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Predictors of Strain and Performance in Police: A Demand-oriented Analysis

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Abstract:

Purpose – This study aims to investigate the level of psychological distress and performance in a specific region (Region A) of a large state police force in Australia. Using an extended demand-control-support model of work stress,

Design/methodology/approach – This study is based on data collected through a self-administered survey among the members of the TNP during the summer of 2005 (n=812). Using multivariate level OLS regression models, predicting effects of commonly examined police stressors on the participants' stress levels are analyzed. Findings are evaluated in comparison to existing literature about police stress.

Findings – This study indicates that organizational issues are the most important causes of stress in policing. Besides, it was found that several police stressors, as found for local police departments, might not be having the same effects for larger, centralized police departments.

Practical implications – Modern policing can be a less stressful job if the police organizations take necessary steps towards applying modern management techniques at both macro and micro levels. Demographic differences, danger at work, or workload should not be counted as predictors of stress in policing without a through consideration of organizational matters.

Originality/value – This is the first study empirically and systematically assessing the issue of stress among the members of the TNP. In addition, it is one of the rare studies published in English regarding the issue of police stress in a developing country.

Police forces are said to have some of the most stressful working conditions of any occupation. This study investigates the levels of stress in a specific region (Region A) of a large state police force in Australia and then analyses key predictors, using an extended demand-control-support model, of psychological distress. In-role and extra-role performance measures were also included to explore the degree to which the predictor variables also had an impact on performance. Overall 31% (n=582) of employees from Region A participated. Results indicated that Region A employees are at a lower risk of suffering from psychological distress than other regional respondents, but their level of risk is higher than that of the general population. Regression analyses identified that the demand-control-support variables in combination with the measure of perceived fulfilment of expectations, explained a large percentage of variance in the variables of psychological distress and OCB-I. An important next step is to use
these results to develop a series of strategies that are tailored to the unique needs and circumstances of Region A.
Introduction

Occupational stress is one of the main causes of occupational disease and can have far-reaching consequences for both the worker and the workplace (Leigh and Schnall 2000). Although job stress is a concern for many industries and occupational groups, some professions appear to be more vulnerable to experiencing high levels of stress at work than others (Kop, Euwema et al. 1999). Policing has been identified as one of these particularly stressful occupations, with law enforcement work being ranked among the top-five most stressful occupations world-wide (Dantzer 1987; Liberman, Best et al. 2002). Organisational stressors such as heavy workloads, inadequate support, staff shortages and poor communication are considerably more prevalent and consistently more problematic than acute (e.g., attending accident scenes) operational stressors (e.g., Biggam, Power et al. 1997; Brough 2004; Buker and Wieko 2007).

The Demand-Control-Support (DCS) Model

The DCS model is one of the most widely used models underpinning occupational research on employee stress and wellbeing (Fox, Dwyer et al. 1993). The initial demand-control model proposed that the risk of psychological and physical illness due to strain increases with increasing demands and is ameliorated to some extent by the level of job control exercised by the employee (Karasek, Baker et al. 1981). The demand-control model was later expanded to include the social support available to the individual (Karasek and Theorell 1990). High strain jobs therefore represent those situations where the demands are not matched by adequate levels of decision-making authority and/or support from supervisors and colleagues. Further, the DCS has been found to have strong cross-occupational versatility and is relevant to a range of professional groups, including law enforcement and other emergency service personnel (Karasek and Theorell 1990).

Organisational Fairness

The psychological contract refers to a set of unwritten agreements about what one party expects to give and receive from the other (Robinson 1996; Robinson and Morrison 2000) and can cover a range of issues including promotional opportunities, training and development and the level of decision-making responsibility that the employee will receive (Turnley and Feldman 2000). Breaches in psychological contract are relatively common and are associated with a range of negative outcomes including reduced employees’ trust, higher levels of job dissatisfaction, reduced commitment to the organization, declining levels of in-role and extra-role performance and increased employee turnover (Robinson and Morrison 2000). However the fall-out associated with contract breaches is moderated by perceptions of fairness. The effects of fairness have been documented in meta-analyses (Cohen-Charash and Spector 2001; Colquitt 2001) and reviews (Conlon et al., 2005). Fairness is relatively underrepresented in organisational behaviour research, especially in studies of performance, and OCBs (Colquitt, Conlon et al. 2001). The exact relationships between different aspects of fairness and performance are confused and sometimes contradictory (see Colquitt, Conlon et al. 2001). The positioning of fairness as a dependent variable obstructs fairness’s potential for explaining people’s behaviour in organisations (Greenberg, 1990). Subsequently, we investigate fairness as an antecedent of other organisationally-relevant outcomes.

