

Predicting Police Job Satisfaction and Turnover Intentions: The role of social support and police organisational variables

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The retention of operational staff, particularly females, within the police services and other male-dominated occupations, has received some recent attention. The introduction of organisational practices which aim to reduce inter-domain conflict, is a current intervention employed to reduce turnover levels. The importance of adequate supervisor support is one such intervention and has produced considerable recent interest. This paper tests the influence of organisational variables (sexual harassment) and individual variables (perceptions of social support) upon job satisfaction and turnover intentions, using Structural Equation Modelling (SEM) analysis. Four hundred male and female New Zealand police officers were invited to participate in a longitudinal research project, involving the completion of two questionnaire surveys. The experiences of harassment and the quantity of leave taken were associated with turnover intentions. Supervisor support was a strong predictor of job satisfaction and also an indirect predictor of turnover intentions. Intrinsic job satisfaction was an especially strong direct predictor of turnover intentions, although only within the cross-sectional analyses. The results also support the distinction between the two types of job satisfaction, intrinsic versus extrinsic, in the context of turnover research. The implications regarding the training of police supervisors in order to improve (female) retention levels, are discussed.

Employee turnover occurs when an individual exits an organisation either voluntarily or involuntarily. Although some organisational turnover is unavoidable, and may even be desirable, voluntary turnover is difficult to predict and can reduce the overall effectiveness of an organisation (Smith & Brough, 2003).

Turnover intentions

Turnover intentions refer to an individual's estimated probability that they will leave an organisation at some

point in the near future. Turnover intentions are identified as the immediate precursor to turnover behaviour (Mobley, Horner, & Hollingsworth, 1978; Tett & Meyer, 1993). The identification of the variables contributing to turnover intentions is considered to be effective in reducing actual turnover levels (Maertz & Campion, 1998).

Three primary groups of variables have been identified as influencing turnover intentions (a) organisational variables, such as job satisfaction,

occupational stress and gender discrimination, (b) individual demographic variables, including gender, marital status and tenure, and (c) external variables, such as the availability of alternative employment (Cotton & Tuttle, 1986). The relationship between turnover intentions and organisational variables is of particular importance, with considerable attention being applied to low job satisfaction and high psychological strain levels (George & Jones, 1996; O'Driscoll & Beehr, 1994). For example, in a longitudinal investigation of Israeli police officers (80% male), Koslowsky (1991) found that both job satisfaction and organisational commitment predicted turnover intentions over time (see also Vandenberg & Nelson, 1999).

In terms of the individual demographic variables, female employees generally have higher turnover levels than males, while married individuals tend to leave their employment in lower numbers, as compared to other employees (Cotton & Tuttle, 1986). The association between married status and gender in turnover decisions has been subject to some recent evaluation. Mano-Negrin and Kirschenbaum (2002) for example, compared the turnover decision-making process occurring in both married male and female employees. These authors identified that the turnover decision-making process is interdependent on the spousal conditions of employment, and involves other family and economic

considerations also. However, Mano-Negrin and Kirschenbaum (2002) also suggested that the turnover decision-making process for both males and females is primarily dependent upon their own work-related factors. Similarly, Martin (1989) suggests that female turnover is influenced by additional work stressors experienced by some women (as compared to their male colleagues), most noticeably gender discrimination. This point has been confirmed in various male dominated occupations, including the police services (Halford, 1993; Nelson & Burke, 2002).

Job satisfaction

Job satisfaction is a highly researched work attitude and is commonly defined as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1304). Job satisfaction is associated with various organisational and individual outcomes (Judge, Parker, Colbert, Heller, & Ilies, 2001). For example, Violanti and Aron (1994) found that high levels of job satisfaction were associated with improved psychological well-being, in their research with police officers. The relationship between low levels of job satisfaction and increased turnover behaviours is consistently produced (O'Leary-Kelly & Griffith, 1995). However, the associations between job satisfaction and actual turnover behaviour are generally only moderate, and have also produced some mixed findings. The instability of job satisfaction over time probably accounts for these moderate predictions of turnover (O'Driscoll & Brough, 2003; Paton, Jackson, & Johnston, 2003), although this point has rarely been formally tested.

Social support

Social support is an important resource that has been associated with positive individual and organisational outcomes, especially in regards to the occupational stressor-strain relationship (Beehr & McGrath, 1992). Social support is typically derived from a variety of sources (i.e. work colleagues, supervisor, family and friends). However, the different sources of support have only recently

been specifically tested (Brough & Kelling, 2002; Voydanoff, 2002). For example, Eisenberger, Stinglahamber, Vandenberghe, Sucharski, and Rhoades (2002) report that supervisor support is negatively associated with turnover: i.e. low levels of supervisor support are related to higher turnover intentions. Direct associations have also been identified between social support and job satisfaction, absenteeism, and turnover (Perrewe & Carlson, 2002; Viswesvaran, Sanchez, & Fisher, 1999). The influence of supervisor support in this regard has received some particular recent attention, especially in relation to reducing the consequences of inter-domain conflict (Brough & O'Driscoll, *in press*; Voydanoff, 2002).

