

This article was downloaded by: [National Chiao Tung University 國立交通大學]

On: 24 April 2014, At: 19:02

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



The Service Industries Journal

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/fsij20>

Modelling job stress as a mediating role in predicting turnover intention

Mei-Fang Chen ^a, Chieh-Peng Lin ^b & Gin-Yen Lien ^a

^a Department of Business Management, Tatung University, Taipei, Taiwan, Republic of China

^b Institute of Business & Management, National Chiao Tung University, Taipei, Taiwan, Republic of China

Published online: 13 Oct 2010.

To cite this article: Mei-Fang Chen, Chieh-Peng Lin & Gin-Yen Lien (2011) Modelling job stress as a mediating role in predicting turnover intention, *The Service Industries Journal*, 31:8, 1327-1345, DOI: [10.1080/02642060903437543](https://doi.org/10.1080/02642060903437543)

To link to this article: <http://dx.doi.org/10.1080/02642060903437543>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Modelling job stress as a mediating role in predicting turnover intention

Mei-Fang Chen^a, Chieh-Peng Lin^{b*} and Gin-Yen Lien^a

^aDepartment of Business Management, Tatung University, Taipei, Taiwan, Republic of China;

^bInstitute of Business & Management, National Chiao Tung University, Taipei, Taiwan, Republic of China

(Received 1 April 2009; final version received 28 September 2009)

Turnover intention has been an important issue for decades since management has long recognized that low turnover intention of employees is helpful for consequently obtaining high organizational performance and avoiding the potential costs related to recruiting and training new employees. For that reason, this study proposed a research model of turnover intention based on Hackman and Oldham's [(1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16(2), 250–279.] job characteristics theory. The proposed research model is empirically tested using a survey of 255 employees from Taiwanese banks. Tests results of structural equation modelling provide evidence that role conflicts, role ambiguity, and role overload indeed have positive impacts on job stress. *Employees with higher levels of job stress* are more likely to think about leaving, while those perceiving more fairness of rewards are less likely. Implications for managerial administration and future research are discussed.

Keywords: job stress; turnover intentions; structural equation modelling; retail banking

Introduction

People's working lives are becoming increasingly stressful and job stress has become an important issue. Stressful work environments can lead to serious physical and emotional detrimental effects on employees (Bohle & Quinlan, 2000; Caplan, Cobb, French, Harrison, & Pinneau, 1975b; Greenberg & Baron, 2003; Robbins, 2001; Somers, 2009). When job stress disrupts a person's equilibrium, he/she often deviates from his/her normal behaviour patterns, which in turn affect their work outcomes (Jamal, 1990). In addition to decreased satisfaction, commitment, and productivity, severe dysfunctional job stress has been linked to increased turnover intentions and poor performance, which adversely impact a firm's bottom line (Bhuyan, Menguc, & Borsboom, 2005; Caplan et al., 1975b; Noblet, Rodwell, & Allisey, 2009; Sager, 1994; Spector, 2003).

Job stress, by definition, occurs when an individual perceives a mismatch between the demands imposed by the job and their ability to meet those demands (Williams et al., 2001). Considerable research over the last two decades has drawn attention for the need to recognize job stress in a wide set of occupations and professions. This indicates that some jobs are generally perceived as being more stressful than others. Under Taiwan's financial liberalization and internationalization, there are now over 50 commercial

*Corresponding author. Email: jacques@mail.nctu.edu.tw

banks and over 300 fishermen and farmers co-operatives for only over 23 million people. As such, the banking sector in Taiwan no doubt suffers from severe overcapacity and keen competition. To accelerate raising the financial industry's competitiveness, Taiwan's government is moving ahead in earnest to reform the financial system. Concrete measures by the Ministry of Finance include overhauling the financial services sector with new laws written into the Financial Institutions Merger Act, the Financial Holding Company Act, and the Financial Supervisory and Management Committee Act. Taiwan's government has especially striven to proceed with a financial institution mergers and acquisitions (M&A) plan by pushing firms to complement one another through different business lines or geographic strengths and reducing significantly their operational costs, which can be principally accomplished by closing competing branches and reducing personnel.

After a series of M&A activities in recent years, there are currently a total of 14 financial holding companies in Taiwan. M&A reorganization activities often prove to have a serious impact on the employees of acquired firms. The usual impact is a decrease in morale, motivation, and productivity leading to stress on workers and a high turnover rate caused by changes in human resource policies, downsizing, and layoffs. Through such diminishing job security circumstances, retail banking employees are really in high job stress positions. Job stress can be caused by environmental, organizational, and individual variables (Cook & Hunsaker, 2001; Matteson & Ivancevich, 1999; Monsen & Boss, 2009), of which organizational-based factors have been known to induce job stress for employees at the workplace (Greenhaus & Beutell, 1985). These factors are commonly termed as organizational stressors since they serve as agents that trigger the various stress reactions (Von Onciul, 1996).

The purpose of the present study is to test a mediating model appropriate for assessing the effects of workplace factors on turnover intentions via job stress experienced by retail banking employees so as to provide managerial implications for current retail banking management. Among the numerous organizational sources of job stress, seven main factors are investigated in this study: co-worker support, supervisor support, autonomy, role conflict, role ambiguity, role overload, and fairness of rewards. It should be noted that the proposed research model considered in the present study is not intended to be a comprehensive model for the prediction of turnover intentions. Rather, if carried forward, it provides an appropriate framework to extend one's knowledge about the relationships among workplace factors, job stress, and turnover intentions.

Research framework and hypotheses development

Many factors contribute to explain employees' turnover intentions. In many role environments, role conflict, role ambiguity, and role overload typically are referred to as role stressors. These role stressors do not constitute stress in and of themselves; rather, it is generally accepted that these role stressors contribute to job stress (Sager & Wilson, 1995). Several studies show that there is equivocal support and mixed results for the impact of role stressors on turnover intentions' relationships (e.g. Aranya & Ferris, 1983; Bartunek & Reynolds, 1983; Bhuian et al., 2005; Hellriegel & White, 1973; Rebele & Michaels, 1990; Senatra, 1980). While some research suggests that role stressors possess direct influence on turnover intention (Rhoads, Singh, & Goodell, 1994; Singh, 1993, 1998), others indicate that job stress is a key mediator between role stressors and turnover intention (e.g. Wolfgang, 1989).

