JOB INSECURITY AND HEALTH:
THE MODERATING ROLE OF
WORKPLACE CONTROL

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SUMMARY
Based on data from 187 black South African gold miners, we examine the relationships between job insecurity, workplace control and personal outcomes (psychosomatic symptoms, negative mood, blood pressure) and organizational outcomes (turnover intentions, organizational commitment). Job insecurity was positively related to turnover intentions and negative mood. Perceptions of workplace control (ie the ability to protect oneself from negative events at work) were negatively related to both turnover intentions and negative mood, and positively related to organizational commitment. Perceived control moderated the relationship between somatic symptoms and blood pressure on the one hand, and, job insecurity. Job insecurity was positively associated with somatic symptoms and blood pressure when perceived workplace control was low, but unrelated to these outcomes when perceived workplace control was high. Implications of these results for interventions are discussed.

KEY WORDS — job insecurity; workplace control; psychosomatic symptoms; organizational commitment; negative mood

As one result of a recessionary climate, organizations in many countries have been resorting to layoffs, downsizing or 'right sizing' to reduce labour costs. The effects of such layoffs on the victims are well documented. Over 60 years of research have consistently pointed to the negative consequences of unemployment on individuals' psychological and physical health. More recently, research attention has been directed to the phenomenon of 'layoff survivors': those people who remain in the organization after a round of layoffs. A growing body of literature attests to the deleterious psychological and work performance effects experienced by layoff survivors.

OUTCOMES OF JOB INSECURITY

One negative effect experienced by layoff survivors is a sense of job insecurity. Indeed, job insecurity affects most employees in the organization. The closer an employee was to those laid off, the greater the severity of the layoff, and higher levels of prelayoff commitment all predict greater levels of job insecurity. Following (or during) corporate retrenchment, individuals fear the loss of their own livelihood as they see their coworkers lose their jobs or have their hours and/or their responsibilities reduced or terminated. In turn, these perceptions of job insecurity lead to negative consequences for the individual. At the individual level, job insecurity may be viewed as a classic work stressor with the expectation that continued exposure to job insecurity would result in impaired psychological and physiological health. Karasek and Theorell, for example, identify job insecurity as a problem particularly pertinent to blue-collar workers. As they note, the problems associated with unemployment are not limited to those who lose their jobs. Those who remain in jobs but are constantly threatened by their loss are also at risk. More direct evidence comes from studies of job insecurity and depression, increased negative
An alternative model of how control and job insecurity might affect well-being suggests that control exerts a direct positive effect on well-being, while job insecurity exerts a direct negative effect. Referring to this as the ‘main effect’ model of control, Frese suggests that control is, in itself, associated with increased well-being and there is a wealth of empirical evidence suggesting that autonomy and control contribute directly to individual mental health. Thus, the second goal of this study was to empirically contrast the buffering model with the main effect model of job insecurity and control perceptions.

THE CURRENT STUDY

We examined the effects of job insecurity and control perceptions on both individual and organizational outcomes for 187 South African gold miners for several reasons. First and foremost, retrenchments are now widespread in the gold-mining industry. Whereas some 477,397 black mineworkers were employed in underground mining in South Africa in 1986, employment statistics indicate that only 324,441 people filled similar positions in 1992. Hence, we expect that job insecurity levels would be high as our data were collected in 1993. If this prediction is borne out, we would also expect to find associated health-related problems in the population. Similarly, given that change in general predicts uncertainty, which would be strongly associated with job insecurity, we expect that job insecurity may also be heightened by recent political changes in South Africa, as well as technological changes in general. Second, given that an essential psychological characteristic underlying the experience of job insecurity is powerlessness, we assess whether employees’ feelings about the extent of their control in the workplace buffer them from any negative health effects of job insecurity. This potential ‘buffering’ effect is important for conceptual and pragmatic reasons. Conceptually, no such investigation currently exists. Pragmatically, following the recent increase in layoffs, the National Union of Mineworkers have focused some of their efforts on preventing layoffs, entered into negotiations with management concerning future layoffs, and have provided assistance to individuals who have been laid off. Thus, we specifically investigate employees’ perceptions of workplace control.

