	0.076
	(0.072)	(0.076)	(0.070)	(0.077)	(0.079)	(0.064)	(0.097)	(0.071)	(0.089)
Wholesale/Retail	0.032	-0.048	-0.148***	0.022	0.081	-0.097*	0.026	0.072	-0.088
	(0.055)	(0.058)	(0.056)	(0.059)	(0.062)	(0.050)	(0.082)	(0.056)	(0.069)
Transportation	0.109*	0.026	-0.084	0.191***	0.189***	0.332***	-0.115	0.136**	-0.043
	(0.059)	(0.061)	(0.061)	(0.062)	(0.064)	(0.054)	(0.079)	(0.059)	(0.070)
Accommodation services	-0.089	-0.150**	-0.114	0.207**	0.020	-0.100	0.068	0.021	-0.064
	(0.073)	(0.076)	(0.074)	(0.084)	(0.084)	(0.065)	(0.110)	(0.073)	(0.094)
Information and communication	0.271***	0.076	0.017	-0.137*	-0.031	-0.238***	-0.151	0.198**	-0.246**
	(0.085)	(0.089)	(0.084)	(0.083)	(0.089)	(0.075)	(0.119)	(0.085)	(0.104)
Financial services	0.165*	-0.041	0.008	0.121	0.028	-0.164*	0.220	0.022	-0.246**
	(0.100)	(0.101)	(0.097)	(0.101)	(0.105)	(0.092)	(0.151)	(0.096)	(0.116)
Real estate	0.190**	0.025	-0.025	0.274***	0.176**	-0.025	0.029	0.108	0.012
	(0.078)	(0.080)	(0.076)	(0.083)	(0.086)	(0.068)	(0.106)	(0.077)	(0.096)
Professional services	0.238***	0.174**	-0.046	0.178**	0.123*	-0.179***	-0.053	0.136**	-0.030
	(0.068)	(0.071)	(0.066)	(0.069)	(0.073)	(0.060)	(0.094)	(0.067)	(0.084)
Administrative and support	0.331***	0.098	0.007	0.243***	-0.059	-0.073	0.049	0.192**	-0.036
	(0.079)	(0.082)	(0.079)	(0.086)	(0.085)	(0.069)	(0.113)	(0.078)	(0.099)
Public admin	0.268***	0.069	0.002	0.178***	0.147**	-0.205***	-0.002	0.190***	-0.117
	(0.063)	(0.065)	(0.062)	(0.066)	(0.067)	(0.055)	(0.083)	(0.062)	(0.074)
Education	0.498***	0.308***	0.086	0.237***	0.239***	-0.140***	0.191**	0.316***	-0.068
	(0.059)	(0.061)	(0.057)	(0.061)	(0.063)	(0.051)	(0.080)	(0.059)	(0.071)
Human health	0.331***	0.224***	-0.029	0.394***	0.162***	-0.149***	0.090	0.237***	-0.117*
	(0.053)	(0.055)	(0.052)	(0.057)	(0.058)	(0.046)	(0.073)	(0.053)	(0.064)
Arts, entertainment	0.265***	0.175**	0.000	0.231***	0.158**	-0.163***	0.024	0.333***	-0.163**
	(0.069)	(0.072)	(0.068)	(0.073)	(0.075)	(0.060)	(0.092)	(0.071)	(0.082)
Other services	0.338***	0.138	-0.089	0.102	0.045	0.126*	-0.107	0.356***	-0.084
	(0.084)	(0.085)	(0.079)	(0.084)	(0.087)	(0.073)	(0.110)	(0.084)	(0.096)
Public sector	0.036	0.040	-0.015	-0.020	-0.023	0.037	-0.169***	0.062*	0.025
	(0.035)	(0.036)	(0.034)	(0.037)	(0.038)	(0.030)	(0.045)	(0.035)	(0.041)
Occupational Categories (ref:Managerial)									
Intermediate	-0.037	-0.020	0.000	0.080**	0.043	-0.055**	0.020	-0.099***	0.023
	(0.032)	(0.033)	(0.030)	(0.032)	(0.034)	(0.027)	(0.041)	(0.031)	(0.038)
Lower	0.131***	0.015	0.052	0.189***	0.115***	-0.135***	-0.077	0.012	0.005

	(0.037)	(0.038)	(0.036)	(0.039)	(0.040)	(0.032)	(0.049)	(0.037)	(0.044)
Intercept	-4.780***	-4.570***	-5.470***	-2.419***	-3.047***	-0.911***	-2.702***	-3.995***	-3.537***
	(0.196)	(0.211)	(0.193)	(0.202)	(0.212)	(0.164)	(0.266)	(0.192)	(0.234)
Test of exogeneity (Athrho)	0.092	0.198***	-0.012	0.039	0.018	-0.118*	0.057	0.063	-0.025
	(0.070)	(0.075)	(0.070)	(0.071)	(0.072)	(0.061)	(0.086)	(0.070)	(0.086)
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	20549	20549	20549	20549	20549	20549	20549	20549	20549