The police services

Over the past ten years or so, the representation of women officers within most police services has shown a marked increase, however, female officer numbers remain significantly low as compared to male officers. For example, female officers in the New Zealand Police (NZP) represent approximately 15% of the sworn police population (Robinson, 2002). The Queensland Police Service in Australia consists of 25% of female (sworn) officers, with approximately 30% of current recruits being female (Queensland Police Service, 2002). Similar personnel statistics are reported for European and North American Police Services.

The consequences of gender discrimination and sexual harassment in police services receive regular attention and are thought to be associated with the lack of female representation (Brough, *in press*). Brown, Campbell, and Fife-Schaw (1995) suggest that gender discrimination is an occupational stressor that impacts on the psychological well-being of female officers "over and above the profile of organisational and operational stressors that adversely affect all police officers" (p. 226). Poole and Pogrebin (1988) note that gender discrimination is associated with female police officers reducing their job expectations, particularly in relation to promotion aspirations. Miller (1998) also observes

that female police officers generally leave with less accumulated service than their male colleagues. The average length of service for officers leaving the NZP is approximately 9.76 years (males) compared to 4.71 years (females) (Miller, 1998).

A number of organisational practices have been utilised to encourage the recruitment and retention of females within the police services. Organisational equity programmes of various types exist and are becoming increasingly ingrained. Both the New Zealand Police and Fire Services have employed targeted female recruitment campaigns, as do a number of such Services internationally (Brough & Smith, 2002). Additionally, the NZP has recently introduced a series of flexible employment options designed to increase female employment participation. These employment options include part-time employment and a number of support and mentoring schemes for female officers (Robinson, 2002). Such interventions have received little evaluation in regards to their effectiveness, particularly in terms of their impact upon the retention of female police officers.

Additionally, it is suggested that the recent interest in the value of supervisor support may also have implications for staff retention in the police services. Some acknowledgment of this point currently exists, for example, in police sergeant training, but is generally targeted at traumatic stress outcomes (Stephens & Long, 2000). The value of supervisor support in regards to both individual outcomes (job satisfaction) and organisational outcomes (turnover intentions) of police officers has received minimal empirical evaluation.

Research aims

This paper investigates the influence of three sources of social support and the impact of police organisational variables relating to rank, experiences of sexual harassment and the opportunities for career advancement, upon police officers' turnover intentions. These relationships will be simultaneously tested via Structural Equation Modelling (SEM) analysis. It is hypothesised that:

H1: The perceived discrimination of personal career advancement opportunities and the experiences of sexual harassment at work, will be adversely associated with the two dependent variables (i.e. resulting in low levels of job satisfaction and high levels of turnover intentions).

H2: The three sources of social support will have favourable associations with the two dependent variables (i.e. resulting in high levels of job satisfaction and low levels of turnover intentions).

H3a: The experience of sexual discrimination will positively predict turnover intentions.

H3b: This relationship (H3a) will be stable over time.

H4a: Job satisfaction will be a direct negative predictor of turnover intentions.

H4b: This relationship (H4a) will be stable over time.

Method

Participants and procedure

Four hundred officers from the New Zealand Police were invited to participate with this research. The national sample consisted of a random selection of 200 female and 200 male officers from various ranks within this Service. All participants were sworn police officers. The participants were invited to complete two identical self-report questionnaires, with a four month time lag. The questionnaires were confidential and were returned directly to the researchers.

Respondent characteristics

At Time 1, 229 completed questionnaires were returned, producing a response rate of 57%. 52% of the respondents were female. The majority of the respondents were New Zealand European (87%), while 11% were New Zealand Maori or Pacific Islanders. 73% of the respondents were either married or in a de facto relationship and a greater number of female officers reported being single (29%) as compared to their male colleagues (10%). The average age of the respondents was 34 years (females) and 38 years (males). The respondents' tenure ranged from six months (1%) to

over 30 years (2%) with the average tenure being 8 years (females) and 12 years (males). 67% of the female respondents were at the rank of Police Constable, compared to 43% male Constables.

At Time 2, 169 completed questionnaires were returned, producing a response rate of 43%. Of these respondents, 50% were female. The remaining characteristics of the Time 2 respondents reflect the characteristics reported for Time 1: no significant differences between the two samples were identified. The research respondents were considered to be generally representative of the NZP population (in comparison with the figures available in the NZP annual report: Robinson, 2002).

Measures

Social support: Social Support was measured using Caplan, Cobb, French, Van Harrison, and Pinneau's (1975) Social Support Scale. This measure includes three subscales: *social support from supervisor*; *social support from partner, family and friends*; and *social support from work colleagues*. The measure asks the respondents to identify the extent to which four items of support are received from each of these three sources. Example items include: *How easy is it to talk to the following people?* and *How much are each of the following people willing to listen to your personal problems?* The participants responded on a five-point Likert scale where 0 = *don't have any such person*, 1 = *not at all* to 4 = *very much*. High scores indicate high levels of social support. The measures' internal consistency was tested with Cronbach's alpha statistic. The reliability coefficients produced by this research for the three social support subscales consisted of $\alpha = .90$ (supervisor), $\alpha = .86$ (family), and $\alpha = .84$ (colleagues).