JOB INSECURITY AND CONTROL

Previous research has suggested that job insecurity is primarily a function of the perception of a lack of control. Individuals must perceive a direct threat to their jobs and must believe that they are powerless to counteract this threat to experience job insecurity.

In this sense, the perception of control (ie the ability to protect oneself from negative consequences) is predicted to have a ‘buffering’ effect. When an individual perceives that he/she can counteract a threat (ie has control), negative outcomes are avoided. Conversely, individuals who see themselves as having little control in the workplace are likely to experience adverse psychological and physical consequences. To date, no empirical investigation has explicitly examined the buffering role of control perceptions for the effects of job insecurity.

However, the role of control as a buffer or protection against job insecurity is similar to the job demand—decision latitude model proposed by Karasek and his colleagues. Essentially, the demand—latitude model suggests that the perceptions of decision latitude (ie task authority, skill discretion) moderate the impact of job demands on individual well being. Despite the popularity of the demand—latitude model in the job design literature, the empirical evidence supporting the interactive model is relatively weak.
METHOD

Subjects

Participants in the study were drawn from a sample of 213 South African gold miners. All participants were male, reported an average age of 33.28 years (SD = 7.92) and worked in underground, non-supervisory jobs. They had been miners for an average of 10.96 years (SD = 7.60) and had been with their current employer for an average of 8.15 years (SD = 6.38). This study is based on the 187 miners for whom complete data were obtained.

Procedure and measures

Because we anticipated low literacy levels among the sample, and a reduced response format was used, the questionnaire data were collected by having a research assistant read the questionnaire to participants. The research assistant also recorded participants’ responses on the questionnaire form.

Job insecurity was measured by two items (‘I have been worried about being retrenched’ and ‘I am upset about the possibility of being retrenched’). Respondents answered the items along a three-point scale (1 = no, 2 = don’t know, 3 = yes) and the two items were moderately correlated ($r(185) = 0.46, p < 0.01$).

Workplace control was assessed by a six-item adjective checklist adapted from Nowlis. Respondents were asked to indicate whether they had experienced each mood (namely, worried, relaxed, scared, sad, angry, happy) in the last month along a three-point response scale (1 = no, 2 = don’t know, 3 = yes). The scale demonstrated internal consistency (alpha = 0.87).

Negative mood was measured by a six-item adjective checklist adapted from Nowlis. Respondents were asked to indicate whether they had experienced each mood (namely, worried, relaxed, scared, sad, angry, happy) in the last month along a three-point response scale (1 = no, 2 = don’t know, 3 = yes). The scale demonstrated internal consistency (alpha = 0.80).

Psychosomatic health was measured by two items, namely ‘I have been getting headaches often lately’ and ‘I have not been sleeping very well lately’. Again, both items were rated along a three-point response scale (1 = no, 2 = don’t know, 3 = yes) and the two items were moderately correlated ($r(185) = 0.40, p < 0.01$).

After completing the questionnaire, respondents had their blood pressure taken using a standard sphygmomanometer. To obtain a measure of blood pressure we followed the procedures outlined by Bluen and Jubiler-Lurie. Specifically, blood pressure readings were converted to a single index by taking one-third of the difference between the systolic and diastolic readings all divided by the diastolic pressure.

Turnover intentions were measured by two items asking ‘I will probably look for a job that has nothing to do with mining at all’ and ‘I will do mining again but not for this mine’. Again respondents answered along a three-point response scale (1 = no, 2 = don’t know, 3 = yes) and the two items were moderately correlated ($r(185) = 0.45, p < 0.01$).

Organizational commitment was measured by three items (namely ‘I am proud to work for this mine’, ‘I really feel like I belong to this mine’, and ‘I would be happy to spend the rest of my career with this mine’) which were adapted from the Organizational Commitment Questionnaire. Respondents answered along a three-point response scale (1 = no, 2 = don’t know, 3 = yes) and the scale demonstrated adequate internal consistency. The internal consistency for this scale was 0.73.