To examine the potential mediating role of job stress, this study applies the job characteristics theory (Hackman & Oldham, 1976) to establish a research model of turnover

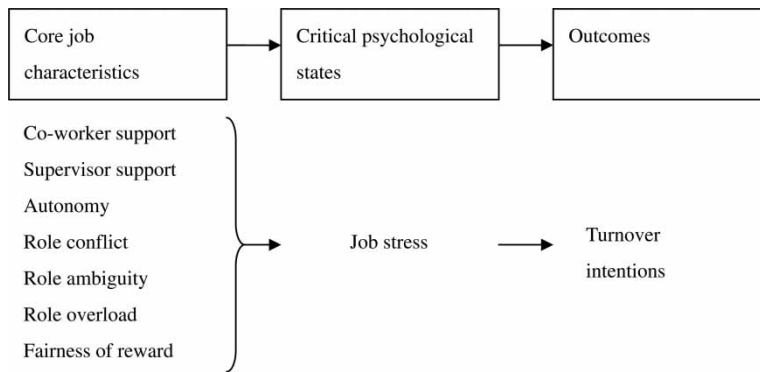


Figure 1. Research model.

intentions considering job stress as a key mediator. The job characteristics theory has been supported by various studies. For example, previous research regarding the interrelationships among the job characteristics and job outcomes such as job performance, job satisfaction, role stress, and turnover intentions suggest that (1) reduction in role ambiguity invariably increases job satisfaction and performance (Babin & Boles, 1996; Brown & Peterson, 1994); (2) greater autonomy and feedback help reduce role stress and positively impact job outcomes (Dubinsky & Skinner, 1984; Fried & Ferris, 1987); and (3) rich job characteristics tend to increase job satisfaction and performance and moderate the effects of perceived role stress (Churchill, Ford, Hartley, & Walker, 1985; Fried & Ferris, 1987). Particularly, job stress which conceivably relates to both role stressors and turnover intentions is introduced as a mediating variable in the proposed research model. Other workplace factors such as co-worker support, supervisor support, job autonomy, and fairness of reward, which might also influence job stress (Lait & Wallace, 2002), are added in this proposed research model. This study proposed a research model of turnover intentions based on Hackman and Oldham's (1976) job characteristics theory, as shown in Figure 1. The job characteristics theory is critical herein for studying job stress and turnover intention because such theory specifies the task conditions under which individuals are expected to prosper in their work (Kulik & Oldham, 1987), consequently leading to their turnover intentions. To achieve the objectives of the present study, hypotheses are drawn from the model and are tested. The interconnecting paths in Figure 1 show that workplace factors (i.e. co-worker collegiality, supervisor collegiality, autonomy, role conflict, role ambiguity, perceived workload, and fairness of rewards) have a direct influence on job stress, and in turn, job stress has a direct, dysfunctional influence on turnover intentions. The hypotheses depicted in Figure 1 are discussed as follows.

Job stress and turnover intentions

While there is a lack of universal agreement on the meaning of stress, job stress in general has been defined as a dynamic condition in which an individual is confronted with an opportunity, constraint, or demand on being, having, and/or doing what he or she desires (McGrath, 1976; Schuler, 1980) and for which the outcomes are perceived as important and uncertain (Cooper, Sloan, & William, 1988; Greenberg & Baron, 2003; Robbins, 2001). In short, job stress is a type of person–environment fit, encompassing

both individual and workplace stressors: examples are when an individual is not given adequate training or is not provided with the necessary resources to perform the job, or is confronted with conflicting job demands (Jamal, 1990). Turnover intentions refer to an individual's estimated probability that he/she will leave an organization at some point in the near future. Turnover intentions are the immediate precursor to turnover behaviour (Mobley, Horner, & Hollingsworth, 1978; Tett & Meyer, 1993). Previous research studies reveal that turnover intentions are positively related to job stress (e.g. Jamal, 1984; Kemery, Bedeian, Mossholder, & Touliatos, 1985; Sager, 1994), which is influenced by various determinants as follows.

Co-worker support and supervisor support

In job stress research, social support is usually negatively related to job stress or strain, as if it might be calming to employees (Beehr, 1995; Kahn & Byosiere, 1992). Caplan et al. (1975b) identify social support as being received from three sources: supervisor(s), work colleagues, and family and friends. However, the different sources of support have only recently been specifically tested (Brough & Kelling, 2002; Voydanoff, 2002). We only discuss here co-worker support and supervisor support since these two social support sources come from the workplace.

Good relationships with colleagues and supervisors significantly reduce feelings of job stress (Burke, 1988; Cartwright & Cooper, 1997; Collings & Murray, 1996; Karasek & Theorell, 1990). As Leiter (1991) notes, service providers generally expect that their co-workers will be supportive of one another in their shared desire to help their clients. Support from co-workers in a potentially stressful occupation appears negatively related to individuals' job stress. In addition to structuring the work environment and providing information and feedback to employees, supervisors play an important part in developing roles and expectations of employees (Graen & Scandura, 1987). Immediate supervisors provide salient information about support of the broader organization for change and their behaviours are likely to be interpreted as representative of wider organizational processes to reduce the consequences of inter-domain conflict (Voydanoff, 2002). Supervisor support obviously is an important mitigating source of job stress. Conversely, working alone at one's job without social support from peers and supervisors would lead to job stress (Eugene, 1999; Mirovisky & Ross, 1986). Therefore, we hypothesize that:

H1: Co-worker support is negatively related to turnover intentions via the mediation of job stress.

H2: Supervisor support is negatively related to turnover intentions via the mediation of job stress.

Autonomy

Job autonomy or control over one's work refers to task authority, which involves an employee's freedom to determine which procedures to use in performing that work and making a contribution to decision making (Teas, 1981). In short, job autonomy refers to the degree to which employees experience a sense of freedom, independence, and discretion in their work. Many studies have indicated that low job autonomy and discretion in one's job are associated with high levels of stress (Cherniss, 1980; Daniels & Guppy, 1994; Guterman & Jayaratne, 1994; Hendrix, Steel, Leap, & Summers, 1991; Schaefer & Moos, 1993). Service employees often anticipate that they will have autonomy to do what is best for their clients instead of working within a bureaucratic system that often

results in feelings of job stress (Cherniss, 1980; Harris, 1998; Leiter, 1991; Pines, 1993; Pottage & Huxley, 1996). Therefore, we hypothesize that:

H3: Job autonomy is negatively related to turnover intentions via the mediation of job stress.