Job satisfaction: Job satisfaction was measured using the 15 item Warr, Cook, and Wall (1979) instrument. The measure consists of two subscales: *intrinsic satisfaction* (seven items) and *extrinsic satisfaction* (eight items). The measure requires the respondents to indicate how satisfied they are with each of the fifteen job items. Example

items include: *The recognition you get for good work* (intrinsic) and *The way the organisation is managed* (extrinsic). The participants responded to each item upon a seven point Likert scale, where 1 = *extremely dissatisfied* and 7 = *extremely satisfied*. High scores represent a high level of satisfaction.

The job satisfaction measure was subject to a confirmatory factor analysis (CFA) to evaluate the two factor structure. This CFA was conducted upon the Time 1 data (i.e. $n = 229$). Five items were deleted from this measure during the CFA specification searches to produce a better fitting model. The resulting model produced an acceptable goodness-of-fit: $\chi^2 = 52.46$, $df = 34$, $\chi^2/df = 1.54$, GFI = .92, PGFI = .57, RMSEA = .07 (these goodness-of-fit indices are discussed in detail in the following statistical analysis section). The resulting model was also tested with the Time 2 data and as expected, also produced an acceptable goodness-of-fit: $\chi^2 = 65.87$, $df = 34$, $\chi^2/df = 1.94$, GFI = .89, PGFI = .55, RMSEA = .08. This revised measure was therefore deemed suitable for inclusion in this research (further details of this CFA (i.e. specification details) are available from the first author on request).

The resulting extrinsic job satisfaction subscale consisted of four items and the intrinsic subscales consisted of six items. The internal consistency of each subscale consisted of $\alpha = .76$ (intrinsic) and $\alpha = .61$ (extrinsic). The internal reliability of each measure was therefore only moderate, with the extrinsic subscale being particularly low. These internal consistency results reflect those of the original (15 item) measure as reported by Mullarkey, Wall, Warr, Clegg, and Stride (1999) in their bench-marking manual: $\alpha = .75$ to $\alpha = .90$ (intrinsic) and $\alpha = .64$ to $\alpha = .84$ (extrinsic).

Turnover intentions: Turnover intentions were measured using a three item measure designed by this research. The items were: *How frequently have you seriously considered leaving your job in the past six months?*, *How likely are you to leave your job in the next six months?* and *How often do you actively look for jobs outside the Police Service?* The items were elicited from qualitative interviews with police managers and

police officers and from previous research with this population (Brough & Mansell, 2001). The face validity of these items was achieved with the assistance of a Human Resources manager from the NZP. The manager examined these three items and agreed that they were appropriate to be asked, were appropriately worded for this population and were generally relevant to this research. The internal structure of this (time 1) measure was tested through a principal components analysis (PCA). The PCA produced one component accounting for 74% of the variance. The examination of the inter-item correlations was found to be acceptable, with associations ranging from $r = .55$ to $r = .64$. The three item measure was retained by this research, due to the acceptable inter-item correlations and the desire to avoid a single item measure of turnover intentions. The participants responded to each item on a five-point Likert scale where 1 = *not at all* and 5 = *a great deal*. High scores indicate greater turnover intentions. The measure produced an acceptable internal consistency across the two sampling times ($\alpha = .79$ and $\alpha = .82$).

Opportunities for career advancement: A four item scale measuring the perceived difficulties in achieving promotion and accessing training, as compared to male and female colleagues, was devised for this research. This measure was constructed in an attempt to quantitatively evaluate any gender discrimination occurring with these two organisational opportunities (promotion and training access). The items were elicited from qualitative interviews with police managers and police officers and included: *How difficult is it for you to achieve promotion compared to other females officers?* and *How difficult is it for you to access training compared to other females officers?* The two items were repeated (interspersed) in relation to male officers.

The internal structure of this measure was also tested through a principal components analysis (PCA). The PCA produced one component accounting for 70% of the variance. The inter-item correlations produced associations ranging from $r = .43$ to

$r = .76$. Items numbers one and three (the two items comparing female officers) produced the highest association ($r = .76$). The four item measure was retained by this research for descriptive analysis purposes only (i.e. for correlation analysis but was not included within the SEM). The participants responded to each item on a five point Likert scale where 1 = *not at all difficult* and 5 = *very difficult*. High scores indicate greater career advancement difficulties. The measure produced an acceptable internal consistency ($\alpha = .86$).

Sexual harassment: Sexual harassment was measured by a single dichotomous question: *Have you personally experienced any behaviours that you would define as sexual harassment?* The participants responded upon a Yes/No format.

Demographic variables: The respondents were asked to provide information regarding their gender, ethnicity, age, marital status, rank, tenure in their current rank and the quantity of self-report leave (paid and unpaid) taken over the past two years. The actual leave quantities were converted into monthly bands for the purpose of this research.

Statistical analyses

Prior to the statistical analyses, the data was examined for outliers and these cases were excluded from the analyses. The Time 1 and Time 2 data sets were merged on matched variables, producing a longitudinal data set of 115 useable cases. Cases missing more than half of the variables associated with each standardised measure were deleted from the analysis, resulting in a longitudinal data set of $N = 102$.