Perceptions of fairness are central to the assessment of contract breaches and heavily influence the severity of the outcomes (Rousseau 1995; Morrison and Robinson 1997). In
situations where an individual can distinguish unfair procedures and treatment that occurred along with the breach of the psychological contract, more intense feelings of anger and distress may result (Morrison and Robinson 1997). That is, higher levels of frustration and dissatisfaction result when the breach is accompanied by unfair procedures and treatment (Rousseau 1995).

There are strong indications that perceptions of fairness will influence how employees respond to other potentially stressful conditions, not just breaches in psychological contract. For example, a study involving Dutch managers found that participants were more satisfied in response to higher levels of job demands when they perceived their efforts to be fairly rewarded by the organization (Janssen 2001). In a similar study involving non-management employees, perceptions of fairness were found to moderate the relationship between job demands and innovative work behaviours (Janssen 2000).

Research on the impact of fairness on performance has provided mixed results. Increasing opportunities for procedural fairness did not improve performance in a study on performance appraisals (Kanfer et al., 1987). A positive significant relationship with interactional fairness, but not procedural fairness was found for university staff (Masterson, Lewis et al. 2000). Interpersonal was the only fairness explaining self-report performance in a textile products setting (Robbins, Summers et al. 2000). Speed, but not accuracy of performance was improved with distributive fairness in a study of four fairness dimensions (Weaver and Conlon 2003). These results imply there is not a simple relationship between fairness and in-role performance.

The aim of the current study is to determine the extent to which the DCS along with psychological contract breach (i.e. met expectations) and the four types of organisational fairness can predict stress and both in-role and extra-role performance. The hypotheses tested in this study are:

Hypothesis 1: The DCS components, met expectations, and fairness will predict stress.
Hypothesis 2: The DCS components, met expectations, and fairness will predict performance, as broadly conceived in terms of OCBs and IRB.

**Method**

**Sample**

All Police employees in the region were invited to participate in this survey and, overall 31% (n=582) of employees from Region A participated. To summarise the demographic characteristics of the sample, most (72%) of the respondents were male. The majority of respondents were aged 30 years and over, the largest number of respondents being 30 to 39 years of age (41%). In terms of tenure, there was a relatively even spread when grouped into 10-year categories (9 years or less, 10-19 years, 20 years or more), with approximately a third of respondents in each group. The majority of respondents reported that their highest level of education was secondary school (48%) whilst 29% had obtained a tertiary education and 17% had completed a certificate course (trade/non-trade). The vast majority of respondents (90%) were sworn members and the most common rank was Senior Constable or Leading Senior Constable (52%). After excluding surveys with missing values and outliers the regression analyses below are conducted on 504 cases.
Measures

Job Control/Discretion
Job control was measured using a nine item scale developed by Karasek (1985). Responses were recorded on a five-point likert scale ranging from ‘Strongly disagree’ (1) to ‘Strongly agree’ (5), with high scores indicating high levels of job control.

Workload/Job Demands
Job demands were measured using the quantitative workload scale developed by Caplan, Cobb, French, Harrison and Pinneau (1980). The scale assesses both physical and psychological demands and consists of eleven items measuring the amount of work performed by the employee and the pace that it is performed at. Responses were recorded on a five-point likert scale ranging from ‘Rarely’ (5) to ‘Very often’ (1). High scores on the scale indicate high job demands.

Support (work and non-work)
Social support from within the organisation and from non-work sources was measured using a scale developed by Etzion (1984). The scale contains nine items, seven of which require two answers, one relating to the employees work environment and the second to their life outside of work. The two remaining items relate to three specific roles people internal and external to work have in the employee’s life. Responses were recorded on a seven-point likert scale ranging from ‘Very little’ (1) to ‘Very much’ (7), with high scores indicating that the sources supported them to a greater extent.