Role conflict

Role conflict exists when employees face inconsistent or incompatibility in the demands and expectations of various parties (Kahn, Wolfe, Quinn, Snoeck, & Rosenthal, 1964) that cannot be satisfied at the same time (Chonko, Howell, & Bellenger, 1986; Handy, 1985; Sohi, 1996) and the incompatibility may have an impact on role performance (Rizzo, House, & Lirtzman, 1970; Souder, 1981). When individuals are required to play two or more roles that may be hard to reconcile, they are likely to experience job stress, especially when the employees have several supervisors with conflicting expectations (Handy, 1985; Lysonski & Andrews, 1990; Walker, Churchill, & Ford, 1975). Role conflict has been found to have a positive relationship with job stress (Breaugh & Colihan, 1994; Roberts, Lapidus, & Chonko, 1997; Xie & Johns, 1995). Therefore, we hypothesize that:

H4: Role conflict is positively related to turnover intentions via the mediation of job stress.

Role ambiguity

Role ambiguity occurs when individuals lack a clear definition of the expectations of their roles and the required methods to carry out their job duties (Behrman & Perreault, 1984; Rizzo et al., 1970; Senatra, 1980; Sohi, 1996). In other words, role ambiguity happens when job responsibilities and accompanying tasks are not clearly defined. Stress can be created in such situations where there are not clear job descriptions, or an obvious chain of command is absent, or where a high degree of uncertainty about job security or career prospects is present. Previous research has found that high levels of role ambiguity contribute to increased tension and stress levels (e.g. Fry, Futrell, Parasuraman, & Chmielewski, 1986; Teas, 1983). Therefore, we hypothesize that:

H5: Role ambiguity is positively related to turnover intentions via the mediation of job stress.

Role overload

Role overload occurs when individuals perceive that the cumulative demands have an inappropriate onerous magnitude and exceed their abilities and motivation to perform successfully the tasks related to their job (Singh, 1998). This means sometimes even job-related tasks might be clear and compatible; however, work overload (both quantitatively and qualitatively) might cause job stress (Beehr & Newman, 1978; Greenhaus, Bedeian, & Mossholder, 1987; Handy, 1985; Kakabadse, Ludlow, & Vinnicombe, 1988; Miller & Ellis, 1990; Roberts et al., 1997). Several researchers have found that role overload contributes to higher stress levels (Newton & Keenan, 1990; Schaubroeck, Cotton, & Jennings, 1989). Therefore, we hypothesize that:

H6: Role overload is positively related to turnover intentions via the mediation of job stress.

Fairness of reward

The lack of recognition for fairness of reward over good job performance is one of the other possible causes of work-related stress. Based on Adams' (1965) equity theory, inequality arises from a social exchange process where employees bring certain inputs to their jobs

(e.g. education and effort) and in return have certain expected outcomes (e.g. pay and promotion). Inequity exists when the perceived inputs do not match the outcomes (Locke, 1976). A two-dimensional conceptualization of justice appears to have been widely adopted in the extant literature. Distributive justice refers to the perceived fairness of the amounts of compensation that employees receive, while procedural justice describes the perceived fairness of the means used to determine those outcomes, which include employee participation, consistency, impartiality, and rationality (Folger & Konovsky, 1989). Distributive justice concerns whether people perceive distributions of rewards and resources as fair, given their level of training, tenure, responsibility, or workload. Its relationship to job stress is discussed in this study. The lack of fairness of rewards in the circumstance of high efforts and low rewards is likely to provoke job stress. Therefore, we hypothesize that:

H7: Fairness of reward is negatively related to turnover intentions via the mediation of job stress.

Research methodology

Data collection and sample

To achieve the objectives of the present study and provide data for hypothesis testing, survey instruments were sent to a sample of retail banking employees. Structural equation modelling (SEM) is employed to examine the general fit of the proposed model and to test the hypotheses. Details regarding the specific research methods employed are provided in the following sections. First, the sample and data collection are provided. Next, specific measures used to assess the variables are identified.

In order to validate the proposed pattern of relationships, six financial institutes in Taipei are invited to join this research. Self-reported questionnaires are administered in person to 300 employees in these financial institutes. In total, 255 (85%) usable questionnaires were returned. The mean age in this sample is 35.27 years, the mean tenure is 9.71 years, 48.6% of the sample are males, 56.5% of the sample is married, 52% of the sample are with university education level, and 70% of the sample are in the clerk position. Sample characteristics are provided in Table 1.

Measures

For the present study, the measurement scales and the indicators adopted herein measuring all the independent and dependent construct variables are validated in existing, established scales. The respondents are asked to indicate their agreement or disagreement with the statements provided, using 7-point Likert-type scales with anchors of 1 to indicate 'strongly disagree' and 7 to indicate 'strongly agree'.

Social support is measured by two scales, co-worker support and supervisor support, adapted from Caplan, Cobb, and French (1975a). Co-worker support is measured by three items and supervisor support is also measured by three similar items. Autonomy is assessed by a five-item participation scale used by Mohr (1971) and Hrebiniak (1974). Role conflict and role ambiguity are assessed by the scales developed by Rizzo et al. (1970). The use of this subjective scale based on employee perceptions for measuring role conflict and role ambiguity is supported by Schuler, Aldag, and Brief (1977). Role overload is measured by a three-item scale adapted from Caplan et al. (1975a). The items used to assess fairness of rewards are drawn from Niehoff and Moorman's (1993) distributive justice scale. Two of the five items comprising the distributive justice scale specifically address fairness of rewards and hence are used to assess fairness of rewards

Table 1. Sample characteristics.