In SEM analyses, the choice of which goodness-of-fit statistics to report is somewhat arbitrary. Following the recommendations in the literature, this paper reports the following fit measures: chi square (χ^2), χ^2/df , Goodness of Fit Index (GFI), Parsimony Goodness of Fit Index (PGFI), and Steiger's Root Mean Square Error of Approximation (RMSEA) (see Brough, O'Driscoll, & Kalliath, *in press*; Byrne, 2001). A large and significant chi square is typically an indication of poor model fit. However, it has been acknowledged

that the chi square statistic is sensitive to sample size and therefore the use of alternative fit statistics (such as the GFI and PGFI) has been recommended (Avolio, Bass, & Jung, 1999; Loehlin, 1998). An improvement on the chi square statistic is obtained by dividing the chi square by the degrees of freedom, to produce a *relative* chi square statistic (χ^2/df) (Wheaton, Muthén, Alwin, & Summers, 1977). The closer this statistic is to unity (1) the better the fit, with results of up to five being an indication of a reasonable fit, although a score of less than two is generally preferred (Marsh & Hocevar, 1985).

Results

Descriptive statistics and correlations

The means, standard deviations and alpha coefficients for the research variables are illustrated in Table 1. The extrinsic job satisfaction subscale produced the lowest level of internal consistency, in comparison with the other research variables ($\alpha = .61$), suggesting this measure has only a moderate level of internal reliability. The remaining research variables produced acceptable levels of internal consistency.

Neither gender, rank, or marital status, were significantly associated with either job satisfaction or turnover intentions. Tenure was positively associated with turnover intentions at Time 1 only. The amount of leave taken was positively associated with turnover intentions at both T1 and T2, and negatively associated with both job satisfaction subscales. The opportunity for advancement was negatively associated with extrinsic job satisfaction and with turnover intentions. Finally, both intrinsic and extrinsic job satisfaction produced significant negative associations with the two turnover criterion. Internal job satisfaction showed a particularly strong association with turnover intentions at both Time 1 ($r = -.43$, $p < .001$), and Time 2 ($r = -.40$, $p < .001$). There was a significant association between the turnover intentions at T1 and T2 ($r = .66$, $p < .001$).

Table 1. Scale descriptives and intercorrelations among variables

	Gender	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	M	SD
2. M status	-.20**	-													2.64	2.30
3. Rank	-.20**	-.08	-												2.66	1.54
4. Tenure	-.29**	.15*	.74***	-											1.67	1.23
5. Leave	.26***	.06	-.01	.02	-										-	-
6. Harassment	.44***	-.07	.07	-.03	.17**	-									-	-
7. Advancement	.07	.01	-.01	-.09	.03	.06	(.86)								9.42	3.45
8. Supervisor support	.07	-.14*	-.21**	-.17**	-.08	-.04	-.01	(.90)							11.26	3.66
9. Family support	-.11	.01	.02	-.00	.16*	.06	-.02	.10	(.86)						14.74	1.82
10. Colleagues support	-.00	-.14*	.15*	-.14*	-.08	-.07	-.16*	.46***	.20**	(.84)					12.04	2.79
11. Extrinsic job satisfaction	-.02	.05	-.06	-.04	-.34**	-.10	-.20*	.38***	-.00	.33***	(.61)				16.92	3.33
12. Intrinsic job satisfaction	-.01	-.06	-.03	-.06	-.36*	-.18	-.19	.38***	-.08	.28***	.64***	(.76)			27.45	5.06
13. Turnover T1	-.02	.05	.09	.17**	.27***	.23***	-.16*	-.24***	-.01	-.17**	-.33***	-.43***	(.79)		6.51	3.31
14. Turnover T2	-.05	.00	.03	.11	.33***	.09	.05	-.29**	.16	-.16-	.36***	-.40***	.66***	(.82)	6.28	3.19

Note. *p < .05; **p < .01; ***p < .001; Cronbach's alpha coefficients are depicted in parentheses along the diagonal; Gender dummy coded 0 = Male, 1 = Female; M Status dummy coded 0 = Single/Divorced, 1 = Married/Defacto; Harassment dummy coded 0 = No, 1 = Yes.

Predicting turnover

Prior to inclusion in the structural model, the three standardised measures (social support, job satisfaction and turnover intentions) were independently tested for the validity of their structures, via confirmatory factor analysis (CFA) using the AMOS software (Analysis of Moments Structure; Arbuckle, 1999). Adequate goodness-of-fit results were obtained for each measure, and the results across time were very similar (as would be expected, since Time 2 is a subset of the Time 1 respondents). Table 2 presents the (Time 1) results for the three standardised measures. It can be observed that the social support measure produced the most borderline fit statistics (i.e. a χ^2/df result of above 2, a GFI below .9, a PGFI below .5, and a RMSEA result greater than .05), indicating some further refinement of this measure is required. Details of the CFA procedure (e.g. the specification searches for each measure) are not reported here, but are available from the

first author upon request. This research utilised the CFA procedure reported in detail by Brough, *et al.*, (*in press*) and recommended by Byrne (2001).