Clustered standard errors in parenthesis and the coefficients are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.0.8: **Marginal Effects for Types of Jobs under Demand-Control Model**

Satisfaction with achievement			Satisfaction with Initiative		
	dy/dx	Standard Error		dy/dx	Standard Error
Types of Jobs (ref: Low Demand and High Control					
High Demand and High Control	-0.009	0.012		0.013	0.012
High Demand and Low Control	-0.037***	0.014		-0.013	0.013
Low Demand and Low Control	-0.040***	0.011		-0.015	0.011

Satisfaction with Influence			Satisfaction with Training		
	dy/dx	Standard Error		dy/dx	Standard Error
Types of Jobs (ref: Low Demand and High Control					
High Demand and High Control	-0.007	0.017		0.006	0.009
High Demand and Low Control	-0.047**	0.020		0.018*	0.010
Low Demand and Low Control	-0.040**	0.016		0.009	0.009

Satisfaction with Skills			Satisfaction with Pay		
	dy/dx	Standard Error		dy/dx	Standard Error
Types of Jobs (ref: Low Demand and High Control					
High Demand and High Control	0.002	0.009		-0.023	0.014
High Demand and Low Control	0.014	0.010		-0.037**	0.017
Low Demand and Low Control	0.009	0.008		0.012	0.013

Satisfaction with Job security			Satisfaction with Work itself		
	dy/dx	Standard Error		dy/dx	Standard Error
Types of Jobs (ref: Low Demand and High Control					
High Demand and High Control	0.000	0.005		-0.013	0.012
High Demand and Low Control	0.008	0.005		-0.031**	0.014
Low Demand and Low Control	0.001	0.004		-0.017	0.011

Satisfaction with Involvement in decision-making		
	dy/dx	Standard Error
Types of Jobs (ref: Low Demand and High Control		
High Demand and High Control	-0.008	0.008
High Demand and Low Control	-0.020**	0.010
Low Demand and Low Control	-0.007	0.008

Notes: dy/dx is for discrete change of dummy variable from 0 to 1. Marginal effects are statistically significant at * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.0.9: **Definitions of Variables**

Job satisfaction	How satisfied are you with the following aspects of your job?
	The sense of achievement you get from your work
	The scope for using your own initiative
	The amount of influence you have over your job
	The training you receive
	The opportunity to develop your skills in your job
	The amount of pay you receive

	Your job security
	The work itself
	Amount of involvement you have in decision-making at this workplace?
Job demand	**Do you agree or disagree with the following statements about your job?**
Work intensity	My job requires that I work very hard
Work Overload	I never seem to have enough time to get my work done
Timing Demand	I often find it difficult to fulfil my commitments outside of work because of the amount of time I spend on my job
Secured job	**I feel my job is secure in this workplace**
Control and Autonomy	**How much influence do you have over the following?**
Over task	The tasks you do in your job
Over pace	The pace at which you work
On how to do task	How you do your work
Over order of task	The order in which you carry out tasks
Over working time	The time you start or finish your working day
Informative management	**How good would you say managers at this workplace are at keeping employees informed about the following?**
Operations	Changes to the way the organisation is being run
Staffing	Changes in staffing
Sequence	Changes in the way you do your job
Finance	Financial matters, including budgets or profits
Consultative Management	**How good would you say managers at this workplace are at?**
Views of employees	Seeking the views of employees or employees' representatives
Response to suggestions	Responding to suggestions from employees or employees' representatives
Influence of employees	Allowing employees or employees' representatives to influence final decisions
Intrinsic Motivation	**To what extent do you agree or disagree with the following statements about working here?**
Using initiative	Using my own initiative I carry out tasks that are not required as part of my job
Value sharing	I share many of the values of my organisation
Loyal	I feel loyal to my organisation
Proud	I am proud to tell people who I work for
Supportive Management	**Now thinking about the managers at this workplace, to what extent do you agree or disagree with the following?**
Keep promises	Can be relied upon to keep to their promises
Sincere	Are sincere in attempting to understand employees' views
Honest	Deal with employees honestly
Understanding	Understand about employees having to meet responsibilities outside work
Encouraging	Encourage people to develop their skills
Treat fairly	Treat employees fairly
Voice Mechanisms	
Grievance procedure	Is there a formal procedure for dealing with individual grievances raised by any employee at this workplace?
Union Member (ref: not a member)	Are you a member of a trade union or staff association?
Have been in the past	No, but have been in the past
A member	Yes