Characteristic		Number	Percentage
Gender	Male	124	48.63
	Female	131	51.37
Age	Under 30 years old	81	31.76
	31–40 years old	105	41.18
	41–50 years old	48	18.82
	51 years old or above	21	8.24
Education	College or above	242	94.91
	High school or under	13	5.09
Marriage	Married	144	56.47
	Not married	110	43.13
Tenure	Less than 1 year	36	14.12
	1–5 years	77	30.20
	6–10 years	50	19.61
	11–15 years	43	16.86
	16–20 years	12	4.71
	21 years or above	37	14.50
Department	Saving	45	17.64
	Foreign exchange	24	9.41
	Loan	94	36.86
	Accounting	4	1.57
	General affairs	33	12.94
	Other	55	21.58

in the present study. Job stress is measured by a six-item scale developed by Lait and Wallace (2002). Turnover intention is assessed by a four-item scale based on Jackson, Turner, and Brief (1987) and Mitchel (1981). The detailed scale items for the construct variables are provided in the Table 2.

Data analysis and results

The model proposed in Figure 1 is evaluated with SEM based on the correlation matrix in Table 3. This method has gained considerable popularity in the social sciences literature (Bentler & Dudgeon, 1996) and offers the ability of accounting for measurement errors and simultaneously estimating the modelled path coefficients. According to Anderson and Gerbing (1988), the data analysis procedure consists of two stages. In the first stage, a confirmatory factor analysis (CFA) is performed to assess the measurement model. In the second stage, a SEM analysis is used to examine the overall relationships among these constructs presented in Figure 2.

Testing of the measurement model

CFA is used to test the adequacy of the measurement model (Anderson & Gerbing, 1988). CFA involves the specification and estimation of one or more putative models of factor structure, each of which proposes a set of latent factors to account for covariance among a set of observed variables (Bollen, 1989; Joreskog & Sorbom, 1993). The adequacy of the measurement model is evaluated on the criteria of overall fit with the data, convergent validity, discriminate validity, and reliability. A modification index is adopted to select indicator variables (Joreskog & Sorbom, 1986). Through repeated

Table 2. Measurement items.

Construct	Indicators	Source
Co-worker support (F1)	<ol style="list-style-type: none"> 1. My co-workers are willing to listen to my job-related problems 2. My co-workers can be relied upon when things get tough at work 3. My co-workers help me get through difficulties I have at work 	Adapted from Caplan et al. (1975a)
Supervisor support (F2)	<ol style="list-style-type: none"> 4. My supervisor is willing to listen to my job-related problems 5. My supervisor can be relied upon when things get tough at work 6. My supervisor helps me get through difficulties I have at work 	Adapted from Caplan et al. (1975a)
Autonomy (F3)	<ol style="list-style-type: none"> 7. If I had a suggestion for an improvement to make, it would be difficult for me to get a hearing on it from my manager (R) 8. When some important matter comes up that concerns me, my manager seeks out my ideas before a decision is made 9. All in all, I have very little influence in management decisions that affect me in important ways (R) 10. I get few opportunities, if any, to participate in management decisions that affect significant aspects of my job (R) 11. Our manager is inclined to accept the opinions of workers in important decisions about job-related matters 	Mohr (1971) and Hrebiniak (1974)
Role conflict (F4)	<ol style="list-style-type: none"> 12. I have to do things that should be done differently 13. I receive an assignment without the manpower to complete it 14. I have to 'buck' a rule or policy in order to carry out an assignment 15. I work with two or more groups who operate quite differently 16. I receive incompatible requests from two or more people 17. I do things that are apt to be accepted by one person and not accepted by others 18. I receive an assignment without adequate resources and materials to execute it 19. I work on unnecessary things 	Rizzo et al. (1970)
Role ambiguity (F5)	<ol style="list-style-type: none"> 20. I feel certain about how much authority I have (R) 21. Clear, planned goals and objectives exist for my job (R) 22. I know that I have divided my time properly (R) 23. I know what my responsibilities are (R) 24. I know exactly what is expected of me (R) 25. Explanation is clear of what has to be done (R) 	Rizzo et al. (1970)

Role overload (F6)	26. I have to work very fast to get everything done in my job 27. My workload is too heavy in my job 28. I do not have enough time to get everything done in my job	Adapted from Caplan et al. (1975a)
Fairness of rewards (F7)	29. I think my level of pay is fair 30. Overall, the rewards I receive here are quite fair	Niehoff and Moorman (1993)
Job stress (F8)	31. I am discouraged about my work 32. I feel that things are out of my control at work 33. I feel overwhelmed by my work 34. I feel like giving up on my job 35. I feel unable to get out from under my work 36. I feel frustrated with my work	Lait and Wallace (2002)
Turnover intentions (F9)	37. How likely is it that you will be working at the same company this time next year? (R) 38. How likely is it that you will take steps during the next year to secure a job at a different company? 39. I will be with this company five years from now (R) 40. I will probably look for a job at a different company in the next year	Based on Jackson et al. (1987); Mitchel (1981)

Note: (R) denotes items requiring reverse scoring.

Table 3. Correlation matrix.

	F1	F2	F3	F4	F5	F6	F7	F8	F9
Mean	5.36	4.64	3.77	3.56	3.09	4.30	3.97	3.72	2.93
Standard deviation	1.07	1.39	1.24	1.21	1.02	1.25	1.44	1.38	1.51
F1	(0.90)	0.43	0.17	-0.24	-0.25	-0.20	0.30	-0.28	-0.09
F2		(0.94)	0.68	-0.37	-0.46	-0.30	0.37	-0.38	-0.17
F3			(0.76)	-0.30	-0.37	-0.25	0.25	-0.37	-0.12
F4				(0.78)	0.27	0.30	-0.31	0.46	0.25
F5					(0.74)	0.30	-0.22	0.41	0.24
F6						(0.82)	-0.31	0.57	0.15
F7							(0.95)	-0.26	-0.33
F8								(0.71)	0.24
F9									(0.89)

Notes: F1, co-worker support; F2, supervisor support; F3, autonomy; F4, role conflict; F5, role ambiguity; F6, role overload; F7, fairness of reward; F8, job stress; and F9, turnover intentions. Construct reliabilities (Cronbach's alpha) are shown in parentheses.