The ability of the independent variables to predict turnover intentions was tested in a structural equation model using AMOS. The resultant model with its significant pathways is illustrated in Figure 1. The observed variables and the error terms associated with each latent variable are omitted from Figure 1 for clarity. Intrinsic job satisfaction was the only direct predictor of turnover intentions. Additional analyses suggested that this relationship appears to be situationally based (i.e. only occurs within the cross-sectional and not the longitudinal analyses), for this relationship was replicated within the Time 2 cross-sectional model: that is, intrinsic job satisfaction (time 2) was also the sole direct predictor of turnover intentions (time 2). Interestingly, the relationship between intrinsic job satisfaction (time

1) and turnover intentions (time 2) was not significant, indicating a lack of stability of this association, over the sampling times.

The experience of sexual harassment negatively predicted colleague social support, which in turn, was a strong predictor of supervisor support. Only supervisor support was a positive predictor of job satisfaction. Both harassment and social support had an indirect influence upon turnover intentions through intrinsic job satisfaction. The variable measuring family and friends social support produced no substantial direct or indirect relationships with turnover intentions, and hence was omitted from Figure 1. The structural model depicted in Figure 1 produced an acceptable statistical fit: χ^2 (df = 220) = 301.60, χ^2/df = 1.37, GFI = .82, PGFI = .55, and RMSEA = .06.

Discussion

Police specific variables

Gender was associated largely as expected with the police organisational variables. The female respondents produced significant relationships with both leave and harassment. Leave was also negatively associated with job satisfaction and positively associated with turnover intentions. These associations reinforce the observation that leave-taking is one of the forms of

Table 2. Goodness-of-fit statistics for each measure

Measure	Number of factors	χ^2	df	χ^2/df	GFI	PGFI	RMSEA
Social support	3	89.35	24	3.72	.84	.45	.16
Job satisfaction	2	52.46	34	1.54	.92	.57	.07
Turnover intentions	1	2.69	1	2.69	.98	.16	.13

employee withdrawal behaviour from an organisation (e.g. Paton, *et al.*, 2003). The current findings suggest that this behaviour is more commonplace amongst female officers within the NZP. However, the relationships between leave and both job satisfaction and turnover intentions were not strong enough to be included in the final structural model. Instead, the psychological, as opposed to the police organisational, variables were the primary predictors of these criterion measures. Harassment was the only police organisational variable to (indirectly) predict both job satisfaction and turnover intentions.

The results only partially support Hypothesis 1. Harassment was moderately associated with turnover intentions at Time 1 only, while advancement opportunities produced a small association with this criterion. Neither harassment nor advancement opportunities were substantially associated with job satisfaction or with turnover intentions over time. The experiences of sexual discrimination (through either experienced harassment or advancement difficulties), did not directly predict either job satisfaction or turnover intentions, and offer no support for Hypothesis 3a.

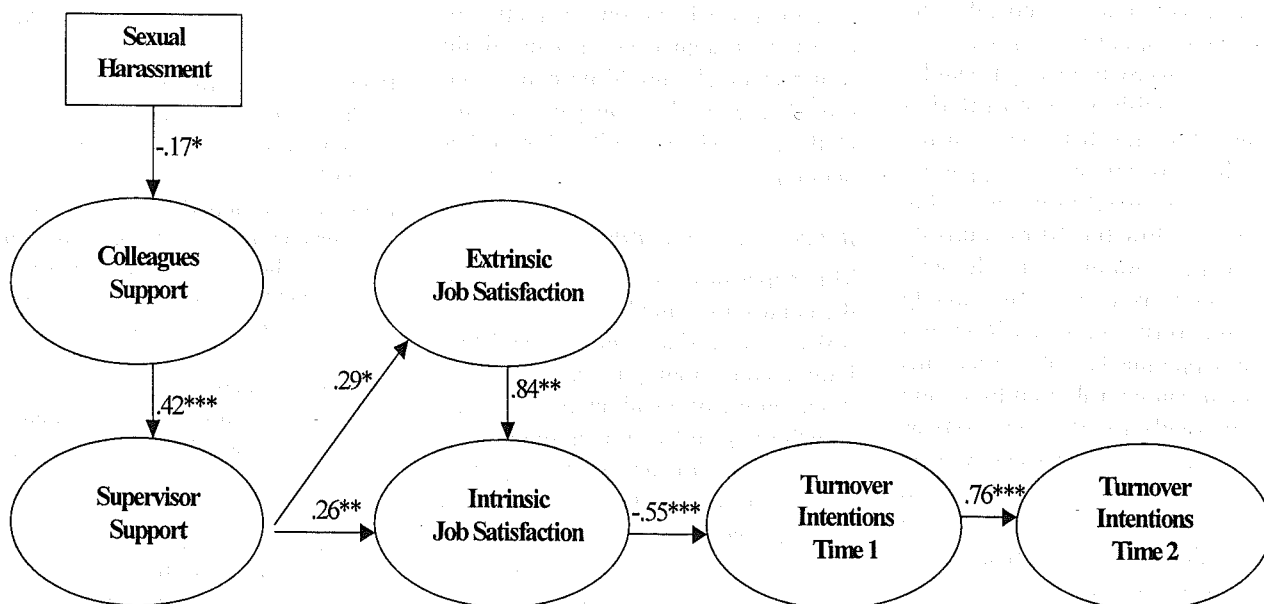
The lack of an association between gender and advancement opportunities is of interest and is perhaps a reflection of the increasingly ingrained status of equal opportunities procedures within the NZP. Comments produced from some qualitative interviews with the respondents suggested that a general equity in these procedures (training and promotion opportunities) were largely perceived (see Frame, 2003, for further details). Gender was fairly evenly distributed across the ranks within the quantitative sample, with the rank of Police Inspector being the highest rank sampled. It is suggested that different results between gender and advancement opportunities would be produced by a sample of more senior officers. The difficulties female police officers have experienced as they reach the higher organisational ranks have been documented (e.g. Brown & Campbell, 1994; Halford, 1993; Teixeira, 2002). This point would be of interest to test within the NZP and would perhaps provide a stronger indication of the effectiveness of the equal opportunity policies within the NZP.