Fairness
Fairness was measured using the justice measure developed by Colquitt (2001). The measure contains twenty items in total, with seven items measuring procedural justice, four measuring distributive justice, four measuring interpersonal justice and five measuring informational justice. Items were rated on a five-point scale according to the extent that various elements of fairness applied to the respondent, from ‘Very often’ (1) to ‘Rarely’ (5). For each of the four sub-scales, their respective items were summed to make a total score, with lower scores indicating higher levels of fairness.

Expectations
The Expectations measure was defined as general beliefs held by employees about what they will find in their job and the organisation. The Expectations variable was measured using five items from Robinson and Morrison’s (2000) ‘Perceived contract breach’ measure. These items were rated on a five-point scale, from ‘Disagree strongly’ (1) to ‘Agree strongly’ (5), according to the extent to which respondents agreed that their expectations had been met. After reverse-coding the two negatively orientated items, the item scores were summed to constitute an overall expectations score, with higher scores corresponding to expectations being met to a higher degree.

Psychological Distress
Psychological distress was measured using the Kessler Psychological Distress Scale (K10) developed by Kessler and Mroczek (1994), which contained 10 items. Respondents rated each item on a five-point likert scale, ranging from ‘All of the time’ (1) to ‘None of the time’ (5). After reverse coding all items, the ten items were summed to form an overall psychological
distress score with higher scores indicating higher levels of distress. Psychological distress was defined as the presence of non-specific psychological distress symptoms such as feelings of anxiety or depression employees had experienced in the 30 days prior to them completing the survey.

**Performance**

To operationalise performance both in-role and extra-role behaviours were measured. More specifically, those behaviours that (i) benefit the organisation in general (OCB-O) (ii) immediately benefit individuals and indirectly through this benefit the organisation (OCB-I) and (iii) based on performance of specified in-role-behaviours (IRBs). These behaviours were measured using the 21-item scale developed by Williams and Anderson (1991). Each subscale contained seven items that were measured on a five-point likert scale, ranging from ‘Disagree strongly’ (1) to ‘Agree strongly’ (5). Higher scores for each of the behaviour subscales indicated higher levels of that behaviour.

**Results**

**Psychological Distress**

The level of psychological distress within Region A was compared to respondents from all regions as well as the norms developed by the Australian Bureau of Statistics in their 2004-2005 National Health Survey (ABS 2006) and is presented in Figure 1 below.

![Figure 1. Comparison between Australian Norms and Region A on levels of psychological distress.](image)

Figure 1 indicates that there were a higher percentage of Region A’s employees in the High and Very High Categories of psychological distress compared to the ABS sample norms, whilst there were a lower percentage of Region A’s respondents in the low category. When compared to respondents from all Region As, Region A’s respondents showed a slightly different pattern of results, there were less Region A respondents in the Moderate through to Very High categories of distress, whilst there were nearly 10% more respondents in the Low category. These results suggest that Region A employees are at a slightly lower risk of
psychological distress than regional employees generally, however, the risk of psychological distress was still higher than the general population.

Further analyses were undertaken to identify the specific working conditions that are associated with the reported levels of psychological distress within Region A. These analyses are reported in Table 1 below. Across the regression analyses, the first step contained job control, workload, support at work and support outside work. The second step contained a measure of expectations (i.e. the extent to which expectations were fulfilled), whilst the third step included the four fairness subscales (procedural, distributive, interpersonal and informational fairness).

Table 1. Summary of Hierarchical Regression Analysis for Variables Predicting Psychological Distress.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Progressive R² adj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Job control</td>
<td>-.19</td>
<td>.07</td>
<td>-.12**</td>
<td></td>
</tr>
<tr>
<td>Workload</td>
<td>.19</td>
<td>.05</td>
<td>.18***</td>
<td></td>
</tr>
<tr>
<td>Support at work</td>
<td>-.08</td>
<td>.03</td>
<td>-.12*</td>
<td></td>
</tr>
<tr>
<td>Support outside work</td>
<td>-.15</td>
<td>.03</td>
<td>-.23***</td>
<td></td>
</tr>
<tr>
<td>Step 2 Expectations</td>
<td>-.08</td>
<td>.08</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>Step 3 Procedural fairness</td>
<td>.00</td>
<td>.07</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Distributive fairness</td>
<td>.08</td>
<td>.09</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Interpersonal fairness</td>
<td>-.33</td>
<td>.12</td>
<td>-.17**</td>
<td></td>
</tr>
<tr>
<td>Informational fairness</td>
<td>.01</td>
<td>.09</td>
<td>.01</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05, **p<.01, ***p<.001