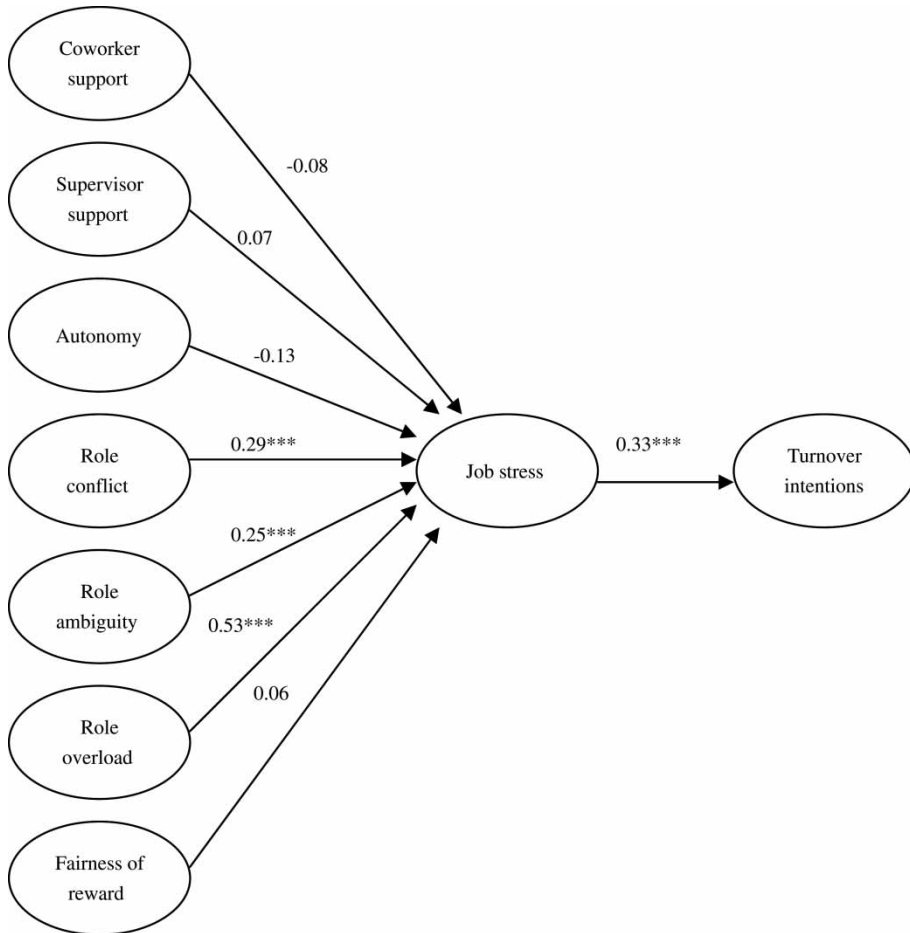


Figure 2. Results of job stress and turnover intentions model.

Note: Gender, age, and education are included as control variables in the model.

*** $p < 0.01$.

filtering, a total of 24 indicators, 19 indicators for exogenous variables and 5 indicators for endogenous variables, are retained in the final measurement model.

Several commonly used fit indices are used to assess the overall model fit (Bentler, 1990; Hu & Bentler, 1998; Joreskog, 1993; Joreskog & Sorbom, 1993; Schumacker & Lomax, 1996). Since the chi-square is heavily influenced by the sample size (Bollen & Long, 1993), other goodness-of-fit indices are suggested to help the model evaluation (Bentler, 1990; Joreskog & Sorbom, 1996). The overall goodness-of-fit indices for the measurement model reveal: $\chi^2_{(216)} = 311.50$ ($p < 0.0001$), the chi-square/ $df = 1.44$ (less than 2), the goodness-of-fit index (GFI) = 0.91, the comparative fit index (CFI) = 0.98, the normed fit index (NFI) = 0.93, non-normed index (NNI) = 0.97 (GFI, CFI, NFI, and NNI greater than 0.90); the adjusted goodness-of-fit index (AGFI) = 0.88 (greater than 0.8); the root mean square error of approximation (RMSEA) = 0.04 (less than 0.5). Taken together, the findings indicate that there is a satisfactory fit between the proposed model and the data (Bagozzi & Yi, 1988; Marcoulides & Schumacker, 1996). After assessing the overall model, the psychometric properties of each latent construct are evaluated separately through the construct reliability and validity as mentioned below.

Reliability refers to the consistency of measurement, while validity refers to the extent to which an instrument measures what it is intended to measure (Hatcher, 1994). Internal consistency reliabilities (Cronbach's alpha) for the scales are reported in Table 4. All of

Table 4. Overall reliability of the constructs and standardized loadings of indicators.

Construct	Indicators	Average variance extracted	Cronbach's alpha	Standardized loadings	t-Value
Co-worker support	X1	0.77	0.90	0.75	13.79***
	X2			0.99	21.12***
	X3			0.89	17.65***
Supervisor support	X4	0.85	0.94	0.87	17.39***
	X5			0.95	20.38***
	X6			0.94	19.97***
Autonomy	X8	0.55	0.76	0.82	14.65***
	X10			0.57	9.19***
	X11			0.80	14.22***
Role conflict	X15	0.59	0.78	0.79	13.84***
	X16			0.91	16.43***
	X17			0.54	8.79***
Role ambiguity	X20	0.50	0.74	0.59	9.27***
	X24			0.72	11.61***
	X25			0.80	13.23***
Role overload	X27	0.70	0.82	0.78	12.98***
	X28			0.90	15.26***
Fairness of rewards	X29	0.90	0.95	0.95	18.72***
	X30			0.95	18.51***
Job stress	X32	0.56	0.71	0.78	12.92***
	X35			0.71	11.74***
Turnover intentions	X37	0.76	0.89	0.68	12.07***
	X38			0.93	18.86***
	X40			0.97	20.40***

***Significant at the 0.001 significance level.

the measurement scales satisfy the general recommended level of 0.70 (Nunnally, 1967) where the research instruments exhibit high reliability (Cronbach's alpha greater than 0.70). According to Hatcher (1994), convergent validity can be evaluated by examining the *t*-tests for the factor loadings. In this study, Table 4 reveals the *t*-value associated with each of the completely standardized loading for indicators measuring the same construct that are statistically significant ($p < 0.001$). The results indicate that all indicators effectively measure their corresponding construct (Anderson & Gerbing, 1988) and support convergent validity. Additionally, the average variance extracted for the constructs are higher than 0.50.