The influence of social support

Supervisor support produced strong associations with job satisfaction and turnover intentions, supporting Hypothesis 2. The importance of adequate supervisor support for a number of organisational and individual outcomes has been recently recognised and research including specific measures of this source of workplace support (as opposed to generic measures of work social support) are now emerging (e.g. Brough & Kelling, 2002; Brough & O'Driscoll, *in press*; Greenglass, 2000). The current research reinforces these findings, particularly in relation to the direct prediction of job satisfaction levels.

Colleague social support was associated as expected with both job satisfaction and turnover intentions variables (except turnover time 2), but these relationships were weaker as compared to the same associations with supervisor support. Furthermore, colleague support was not a direct significant predictor of either criterion. No associations were identified between family social support and either job satisfaction or turnover intentions. Hypothesis 2 was therefore not verified as regards family support

Figure 1. The prediction of turnover by job satisfaction, work support and sexual harassment



Note. Significant standardised regression weights illustrated only; **p < .05, ***p < .001.

and was only partially confirmed in regards to colleague support.

Predicting turnover intentions over time

None of the Time 1 variables directly predicted Time 2 turnover, although leave, supervisor support, and job satisfaction all produced statistically significant associations with this criteria. No clear support for Hypotheses 3b or 4b was therefore produced by this research, indicating that the research variables were not direct predictors of turnover intentions over time. The mixed findings relating to the stable prediction of longitudinal turnover were discussed in the introduction. The results produced by the current research, fail to replicate Koslowsky's (1991) longitudinal relationship between job satisfaction and turnover intentions in his sample of Israeli police officers. The current research produced only an indirect relationship between intrinsic job satisfaction and turnover Time 2 within the SEM analysis, despite the existence of strong correlations between these variables (Table 1). One of the advantages of SEM analysis is the simultaneous estimation of multivariate relationships, including the residuals associated with each individual variable. SEM analysis is therefore considered to be more powerful than both bivariate correlation analysis and multivariate regression analysis.

It is also of interest to note that the differentiation of intrinsic and extrinsic job satisfaction produced largely similar associations within the correlation analysis, although differences in the size of the associations were apparent. However, the differentiation of the variables within the SEM analysis produced more informative results, with intrinsic job satisfaction alone directly predicting turnover intentions and partially supporting Hypothesis 4a. This is an important contribution to the job satisfaction and turnover discussions, as often no distinction is made between the specific types of job satisfaction within this literature. The current research reinforces the value of including this job satisfaction distinction (see also Brough, *in press*). Finally, the results produced by the current research also support the arguments for a situational-

specific relationship between job satisfaction and turnover intentions.

Research limitations

The relatively small number of respondents is of concern within this research. Thus additional SEM analyses specifically targeting sub-samples of the respondent population could not be explored. A greater response rate at Time 2 would also enable associations over time to be explored in more detail, for example through cross-lagged analysis. The necessity to delete cases with a large number of missing values from a data set, in order to meet the requirements of SEM analysis, merely emphasises the requirement for a large initial sample size.

The use of a single item measure within psychological research is a practice that is usually avoided. This is due to a number of established criticisms, most noticeably the inability to test the measure's internal reliability (Wanous, Reichers, & Hudy, 1997). However, recent evidence also suggests that the use of single item measures may, subject to specified conditions, be more robust than multiple item measures (Nagy, 2002). One of the advantages of single item measures, for example, is a higher level of face validity with organisational employee populations (Nagy, 2002). Despite this recent support, the single item measure of sexual harassment included in the current research is an acknowledged limitation. The inclusion of a multi-item measure of sexual harassment within future research should be considered (see Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997, for further details).

