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

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Thus, 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. We test 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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D-C 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 demands and job control, depending on the availability of these job characteristics to the employee.

Emphasis is on job demands, the degree of decision authority and skills discretion (jointly referred to as job control)

In other words, job demands 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.

Based on the 2nd proposition, Karasek (1979) suggested that job demands might not necessarily have negative effects if adequate job control opportunities are made available to employees. This means that the effect of job demands on employees' wellbeing varies with the amount of control an employee has over tasks.

The demand-control-support model is used because it is envisaged that the level of job demands would be affected as a result of more responsibilities assigned to employees through participatory and engagement schemes.

DC suggests that high level of job demands combined with low level of job control has detrimental effects on employee wellbeing

This is the basic tenet of the model as it postulates job control as being a moderator of the potential negative effect of job demand on employee wellbeing (Panatik et al, 2011; McClenahan et al, 2007)

With this in mind, we however suggest that when employees participate individually by having influence over their job and decisions in the form and they are rewarded accordingly for their effect through an individual pay scheme, the effect of job demands on job satisfaction would be minimal

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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 emphasised by the demand-control model.

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.

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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As mentioned earlier, the demand-control model has been mainly tested on the mental health of employees with few studies concentrating on 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 demands and job control on job satisfaction have been confirmed but results on joint effects have been mixed, inconclusive and sometimes confusing.

Hypothesis 1: Based on the propositions of demand-control model that high levels of job demands is negatively associated with employees' wellbeing, the first hypothesis is summarized as

Hypothesis 2: Conversely, job control according to the model is expected to increase job satisfaction independently. Job control has been suggested and emphasised in the literature (e.g. Wood, 2008; De Witte et al., 2007; Wood and de Menezes, 2011) as an important predictor of job satisfaction. Karasek (1979) suggested that employees' empowerment is expected to positively influence job satisfaction.

Hypothesis 3: In addition to the separate effects of job demands and control, we examine the effect of the joint presence (interaction effect) of job control and job demands. Based on Karasek's model, we expect that employees will be dissatisfied with different aspects of the job when they are faced with high levels of job demands 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. As such, we test the strain hypothesis of the demand-control model.

The joint presence of a high level of job demands 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 demands and a high level of job control.

Hypothesis 4: Based on Karasek's model, we argue that a high level of job demands do 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 demands faced by employees and as such, the presence of control opportunities weakens the negative consequences of job demands 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. Karasek's model suggested that employees in such jobs tend to be productive and acquire new skills.

A high level of job control moderates the negative consequences of a high level of job demands; as such employees in jobs characterised by high levels of job demands 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.

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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 strengthen 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.

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 EO policies.

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 in a way and this is clearly highlighted in the following sections.

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All other controls include employee characteristics such as gender, age, qualification, ethnicity, religion, sexual orientation, tenure, type of contract, marital status, workplace size and industrial classification

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We control for engagement practices because these practices are theoretically related to employees' empowerment. Engagement practices such as: individual and collective participatory practices, different types of management (informative, supportive and consultative), individual and collective payment schemes.

The literature has suggested that all these control variables are important determinants of various forms of job satisfaction and 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. Further, the inclusion of union membership poses the question about endogeneity, which has been highlighted in the literature and this is tested later in the paper

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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 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

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 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.

Analysis is conducted individually for various forms of satisfaction which in sum makes it 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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We retain only one component for job control and job demands as the components explain 62% and 55% of the total variance respectively.

We use the median value as the discriminative cut-off points for these characteristics and the binary variables are constructed as follows:

We use low demand-high control dummy as the reference category because it has the largest mean when compared with the other binary variables and because we are interested in the effects of high demands-low job control.

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[No notes]

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Parallel regression assumption - 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

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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The logit estimation results show that union membership is negatively related to satisfaction with skills and involvement in decisions and positively related to satisfaction with pay and work itself. 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

). That is, dissatisfied employees are union members 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.

Union membership isnot endogenous but institutional

Since union membership is not endogenous for most of the forms of job satisfaction and there are no significant changes in the results, we know that base models results are reliable and worth discussing

Explanation for exogeneity- A possible explanation for this result is that British workplaces may be covered by union bargaining and non-union members do not need to join unions because of dissatisfaction so as to benefit from union bargaining. Covered or uncovered workplaces were not tested in this study.

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.