The chi-square difference test can be used to assess the discriminant validity of two constructs by calculating the difference of the chi-square statistics for the constrained and unconstrained measurement models (Hatcher, 1994). Empirically, such evidence can be obtained through the comparison of an unconstrained model that estimates the correlation between a pair of constructs and a constrained model that fixes the value of these two constructs of interest correlation to 1.0. Discriminant validity is demonstrated if the chi-square difference (with 1 *df*) between these two models is significant, meaning that the unconstrained model is a better fit for the data, thereby supporting the existence of discriminant validity (Gerbing & Anderson, 1988; Venkatraman, 1989). Since we need to test the discriminant validity for every pair of five constructs, we should control the experiment-wise error rate (the overall significance level). By using the Bonferroni method under the overall 0.01 levels, the critical values of the chi-square test are $\chi^2(1, 0.01/36) = 13.25$. The result reveals that the chi-square difference statistics for every two constructs all exceed 13.25 (Table 5), and discriminant validity is successfully achieved.

Testing of the structural model

The hypothesized structural causal model presented in Figure 1 is tested by SEM. The results indicate that the chi-square value (336.85 with 223 of *df*) is significant ($p < 0.0001$), but other fit indices indicate a quite acceptable level. The chi-square/*df* = 1.51 is less than 2, the RMSEA = 0.04 is less than 0.05, the GFI = 0.90, the CFI = 0.97, the NFI = 0.92, the NNI = 0.96 (all greater than 0.90), and the AGFI = 0.87 (greater than 0.80) (Marcoulides & Schumacker, 1996). Taken together, the findings indicate that there is a satisfactory fit between the initial proposed model and the data (Bagozzi & Yi, 1988). The squared multiple correlations (R^2) of the proposed structural model explain 72% of the variance in job stress and 12% of the variance in turnover intentions. The results of the path coefficients in the SEM analysis are presented in Figure 2.

Regarding the paths in Figure 2 between the workplace factors and job stress, the results indicate that a higher level of job stress leads to higher turnover intentions. The standardized path coefficient (0.33) is statistically significant in a positive direction at $p < 0.01$. Moreover, the standardized path coefficients of three job characteristics latent factors ($\beta_{H4} = 0.29$, $\beta_{H5} = 0.26$, and $\beta_{H6} = 0.53$) are all statistically significant in a positive direction for job stress at $p < 0.01$. The indirect effects shown in Table 6 further indicate that the job characteristics of role conflicts, role ambiguity, and role overload can exert their impacts on turnover intentions through the mediator of job stress. Thus, the results indicate that *H4*, *H5*, and *H6* are supported here and confirm that the higher the degrees are of role conflicts, role ambiguity, and role overload that the employees encounter, the higher the degree of job stress the employees take. The path coefficients for the four remaining workplace factors (i.e. co-worker collegiality,

Table 5. Discriminant validity for the measurement model.

Construct pair	Standard measurement model $\chi^2(216) = 311.50$	
	Unidimensional model $\chi^2(217)$	Chi-square difference
(F1, F2)	796.78	485.28***
(F1, F3)	517.47	205.96***
(F1, F4)	580.19	268.69***
(F1, F5)	468.11	156.61***
(F1, F6)	941.67	630.17***
(F1, F7)	842.84	531.33***
(F1, F8)	863.18	551.67***
(F1, F9)	897.93	586.43***
(F2, F3)	383.26	71.76***
(F2, F4)	1378.56	1067.06***
(F2, F5)	519.43	207.93***
(F2, F6)	545.71	234.21***
(F2, F7)	708.48	396.98***
(F2, F8)	1087.29	775.79***
(F2, F9)	1038.76	727.26***
(F3, F4)	578.78	267.28***
(F3, F5)	525.33	213.83***
(F3, F6)	938.89	627.38***
(F3, F7)	508.06	196.55***
(F3, F8)	660.11	348.61***
(F3, F9)	1614.94	1303.44***
(F4, F5)	466.51	155.00***
(F4, F6)	462.05	150.55***
(F4, F7)	775.37	463.86***
(F4, F8)	371.41	59.91***
(F4, F9)	550.76	239.26***
(F5, F6)	456.44	144.93***
(F5, F7)	1453.86	1142.35***
(F5, F8)	366.09	54.59***
(F5, F9)	473.93	162.43***
(F6, F7)	864.97	553.47***
(F6, F8)	341.34	29.84***
(F6, F9)	473.36	161.86***
(F7, F8)	853.06	541.56***
(F7, F9)	847.12	535.62***
(F8, F9)	393.70	82.20***

F1, Co-worker support; F2, supervisor support; F3, autonomy; F4, role conflict; F5, role ambiguity; F6, role overload; F7, fairness of rewards; F8, job stress; and F9, turnover intentions.

***Significant at the 0.01 overall significance level by using the Bonferroni method.

Table 6. Results for hypotheses.

Model paths	Path coefficients (indirect effects)	Results
H1: Co-worker support → turnover intentions	-0.0264	Not supported
H2: Supervisor support → turnover intentions	0.0231	Not supported
H3: Autonomy → turnover intentions	-0.0429	Not supported
H4: Role conflict → turnover intentions	0.0957***	Supported
H5: Role ambiguity → turnover intentions	0.0825***	Supported
H6: Role overload → turnover intentions	0.1749***	Supported
H7: Fairness of reward → turnover intentions	0.0198	Not supported

*** $p < 0.01$.

supervisor collegiality, autonomy, and fairness of rewards) are not statistically significant. Thus, *H1*, *H2*, *H3*, and *H7* are not supported here. It means that these four workplace factors are not the main sources of job stress in this study.

Discussions and managerial implications

This study establishes a research model of turnover intentions considering job stress as a key mediator based on the job characteristics theory (Hackman & Oldham, 1976). Our empirical analysis demonstrated that when job stress (i.e. a critical psychological state) is taken into account, the indirect effect of role factors (i.e. role conflict, role ambiguity, and role overload) on turnover intentions among employees tend to be significant, though the same cannot be said for the other factors. A good understanding of the workplace factors based on Hackman and Oldham's (1976) job characteristics theory helps management and scholars explain a great proportion of the variance of job stress and turnover intentions.

