

The effects of employees' empowerment on job satisfaction: empirical analysis of the demand-control model

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[No notes.]

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This study re-evaluates employees' empowerment practices based on opportunities to influence various aspects of the job (job control), by empirically analysing the demand-control model as well as extending the model to include EO policy. We test the fact that the balance between demands and control (joint effects) has additional effects, apart from the separate effects of demands and control. That is, it is not just an issue of whether one compensates for the other, but they have joint effects associated with the balance.

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The D-C model is a major theoretical model used in studies on mental health and psychosocial work conditions. The model proposes psychological strains and physiological illness as the consequences of job demands and job control, depending on the availability of these job characteristics to the employee.

- **Stressful Jobs:** where workers have high levels of demands and low degree of control over responsibilities. Employees have limited time to deliver and are faced with conflicting demand. These types of jobs highlight the strain hypothesis emphasised by the demand-control model.
- **Less Stressful Jobs:** are associated with higher degree of job control and low demand. 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.

- **Active Jobs:** jobs that are characterised by high levels of job control and high levels of on-the-job demands. 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.
- **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 demands.

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Johnson and Hall (1988) argued that job control is not the only resource available for coping with job demands and they suggested that social support from colleagues and managers might also be a moderator of the job demands and strain relationship. In this study we suggest that the presence of EO policies may be a more effective moderating resource of the 'job demands and job satisfaction' relationship, as well as strengthening job control. That is, the presence of EO policies may be 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 less discriminatory.

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.

Further, an EO policy may serve as a buffering mechanism for the negative consequences of job demands through the means of ensuring that all groups of employees are allocated appropriate workload. That is, it could serve as a medium of ensuring that discriminated groups are allocated the same workload just 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 demands by creating an active coping atmosphere for employees. Such policy may also provide a non-discriminatory atmosphere for employee's voice against inappropriate job demands. However, if equality plans are adopted to tick boxes rather than

promote equality, then they may not be effective. Based on these arguments, our next sets of hypotheses are summarized as follows.

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However, with the deletion of missing cases in the dependent variables, we have a sample size of 20,596. Also, as a result of PCA carried out in this study, 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 and this is clearly highlighted in the following sections.

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- Job Demand:
 - "My job requires I work very hard" (work intensity).
 - "I never seem to have enough time to get my work done" (work overload).
 - "I often find it difficult to fulfil commitments outside of work, because of the amount of time I spend on my job" (timing demand).
- Job Control:
 - Employees' influence over various aspects of work, such as: 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.

We control for:

- Engagement practices (which are theoretically related to employees' empowerment): individual/collective participatory practices, different types of management (informative, supportive and consultative), individual/collective payment schemes.
- Fairness at the workplace: EO policies and the right to appeal a decision made under the grievance procedure.

- Employees' characteristics: intrinsic motivation, socio-demographic factors, union membership, supervisory responsibilities, job tenure. (Further, the inclusion of union membership poses the question about endogeneity, which has been highlighted in the literature. This is tested later in the paper.)
- Workplace characteristics: workplace size, industries, private/public sector, grievance procedure, occupational categories.

The literature has suggested that all these control variables are important determinants of various forms of job satisfaction; non-inclusion of these variables in a job satisfaction model 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.

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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. Variance states how the value of a particular feature varies throughout the data. The rule of thumb is to retain components that have Eigenvalues of one or greater than one. We retain only one component for job control and job demands, as the components explain 62% and 55% of the total variance respectively.

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 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. Imputations are successfully done for job demands and job control indexes. For the job demands index, 406 observations that had missing cases were imputed. However, in the case of the job control index, 47 observations (out of 403 observations) with missing cases could not be imputed. An 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.

Using composite measures of job demands and job control obtained from the PCA analysis, we construct four binary variables that measure the four types of jobs. The median value is used as the discriminative cut-off points for these characteristics and the binary variables are constructed as follows.

Analysis is conducted individually for various forms of satisfaction, which makes a total of nine models for job satisfaction. Each factor measuring each predictor is estimated individually, as they relate to different types or aspects of the predictor. However, in terms of achieving the interaction terms, global measures of the predictors are used.

The response variables originally had five categories, grouping very satisfied/satisfied versus neutral/dissatisfied/very dissatisfied for intrinsic forms of satisfaction and very satisfied/satisfied/neutral versus dissatisfied/very dissatisfied for extrinsic forms of satisfaction... on the basis of response to these questions.

Missing values were controlled for by recoding missing observations for each variable as zero and creating a missing value indicator which takes the value of 1 when observation is missing and the value of 0 if otherwise.

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24% of the employees examined are reported to be in active and stressful jobs, while 26% of British employees reported being in passive jobs, which are characterised by repetitive tasks. That is, 26% of British employees report that they do not have the opportunity to make decisions regarding their work or work environment, and they are faced with low levels of job demands. As such, there will be less opportunity to solve problems or learn new skills. A higher percentage (27%) of employees report being in low-demand and high-control jobs (i.e. less stressful jobs).

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Parallel regression assumption - This assumption is the parallel regression assumption (equidistance assumption). It states that the relationship between each pair of outcome categories is the same. The assumption was rejected and logit models were estimated.

The negative association of union membership with job satisfaction shown by some studies (Bryson et al., 2004; Borjas, 1979) may be due to unobserved factors co-determining union membership and job satisfaction, so that union membership - which is also an employee-level variable - may be endogenous.

We test the fact that happier workers may be union members. 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 estimated the effect of union membership on job satisfaction while simultaneously estimating union membership equation with the use of instrumental variables.

This model portrays 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 appears on the right-hand side of the second equation.

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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.

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Table 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 job demands and high job control), stressful jobs (jobs with high job demands and low job control) and passive jobs (jobs with low job demands and low job control) are less likely to be satisfied with different aspects of the job when compared to employees in low-strain jobs (jobs with low job demands and high job control).

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Table 9 shows that job demands and job control have separate and significant effects on 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, we find that work intensity ("job requires I work very hard") is positively related to four forms of job satisfaction and negatively associated with pay satisfaction and job security satisfaction. These results on the independent effects of job control and job demands support the findings of previous studies and hypotheses of the demand-control model.

With the addition of other explanatory and control variables, Table 9 shows that active jobs (jobs with high job demands and high job control) are not significantly related to any form of job satisfaction, when

compared to low-strain jobs (jobs low job demands and high job control). This non-significant result may result from the effects being captured by engagement practices that are included as control variables, as they may affect job control and job demands.

On the other hand, employees in the passive jobs (jobs with low demands and low control) 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 problem-solving opportunities - and this, in turn, results in the likelihood of less satisfaction with achievement and influence.

Employees in high-strain jobs are 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 the high level of job demands. However, as proposed in the demand-control model, high levels of job demands result in strain, so this may be a possible explanation for the negative associations obtained.

Extending the hypotheses of the demand-control model, Table 9 shows that the joint presence of job control and EO policies is 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 are shown to moderate job demands at high levels, and therefore 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 demands at medium and low levels.

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[No notes.]