Method of data analysis

To test the interactional and main effect models described earlier we followed the hierarchical multiple regression procedures described by Aiken and West. First, the two predictors (job insecurity and workplace control) were centred about their means by standardization. Second, an interaction term was computed by cross-multiplying the two standardized predictors (on the first step) and the interaction term (on the second step). The change in $R^2$ from step 1 to step 2 provides a test of whether the interaction term is making a significant contribution to the equation. Because of the statistical difficulties associated with assessing interaction terms in field research, we retained interactions accounting for more than 1 per cent of the criterion variance for further analyses. Both Monte Carlo and field research support this more liberal criterion. Analyses of field studies suggest that interactions accounting for less than 3 per cent of the variance are the norm, while Monte Carlo findings indicate that interactions
accounting for 1 per cent of the criterion variance are meaningful in regression analyses.\textsuperscript{20}

When the interaction term was significant, we calculated and plotted the simple slopes\textsuperscript{20} for job insecurity at high, medium and low levels of workplace control. If the interaction term was not significant, then it was appropriate to interpret the direct effect of the predictors on each criterion. Initial inspection of the interaction term is justified for two reasons. First, interaction effects in multiple regression take precedence over main effects,\textsuperscript{23} and second, our conceptual predictions concerning the moderator effects of perceived workplace control are dependent on interaction effects.

**RESULTS**

Descriptive statistics and intercorrelations for all study variables are presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>1. Job insecurity</td>
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<td></td>
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<td>2. Workplace control</td>
<td></td>
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<td>3. Negative mood</td>
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<td>4. Blood pressure</td>
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<td>5. Health problems</td>
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<tr>
<td>6. Turnover intentions</td>
<td></td>
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<tr>
<td>7. Org. commitment</td>
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<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5.26</td>
<td>5.65</td>
<td>14.4</td>
<td>96.6</td>
<td>4.49</td>
<td>4.90</td>
<td>7.57</td>
</tr>
<tr>
<td>SD</td>
<td>1.28</td>
<td>2.59</td>
<td>3.75</td>
<td>9.68</td>
<td>1.61</td>
<td>1.25</td>
<td>2.83</td>
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</table>

\*\textit{r > 0.15, p < 0.05; r > 0.20, p < 0.01.}

Results of the hierarchical regression analyses are presented in Table 2. Perceptions of job insecurity were positively associated with turnover intentions ($B = 0.16$, $p < 0.05$) and blood pressure ($B = 0.16$, $p < 0.05$). Workplace control perceptions were negative associated with negative mood ($B = -0.26$, $p < 0.01$) and health ($B = -0.25$, $p < 0.01$). Workplace control perceptions were positively associated with organizational commitment ($B = 0.41$, $p < 0.01$).

Two of the five interaction terms were significant or approached significance. The interaction of job insecurity and workplace control was significantly associated with blood pressure ($B = -0.17$, $p < 0.05$) and marginally associated with physical health ($B = -0.12$, $p < 0.10$). Accordingly, both interactions were retained for further analyses.

For both criteria we calculated the simple slopes for job insecurity at high and low levels of perceived workplace control (operationally defined as one

<table>
<thead>
<tr>
<th>Step 1 (df = 2, 184)</th>
<th>Mood</th>
<th>Predictor BP</th>
<th>Health</th>
<th>Criteria Turnover</th>
<th>Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>-0.26</td>
<td>-0.05</td>
<td>-0.25</td>
<td>-0.22</td>
<td>0.41</td>
</tr>
<tr>
<td>2. Insecurity</td>
<td>0.13</td>
<td>0.16</td>
<td>0.10</td>
<td>0.16</td>
<td>0.05</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.10</td>
<td>0.02</td>
<td>0.08</td>
<td>0.09</td>
<td>0.16</td>
</tr>
<tr>
<td>$F$</td>
<td>10.5</td>
<td>2.2</td>
<td>8.2</td>
<td>9.5</td>
<td>17.5</td>
</tr>
<tr>
<td>$p$</td>
<td>0.01</td>
<td>NS</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (df = 3, 183)</th>
<th>Mood</th>
<th>Predictor BP</th>
<th>Health</th>
<th>Criteria Turnover</th>
<th>Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Control $\times$ insecurity</td>
<td>0.01</td>
<td>-0.17</td>
<td>-0.12</td>
<td>0.07</td>
<td>-0.04</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.00</td>
<td>0.03</td>
<td>0.02</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>$F$</td>
<td>1.4</td>
<td>5.5</td>
<td>2.9</td>
<td>1.0</td>
<td>0.3</td>
</tr>
<tr>
<td>$p$</td>
<td>NS</td>
<td>0.05</td>
<td>0.10</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

Note: Betas $> 0.13$, $p < 0.05$; betas $> 0.20$, $p < 0.01$. 
standard deviation above and below the mean. At high levels of workplace control, insecurity was unrelated to either blood pressure ($B = 0.01, \text{NS}$) or health ($B = -0.02, \text{NS}$). At low levels of workplace control, insecurity was positively associated with both blood pressure ($B = 0.34, p < 0.01$) and health ($B = 0.23, p < 0.05$).