Implications and conclusions

This paper has successfully evaluated the contribution made by a number of police organisational variables, individual demographic variables, and three sources of social support upon job satisfaction and turnover intentions. The influence of supervisor support in the prediction of the two criterion measures confirms the importance of this source of support, as has been described in other occupations (e.g. Greenglass, 2002; Voydanoff, 2002). The findings reported here suggest that

these relationships are strongly relevant within the NZP and that training programs targeting effective supervisor support will influence both officer satisfaction and retention levels. The indirect influence of the experience of sexual harassment upon both job satisfaction and turnover intentions is also pertinent, and reflects similar associations reported by police officers elsewhere (Brown *et al.*, 1995; Poole & Pogrebin, 1988). These findings are of particular importance for the retention of women in policing, in terms of effectively accepting the initial female recruit to the team (e.g. Brough & Smith, 2002), as well as providing positive (often informal) assistance with external family demands (see Brough & O'Driscoll, *in press*). Finally, on a methodological note, this research provides a relevant addition to the current discussions concerning the relationship between job satisfaction and (longitudinal) turnover intentions, which typically utilise correlation/regression analyses. The use of SEM to assess these organisational psychology variables is to be encouraged.

References

- Arbuckle, J. L. (1999). Amos 4.0 [Computer software]. Chicago: Smallwaters.
- Avolio, B. J., Bass, B. M., & Jung, D. I. (1999). Re-examining the components of transformational and transactional leadership using the Multifactor Leadership Questionnaire. *Journal of Occupational and Organizational Psychology*, 72, 441-462.
- Beehr, T. A. & McGrath, J. E. (1992). Social support, occupational stress and anxiety. *Anxiety, Stress and Coping*, 5, 7-19.
- Brough, P. Comparing the influence of traumatic and organisational stress upon the psychological health of police, fire and ambulance workers. *International Journal of Stress Management* (*in press*).
- Brough, P. (2002). Female police officers' work experiences, job satisfaction and psychological well-being. *Psychology of Women Section Review*, 4, 3-15.
- Brough, P. & Kelling, A. (2002). Women, work and well-being: An analysis of the work-family conflict. *New Zealand Journal of Psychology*, 31, 29-38.
- Brough, P. & Mansell, A. (2001). *The occupational well-being of New Zealand*