The retail banking sector is an important sector of Taiwan's economy and job stress is progressively increasing in this sector after a series of financial institution M&A plan in recent years. Thus, understanding specific determinants of job stress and turnover intention in this study provides great insights to both theory and managerial practices in banking industries. The test results of this study indicate that three job characteristics out of seven workplace factors – namely role conflicts, role ambiguity, and role overload – have positive relationships with job stress as hypothesized. The empirical finding is consistent with previous studies whereby role stressors are positively associated with job stress (Roberts et al., 1997; Sager & Wilson, 1995). This phenomenon suggests that the increased conflicts, ambiguity, and work overload are likely to make the retail banking employees feel job stress. When the above-mentioned three role stressors exceed the abilities that the retail banking employees can cope with, then job stress is perceived. A higher level of perception of job stress is positively associated with a higher level of turnover intentions.

Co-worker support and supervisor support are not related to job stress in our empirical findings. It is possible that employees in the retail banking sample may have attuned themselves to work independently. Thus, these factors may not be viewed as job stress sources. Further observation reveals that co-worker support is negatively related to job stress, but supervisor support is positively related to job stress, although these two relationships are not statistically related. This implies that supervisor support will reversely increase an employee's job stress. Autonomy similarly has no influence on job stress. One plausible explanation for this may be related to the fact that the employees in retail banking should obey the standard operation processes to proceed with their jobs so as to maintain consistent service quality and obey the related laws. Thus, there is not so much room for retail banking employees to provide opinions or participate in related important decision makings. Especially, in this study, about 70% of the subjects' position in the financial institutions belongs to clerk. In other words, the employees in retail banking do not need much autonomy to complete their works, and so autonomy will not be a job stress source. Additionally, fairness of rewards has no direct influence on job stress. It means that fairness of rewards is not an important determinant factor to job stress.

To avoid the three role stressors bringing about job stress, retail banking managers in Taiwan should manage to reduce job stress in order to raise their own cutting edges in such a keen competitive environment here. In fact, financial institutes engage to M&A often layoff some staffs so as to cost down their personnel spending. However, it would probably

leave insufficient manpower. Therefore, the current employees must take more work and responsibility. In such circumstances, it is not surprising that the employees feel more role conflicts, role ambiguity, and role overload and results in job stress and when the job stress is becoming higher and higher then they would choose to leave the organization. This study suggests the following ways to avoid the role stressors bringing about job stress. First, the retail banking organizations should improve the work processing or develop electronic operative processing to reduce role overload. The workload should be in line with the employee's capabilities and resources. Second, the retail banking organizations could provide training programmes when the employees must take a new business in their position and provide job guide which clearly define role expectations and responsibilities to reduce role ambiguity and role conflicts. Finally, it could be helpful to set up a stress management programme for employees to release their stress and complain. By doing so, the employee's turnover intentions could be reduced since they may not experience as much job stress from these stressors, and then job stress might be mitigated.

It should be cautious that this study suffers from the following three limitations. First, this study uses cross-sectional data, which limit inferences with regards to causality between the independent variables and the dependent variables. A longitudinal approach might improve the ability to make causal statements. Second, this study is limited to retail banking employees in Taiwan. Thus, the validity of the findings cannot be generalized to other job incumbents in other sectors. Future research may be conducted to compare the predictive validity of the model across different jobs and industries. Third, it is important to note another limitation of ours that we have dropped some measurement items (e.g. job stress) with bad factor loadings during our CFA, which could slightly change the actual influence of the research constructs under some circumstances. Fourth, given that there may be other individual, organizational, and non-work factors that also affect and moderate job stress, researchers interested in this area should try to explore them in the future. Finally, our model explaining 12% of the variance in turnover intentions implies that other potential mediators (in addition to job stress) could be further explored in future research so as to improve the variance explained for turnover intentions. Researchers may search for various psychological states based on previous findings and conduct empirical studies for statistical confirmation so that evidence-based mediators can be further provided for organizational management.

References

- Adams, J.S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 267–300). New York: Academic Press.
- Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Aranya, N., & Ferris, K.R. (1983). Organizational-professional conflict among US and Israeli professional accountants. *Journal of Social Psychology*, 119(2), 153–161.
- Babin, B.J., & Boles, J.S. (1996). The effects of perceived co-worker involvement and supervisor support on service provider role stress, performance and job satisfaction. *Journal of Retailing*, 72(1), 57–75.
- Bagozzi, R.P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–80.
- Bartunek, J., & Reynolds, C. (1983). Boundary spanning and public accounting role stress. *Journal of Social Psychology*, 121(1), 65–72.
- Beehr, T.A. (1995). *Psychological stress in the workplace*. London: Routledge.
- Beehr, T.A., & Newman, J.E. (1978). Job stress, employee health and organizational effectiveness: A facet analysis, model and literature review. *Personnel Psychology*, 31(4), 665–699.