**DISCUSSION**

The results of this study suggest that a sense of job insecurity resulting from layoffs was a significant and positive predictor of blood pressure and turnover intentions. These results offer support to the suggestion that job insecurity is associated with adverse health effects and may result in negative consequences for the organization as individuals seek alternative, and presumably more secure, employment. This latter result may run counter to current organizational practices which suggest that organizations can achieve significant benefits through layoffs and retrenchments. Workplace control perceptions negatively predicted health, turnover intentions and negative mood, while being positively associated with organizational commitment.

Against these practices and the latter findings, the importance of employees having some control over workplace events can be appreciated. Perceptions of workplace control moderated the impact of job insecurity on both blood pressure and physical health. In both instances, job insecurity predicted adverse consequences (increased blood pressure, increased symptoms) when perceived workplace control was low. On the other hand, when perceived workplace control was high, no adverse consequences of job insecurity were found. The moderating role of workplace control perceptions is consistent with the demand–latitude model of stress reactions. Interestingly, perceived workplace control operated to ‘buffer’ the individual from physiological strain but not psychological strain. These findings suggest a potential explanation for the conflicting evaluations of control models offered in the literature. Most of the empirical evidence supporting the demand–control model is based on indices of physiological strain, while much of the disconfirming evidence is based on measures of psychological strain (e.g., depression).

Perhaps most importantly, whether as a moderator of job insecurity or as a direct predictor, higher perceptions of workplace control had a beneficial impact on each criterion considered in this study. These results have direct implications for job design and, more pertinently, the management of corporate restructuring and layoffs. Specifically, our results suggest that increasing employees’ perceptions of workplace control will have beneficial effects for both the individual and the organization. In the case of layoffs or corporate retrenchment, informing individuals of the criteria to be used in making layoff decisions would certainly reduce any negative organizational effects, and would increase individual perceptions of workplace control. At a broader level, employee involvement in corporate decision-making would also increase employees’ workplace control over their jobs. In general, when employees see that they can influence the decisions most likely to affect their jobs, adverse individual and organizational consequences are likely to be avoided.

There are several potential limiting features to this research that should be acknowledged. First, the effect sizes (percentage of criterion variance explained) reported here are quite small (ranging from 2 to 16 per cent). Our use of truncated (three-point) response scales and our focus on interactions made obtaining large effect sizes unlikely. However, the small effect sizes reported here do not necessarily limit the applicability of our findings. As noted earlier, effect sizes of similar magnitudes are common, and indeed the norm, in multiple regression research focusing on interactions.

Second, our data were collected at one point in time, thereby limiting the strength of causal inference. Future research on the effects of job insecurity would be well advised to consider the use of longitudinal and, more generally, quasi-experimental designs. However, the fact that we collected objective health data among a sample of blue-collar workers strengthens the authenticity of the results.

These results also present some clues for future research. Given the prevalence of job insecurity and the significant link between job insecurity and health problems, it may be useful to investigate what factors other than workplace control buffer this relationship. One suggestion is that perceived union support, especially if the union focuses specifically on layoff policies in general and the victims and survivors of layoffs, will buffer the job insecurity/health problem relationship, and this will certainly be worthy of further investigation. In summary, we examined the role of layoff-induced job insecurity and workplace control
perceptions in predicting both individual and organizational outcomes. Job insecurity was significantly associated with physiological strain (blood pressure) and increased turnover intentions. Perceptions of workplace control moderated the effects of job insecurity on physiological strain (health and blood pressure) and otherwise exerted direct effects on psychological strain and both turnover intentions and organizational commitment. These results indicate that job insecurity is properly viewed as a stressor and suggest the practical utility of focusing on individual perceptions of workplace control in designing interventions.

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