- Emergency Service workers: Police Service feedback report.* Unpublished report. School of Psychology, Victoria University of Wellington, May.
- Brough, P. & O'Driscoll, M. Work-family conflict and stress. Chapter in Antoniou, A. and Cooper, C. (Eds.). *A Research Companion to Organizational Health Psychology*. Edward Elgar Publisher, (in press).
- Brough, P., O'Driscoll, M. & Kalliath, T. Confirmatory factor analysis of the Cybernetic Coping Scale. *Journal of Occupational and Organisational Psychology*, (in press).
- Brough, P & Smith, M. (2002). *Advancing the recruitment and retention of women within the New Zealand Fire Service.* Unpublished report. Athena Partners, Wellington, New Zealand.
- Brown, J. M. & Campbell, E. A. (1994). *Stress and policing: Sources and strategies.* John Wiley & Sons, Chichester.
- Brown, J. M., Campbell, E. A., & Fife-Schaw, C. (1995). Adverse impacts experienced by police officers following exposure to sex discrimination and sexual harassment. *Stress Medicine*, 11, 221-228.
- Byrne, B. M. (2001). *Structural equation modelling with AMOS: Basic concepts, applications, and programming.* London: Lawrence Erlbaum Associates.
- Caplan, R. D., Cobb, S., French, J. R. P., Harrison, V. R., & Pinneau, S. R. (1975). *Job demands and worker health: Main effects and occupational differences.* Washington, DC: US Department of Health, Education and Welfare.
- Cotton, J. & Tuttle, J. (1986). Employee turnover: A meta-analysis and review with implications for research. *Academy of Management Review*, 11, 55-70.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organisational support and employee retention. *Journal of Applied Psychology*, 87, 565-573.
- Fitzgerald, L.F., Drasgow, F., Hulin, C.L., Gelfand, J.J., & Magley, V.J. (1997). Antecedents and consequences of sexual harassment in organizations: A test of an integrated model. *Journal of Applied Psychology*, 82, 578-589
- Frame, R. (2003). Gender differences in the work experiences of officers in the New Zealand Police. Unpublished MSc thesis. School of Psychology, Victoria University of Wellington, New Zealand.
- George, J. M. & Jones, G. R. (1996). The experience of work and turnover intentions: Interactive effects of value attainment, job satisfaction, and positive mood. *Journal of Applied Psychology*, 81, 318-325.
- Greenglass, E. R. (2002). Work stress, coping, and social support: Implications for women's occupational well-being. In: Nelson, D.L. & Burke, R.J. (Eds). *Gender, work stress, and health.* Washington, DC, US: American Psychological Association. pp. 85-96.
- Halford, A. (1993). *No way up the greasy pole.* Constable, London.
- Judge, T. A., Parker, S., Colbert, A. E., Heller, D., & Ilies, R. (2001). Job satisfaction: A cross-cultural review. In: N. Anderson, D. S. Ones, H. K. Sinangil & C. Viswesvaran (Eds.). *Handbook of industrial and organisational psychology.* Sage, London.
- Koslowsky, M. (1991). A longitudinal analysis of job satisfaction, commitment, and intention to leave. *Applied Psychology: An International Review*, 40, 405-415.
- Locke, E. A. (1976). The nature and causes of job satisfaction. In: M. Dunette (Ed.). *Handbook of industrial and organisational psychology.* Consulting Psychologists Press, Palo Alto.
- Loehlin, J. C. (1998). *Latent variable models: An introduction to factor, path, and structural analysis.* (3rd edition). London: Lawrence Erlbaum Associates.
- Maertz, C. P. & Campion, M. A. (1998). 25 years of voluntary turnover research: A review and critique. *International Review of Industrial and Organisational Psychology*, 13, 49-81.
- Mano-Negrin, R. & Kirschenbaum, A. (2000). Spousal interdependence in turnover decisions: The case of Israel's medical sector employees. *Journal of Family and Economic Issues*, 21, 97-122.
- Marsh, H. W. & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First- and higher-order factor models and their invariance across groups. *Psychological Bulletin*, 97, 562-582.
- Martin, S. E. (1989). Women in policing: The eighties and beyond. In Kenney, D.J. (Ed). *Police and policing: Contemporary issues.* Praeger: New York.
- Mobley, W. H., Horner, S. O., & Hollingsworth, A. T. (1978). An evaluation of precursors of hospital employee turnover. *Journal of Applied Psychology*, 63, 408-414.
- Miller, I. (1998). *Attrition in the New Zealand Police: Proceedings of the disengagement summit.* New Zealand Police National Headquarters, Wellington.
- Mullarkey, S., Wall, T. D., Clegg, C. W., & Stride, C. (1999). *Measures of job satisfaction, mental health and job related well-being.* Institute of Work Psychology, University of Sheffield, England.
- Nagy, M. S. (2002). Using a single-item approach to measure facet job satisfaction. *Journal of Occupational and Organisational Psychology*, 75, 77-89.
- Nelson, D. L. & Burke, R. J. (2002). *Gender, work stress and health.* Washington: American Psychological Association.
- O'Driscoll, M. P. & Beehr, T. A. (1994). Supervisor behaviours, role stressors and uncertainty as predictors of personal outcomes for subordinates. *Journal of Organizational Behavior*, 15, 141-155.
- O'Driscoll, M. & Brough, P. (2003). Job stress and burnout. In O'Driscoll, M., Taylor, P., and Kalliath, T. (Eds). *Organisational Psychology in Australia and New Zealand.* Melbourne: Oxford University Press. Pp. 188-211.
- O'Leary-Kelly, A. M. & Griffin, R. W. (1995). Job satisfaction and organisational commitment. In: N. Brewer & C. Wilson (Eds.). *Psychology and policing.* Lawrence Erlbaum Associates: New Jersey.
- Paton, D., Jackson, D., & Johnston, P. (2003). Work attitudes and values. In O'Driscoll, M., Taylor, P., and Kalliath, T. (Eds). *Organisational Psychology in Australia and New Zealand.* Melbourne: Oxford University Press. Pp. 127-149.
- Perrewe, P. L. & Carlson, D. S. (2002). Do men and women benefit from social support equally? Results from a field examination within the work and family context. In: Nelson, D. L. & Burke, R. J. *Gender, work stress and health.* Washington: American Psychological Association.
- Poole, E. D. & Pogrebin, M. R. (1988). Factors affecting the decision to remain in policing: A study of women officers. *Journal of Police Science and Administration*, 16, 49-55.
- Queensland Police Service, (2002). *Annual Statistic Review 2001-2002.* Queensland Police Service, Brisbane, Australia.
- Robinson, R. J. (2002). *Annual report of the New Zealand Police for the year ended 30 June 2002.* New Zealand Police National Headquarters, Wellington.

- Smith, M. & Brough, P. (2003). Personnel recruitment and selection. In O'Driscoll, M., Taylor, P., & Kalliath, T. (Eds). *Organizational Psychology in Australia and New Zealand*. Melbourne: Oxford University Press. Pp. 31-55.
- Stephens, C. & Long, N. (2000). Communication with police supervisors and peers as a buffer of work-related traumatic stress. *Journal of Organizational Behavior*, 21, 407-424.
- Tett, R. P. & Meyer, J. P. (1993). Job satisfaction, organisational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *Personnel Psychology*, 46, 259-293.
- Teixeira, M. T. (2002). "Who protects and serves me?" A case study of sexual harassment of African American women in one U.S. law enforcement agency. *Gender and Society*, 16, 524-545.
- Vandenberg, R. J. & Nelson, J. B. (1999). Disaggregating the motives underlying turnover intentions: When do intentions predict turnover behavior? *Human Relations*, 52, 1313-1336.
- Violanti, J. M. & Aron, F. (1994). Sources of police stressors, job attitudes and psychological distress. *Psychological Reports*, 72, 899-904.
- Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, 54, 314-334.
- Voydanoff, P. (2002). Linkages between the work-family interface and work, family, and individual outcomes: An integrative model. *Journal of Family Issues*, 23, 138-164.
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single item-measures? *Journal of Applied Psychology*, 82, 247-252.
- Warr, P. Cook, J., & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, 52, 129-148.
- Wheaton, B., Muthén, B., Alwin, D.F. & Summers, G.F. (1977). Assessing reliability and stability in patent models. In D. R. Heise (Ed.), *Sociological methodology*. San Francisco: Jossey-Bass. pp 84-136.

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