Supervisor	Do you supervise any other employees?
Consultation Schemes (ref: none)	
Suggestion	
Notice Boards	
Cascade (Systematic use of management chain/cascading of information)	Besides the schemes we have discussed are there any other ways in which management communicates or consults with employees at this workplace?
Newsletters	
Email	
Intranet	
Other ways of communicating	
Joint Consultative Committees	Are there any committees of managers and employees at this workplace, primarily concerned with consultation, rather than negotiation?
Individual Incentive pay	
Merit Pay	Do any of the employees in this workplace get paid by results or receive merit pay?
Types of Pay (ref: basic pay)	Which of the following do you receive in your job here?
Individual pay	Payments based on your individual performance or output
Group pay	Payments based on the overall performance of a group or a team
Workplace pay	Payments based on the overall performance of your workplace or organisation (e.g. profit-sharing scheme)
Extra pay	Extra payments for additional hours of work or overtime
Pension	Contributions to a pension scheme
Measures of fairness	
Appeal right	Do employees have a right to appeal against a decision made under the procedure?/ In disciplining or dismissing an employee, are they able to appeal against the decision?
EO policies	Does this workplace have a formal written policy on equal opportunities or managing diversity?
Gender	Are you male or female?
Ethnicity (ref: British)	
Irish	
Any other white background	
White and black Caribbean	
White and black African	
White and Asian	
Any other mixed background	
Indian	
Pakistan	Which of these groups do you consider you belong?
Bangladeshi	
Chinese	
Any other Asian background	
Caribbean	
African	
Any other black background	
Arab	
Any other ethnic group	
Religion	What is your religion?

No religion	
Christian (including Church of England, Church of Scotland, Catholic, Protestant, and all other Christian denominations)	
Buddhist	
Hindu	
Jewish	
Muslim	
Sikh	
Another religion	
Marital status	
Single	
Married or living with a partner	Which of the following describes your current status?
Divorced/separated	
Widowed	
Age	
16-17	
18-19	
20-21	
22-29	
30-39	How old are you?
40-49	
50-59	
60-64	
65 and above	
Sexual orientation	
Heterosexual or straight	
Gay or lesbian	
Bisexual	Which of the following options best describes how you think of yourself?
Other	
Prefer not to say	
Organisational size	
5-9	
10-24	
25-49	
50-99	
100-149	
150-249	
250-499	How many employees in total are there within each organisation in the UK
500-999	
1,000-1,999	
2,000-4,999	
5,000-9,999	
10,000-49,999	
50,000-99,999	

100,000 or more	
Industrial classifications and academic, professional or vocational qualifications	
GCSE grades D-G/CSE grades 2-5, SCE O grades D-E/SCE Standard grades 4-7	
GCSE grades A-C, GCE 'O'-level passes, CSE grade 1, SCE O grades A-C, SCE Standard grades 1-3	
1 GCE 'A'-level grades A-E,1-2 SCE Higher grades A-C, AS levels	
2 or more GCE 'A'-levels grades A-E, 3 or more SCE Higher grades A-C	
First degree, eg BSc, BA, BEd, HND, HNC, MA at first degree level	
Higher degree, eg MSc, MA, MBA, PGCE, PhD	
Other academic qualifications No academic qualifications	
Level 1 NVQ or SVQ, Foundation GNVQ or GSVQ	Which, if any, of the following academic, vocational or professional qualifications have you obtained?
Level 2 NVQ or SVQ, Intermediate GNVQ or GSVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma	
Level 3 NVQ or SVQ, Advanced GNVQ or GSVQ, City and Guilds Advanced Craft, BTEC National, RSA Advanced Diploma	
Level 4 NVQ or SVQ, RSA Higher Diploma, BTEC Higher level	
Level 5 NVQ or SVQ	
Completion of trade apprenticeship	
Other vocational or pre-vocational qualifications, e.g. OCR	
Other professional qualifications, e.g. qualified teacher, accountant, nurse	
No vocational or professional qualifications	
Tenure (ref: <1year)	
1-2 years	
2-5 years	How many years in total have you been working at this workplace?
5-10 years	
>10 years	
Contract (ref: permanent)	
Temporary	Which of the phrases below best describes your job here?
Fixed	
Public Sector	
Public Limited Company (PLC)	
Private limited company	How would you describe the formal status of this workplace (or the organisation of which it is a part)?
Company limited by guarantee	
Partnership (inc. Limited Liability Partnership) / Self-proprietorship	1-7 are private and 8-12 are public
Trust / Charity	

Body established by Royal Charter	
Co-operative / Mutual / Friendly society,	
Government-owned limited company / Nationalised industry	
Public service agency	
Other non-trading public corporation	
Quasi Autonomous National Government Organisation (QUANGO)	
Local/Central Government (inc. NHS and Local Education Authorities)	
Occupational Categories	
Higher Managerial Occupations	
Lower Managerial Occupations	
Professional Occupations	
Intermediate Occupations	
Lower supervisory and technical occupations	
Semi-routine occupations	
Routine occupations	

For more information on the data, see: http://discover.ukdataservice.ac.uk/catalogue/?sn=7226&type=Data%20catalogue