Performance
Three subscales of performance, with an emphasis on organisational citizenship behaviours (OCBs), were included in the survey. These included, OCB–O, OCB–I and IRBs. Due to the inability of the predictor variables to explain adequate or significant amounts of variance in the OCB–O and IRB scales, only the results of the regression with OCB–I as the outcome variable is presented below in Table 2.

Table 2. Summary of Hierarchical Regression Analysis for Variables Predicting OCB–I.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Progressive R² adj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Job control</td>
<td>.16</td>
<td>.05</td>
<td>.14**</td>
<td></td>
</tr>
<tr>
<td>Workload</td>
<td>.19</td>
<td>.04</td>
<td>.24***</td>
<td></td>
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<tr>
<td>Support at work</td>
<td>.09</td>
<td>.03</td>
<td>.18**</td>
<td></td>
</tr>
<tr>
<td>Support outside work</td>
<td>.04</td>
<td>.02</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Step 2 Expectations</td>
<td>.03</td>
<td>.06</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Step 3 Procedural fairness</td>
<td>-.08</td>
<td>.05</td>
<td>-.08</td>
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<tr>
<td>Distributive fairness</td>
<td>-.10</td>
<td>.07</td>
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<td>Informational fairness</td>
<td>-.04</td>
<td>.07</td>
<td>-.04</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Discussion
The results of these analyses suggest that the demand-control-support model has great utility to identify those working conditions that are affecting the strain and, to a lesser degree, the behaviours of Region A employees. Overall the results indicate that employees who reported low levels of job control, support at work, support outside work and interpersonal fairness along with heavier workloads also reported high levels of psychological distress. The measures in the first step (i.e. job control, workload, support at work and support outside work) accounted for 18% of the variance, the addition of expectations in the second step did not improve prediction, whilst the addition of the four fairness subscales only improved prediction by not quite 2%.

Table 2 indicates that job control, workload and support at work were significant predictors of OCB–I in Region A. These results indicate that employees who reported high levels of job control and heavy workloads along with greater support from work sources also reported high levels of OCB–I. The finding that heavier workloads were associated with higher levels of OCB–I is surprising, however, it is important to note that regression analyses do not indicate cause and effect relationships (i.e. this result does not indicate that heavier workloads create greater levels of OCB–I). The OCB scales measure the extra-role behaviours of employees, thus a higher OCB–I score could indicate that an employee is more likely to take on additional tasks or responsibilities with regards to their fellow employees, therefore increasing workloads. Overall the first step of the model explained 13% of the variance in OCB–I, the addition of expectations or the four fairness scales did not significantly improve the prediction.

Overall the multiple regressions presented above indicate that the measures of demand, control and support are powerful predictors of stress and some additional outcome variables. The results of the regression analyses provide firm support for the additive effects of the DCS variables and strongly suggest that job stress investigations should be underpinned, at least in part, by the three component variables (job demands, job control and social support). Social support, both work-based or non-work, was particularly prominent in the results and adds weight to research showing strong associations between the advice, assistance and feedback received from colleagues and supervisors and employee wellbeing (e.g. Swanson and Power 2001; De Lange, Taris et al. 2004). At a practical level, these findings suggest that an important way of building healthier and more productive working environments is to closely monitor the support needs of employees and ensure they have the guidance, feedback and assistance required to meet performance expectations. This strategy is particularly important in an organization or work unit that has experienced significant organizational change and where employees are likely to be unsure or anxious about a range of matters, including work goals, job content and future role in the organization (Balogun and Johnson 2004).

**Practical Implications**

The relatively “soft” nature of two of the key predictors in the regressions reported above – employee discretion and social support - in the context of an occupation that has been historically very structured and based on command-and-control may be seen as potentially threatening. Subsequently, we felt that a notable portion of these results should be devoted to explaining the practical implications of these results, including providing concrete examples of applications.

**Increasing Employee Control**
The results found that there was a significant relationship between employees’ perceived level of job control (i.e. involvement in decision-making and skill discretion) and the significantly-regressed outcome variables. Lower levels of control were associated with heightened psychological distress. Action should be taken to ensure that the level of employee involvement or control closely matches the demands and pressures faced by employees. At a group level, participatory decision-making such as semi-autonomous work teams and democratic leadership styles can help enhance people’s sense of influence and control. Autonomous or semi-autonomous work teams can give members the opportunity to have meaningful input into how work is organised, to generate and exchange ideas on how to tackle emerging problems and to work together to ensure that unit goals are achieved. At a more individual level, boosting employee involvement means encouraging and enabling employees to have greater decision-making latitude over the skills and methods they use to complete their work and to provide them with a level of decision-making authority that is commensurate with their responsibilities.

Strategies designed to enhance job control and social support should not be seen as separate initiatives that require independent action. In practice, efforts to improve job control and social support can be mutually reinforcing. The overall purpose of functional, needs-based social support is to provide individuals with the information, feedback or assistance that can help them deal with the problems they face. In the case of tight deadlines and work overload, the ideas and assistance provided by peers or supervisors can help employees complete time consuming tasks more efficiently and effectively. Likewise, specific feedback from supervisors can give employees a clearer understanding of their work performance and what they need to do to achieve key objectives. In essence, high levels of support represent a critical resource that enables individuals to exert greater control over their environment. Just as social support can enhance job control, mechanisms for improving job control can also boost worker support. For example, semi-autonomous work teams give people the opportunity to exchange ideas, obtain feedback, identify each other’s needs and share concerns. If properly designed and facilitated, such structures then increase opportunities for giving and receiving effective social support.

Enhancing Social Support
A further key finding from the overall survey results was the strong influence that work-based support had on both reported regressions and the impact of non-work support on stress. These results suggest that significant improvements in overall health and productivity could be achieved by ensuring that staff receive adequate levels of support. The results also suggest that those people who are most vulnerable to experiencing high levels of psychological distress, and reduced productivity are those people who experience low levels of support from supervisors and colleagues.

The prominence of social support in this study is consistent with previous research showing that the support received from supervisors and colleagues is central to enhanced wellbeing, psychological health and satisfaction. Social support can be broken down into four specific forms of support: emotional (e.g. showing empathy and trust); informational (e.g. providing advice and guidance); instrumental (e.g. helping a colleague complete their work), and; appraisal support (e.g. providing performance feedback). Each of these forms is essential for ensuring that the support received by employees closely matches their needs.
Supervisors and more senior personnel are a particularly valuable source of support since they are often the only ones who have the authority and the knowledge to address the specific work-related needs of employees. Enhancing the people-management skills of managers and team-leaders and ensuring that people with supervisory responsibilities have the ability to meet the support needs of employees is a crucial first-step to enhancing employee attitudes and behaviours. Developing management/leadership training programs and feedback systems that help managers enhance their social support skills have been shown to improve the health and satisfaction amongst employees.

Co-worker support is another area where social support could be improved. Implementing formal programs such as buddy systems or job shadowing can help employees become familiar with their current or future role thus helping to reduce the stress associated with role ambiguity, task uncertainty and other task/role related stressors.

Limitations
The limitations that need to be kept in mind when assessing the results of the present study include the cross-sectional study design and the reliance on the subjective views of the participants. The ability to develop firm conclusions regarding stressor-fairness interactions would be strengthened by a longitudinal study. In relation to concerns regarding common-method variance, some reassurance is gained from research that has shown a high correlation between expert ratings of job conditions and subjective assessments (Spector 1992).

Conclusion
The success of the DCS model in predicting the stress outcome variable highlights the value of applying this parsimonious generic model to stress context, especially in a policing environment. Further, the results suggest that the stress associated with policing can be reduced by ensuring that employees have adequate levels of support from supervisors and colleagues and making sure that employees’ level of job control is commensurate with the pace, volume and complexity of demands they face. Conversely, the DCS model had limited utility in predicting OCB-O and IRB. This study also found that the inclusion of expectations and fairness made some contribution, but may not have been a worthwhile extension of the DCS. Future research may wish to extend this approach and incorporate other social exchange constructs (e.g., perceived organizational support) in studies of employee wellbeing.

References