- Behrman, D., & Perreault, W. (1984). A role stress model of the performance and satisfaction of industrial salespersons. *Journal of Marketing*, 48(4), 9–21.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 247–255.
- Bentler, P.M., & Dudgeon, P. (1996). Covariance structure analysis: Statistical practice, theory and directions. *Annual Review of Psychology*, 47(1), 563–592.
- Bhuiyan, S.N., Menguc, B., & Borsboom, R. (2005). Stressors and job outcomes in sales: A triphasic model versus a linear-quadratic-interactive model. *Journal of Business Research*, 58(2), 141–150.
- Bohle, P., & Quinlan, M. (2000). *Managing occupational health and safety: A multidisciplinary approach*. Melbourne, VIC: MacMillan.
- Bollen, K.A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Bollen, K.A., & Long, J.S. (1993). *Testing structural equation models*. Newbury Park, CA: Sage.
- Breaugh, J.A., & Colihan, J.P. (1994). Measuring facets of job ambiguity: Construct validity evidence. *Journal of Applied Psychology*, 79(2), 191–202.
- Brough, P., & Kelling, A. (2002). Women, work and well-being: An analysis of the work–family conflict. *New Zealand Journal of Psychology*, 31(1), 29–38.
- Brown, S.P., & Peterson, R.A. (1994). The effect of effort on sales performance and job satisfaction. *Journal of Marketing*, 58(2), 70–80.
- Burke, R.J. (1988). Some antecedents and consequences of work–family conflict. *Journal of Social Behaviour and Personality*, 3(4), 287–302.
- Caplan, R.D., Cobb, S., & French, J.R.P. (1975a). Relationship of cessation of smoking with job stress, personality, and social support. *Journal of Applied Psychology*, 60(2), 211–219.
- Caplan, R.D., Cobb, S., French, J.R.P., Harrison, V.R., & Pinneau, S.R. (1975b). *Job demands and worker health: Main effects and occupational differences*. Washington, DC: Department of Health, Education and Welfare No. 75160 (NOISH).
- Cartwright, S., & Cooper, C.L. (1997). *Managing workplace stress*. Thousand Oaks, CA: Sage.
- Cherniss, C. (1980). *Professional burnout in human service organizations*. New York: Praeger.
- Chonko, L.B., Howell, R.D., & Bellenger, D.N. (1986). Congruence in sales force valuations: Relation to sales force perceptions of conflict and ambiguity. *Journal of Personal Selling & Sales Management*, 6(1), 35–48.
- Churchill, G.A., Ford, N.M., Hartley, S.W., & Walker, O.C. (1985). The determinants of salesperson performance: A meta-analysis. *Journal of Marketing Research*, 22(2), 103–118.
- Collings, J.A., & Murray, P.J. (1996). Predictors of stress amongst social workers: An empirical study. *British Journal of Social Work*, 26(3), 375–387.
- Cook, C.W., & Hunsaker, P.L. (2001). *Management and organizational behaviour*. New York: McGraw Hill.
- Cooper, C.L., Sloan, S.L., & William, S. (1988). *Occupational stress indicator, management guide*. Windsor, Canada: NFER-Nelson.
- Daniels, K., & Guppy, A. (1994). Occupational stress, social support, job control, and psychological well-being. *Human Relations*, 47(12), 1523–1544.
- Dubinsky, A.J., & Skinner, S.J. (1984). Impact of job characteristics on retail salespeople's reactions to their jobs. *Journal of Retailing*, 60(2), 35–62.
- Eugene, W.J. (1999). The impact of work resources on job stress among correctional treatment staff. *Journal of Addictions and Offender Counselling*, 20(1), 26–34.
- Folger, R., & Konovsky, M.A. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal*, 32(1), 115–130.
- Fried, Y., & Ferris, G.R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, 40(2), 287–322.
- Fry, L.W., Futrell, C.M., Parasuraman, A., & Chmielewski, M.A. (1986). An analysis of alternative causal models of salesperson role perceptions and work related attitudes. *Journal of Marketing Research*, 23(2), 153–163.
- Gerbing, D.W., & Anderson, J.C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, 25(2), 186–192.
- Graen, G.B., & Scandura, T.A. (1987). Toward a psychology of dyadic organizing. In L.L. Cummings & B.M. Staw (Eds.), *Research in organizational performance* (pp. 175–208). Greenwich, UK: JAI.

- Greenberg, J., & Baron, R.A. (2003). *Behaviour in organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Greenhaus, J.H., Bedeian, A.G., & Mossholder, K.W. (1987). Work experiences, job performance, and feelings of personal and family well-being. *Journal of Vocational Behaviour*, 31(2), 200–215.
- Greenhaus, J.H., & Beutell, N.J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76–88.
- Guterman, N.B., & Jayaratne, S.J. (1994). Responsibility at-risk: Perceptions of stress, control and professional effectiveness in child welfare direct practitioners. *Journal of Social Service Research*, 20(1–2), 99–120.
- Hackman, J.R., & Oldham, G.R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16(2), 250–279.
- Handy, C.B. (1985). *Understanding organizations*. London: Penguin.
- Harris, J. (1998). Scientific management, bureau-professionalism, new managerialism: The labour process of state social work. *British Journal of Social Work*, 28(6), 839–862.
- Hatcher, L. (1994). *A step-by-step approach to using the SAS system for factor analysis and structural equation modeling*. Cary, NC: SAS Institute.
- Hellriegel, D., & White, G.E. (1973). Turnover of professionals in public accounting: A comparative analysis. *Personnel Psychology*, 26(2), 239–246.
- Hendrix, W.H., Steel, R.P., Leap, T.L., & Summers, T.P. (1991). Development of a stress-related health promotion model: Antecedents and organizational effectiveness outcomes. *Journal of Social Behaviour and Personality*, 6(7), 141–162.
- Hrebiniak, L.G. (1974). Job technology, supervision, and work-group structure. *Administrative Science Quarterly*, 19(3), 395–410.
- Hu, L., & Bentler, P.M. (1998). Fit indices in covariance structure modeling: Sensitivity to under-parameterized model misspecification. *Psychological Methods*, 3(4), 424–453.
- Jackson, S.E., Turner, J.A., & Brief, A.P. (1987). Correlates of burnout among public service lawyers. *Journal of Occupational Behaviour*, 8(4), 339–349.
- Jamal, M. (1984). Job stress and job performance controversy: An empirical assessment. *Organizational Behaviour and Human Performance*, 33(1), 1–21.
- Jamal, M. (1990). Relationship of job stress and type-A behaviour to employees' job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation. *Human Relations*, 43(8), 727–738.
- Joreskog, K.G. (1993). Testing structural equation models. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 294–316). Newbury Park, CA: Sage.
- Joreskog, K.G., & Sorbom, D. (1986). *LISREL: Analysis of linear structural relationships by the method of maximum likelihood, instrumental variables and least squares methods*. Mooresville, NC: Scientific Software International.
- Joreskog, K.G., & Sorbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Chicago, IL: Scientific Software International.
- Joreskog, K.G., & Sorbom, D. (1996). *LISREL 8: User's reference guide*. Chicago, IL: Scientific Software International.
- Kahn, R.L., & Byosiere, P. (1992). Stress in organizations. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp. 571–650). Palo Alto, CA: Consulting Psychologists Press.
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoeck, J.D., & Rosenthal, R.A. (1964). *Organizational stress: Studies in role conflict and ambiguity*. New York: Wiley.
- Kakabadse, A., Ludlow, R., & Vinnicombe, S. (Eds.). (1988). *Working in organizations*. London: Penguin Books.
- Karasek, R., & Theorell, T. (Eds.). (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Kemery, E.R., Bedeian, A.G., Mossholder, K.W., & Touliatos, J. (1985). Outcomes of role stress: A multisample constructive replication. *Academy of Management Journal*, 28(2), 363–375.
- Kulik, C.T., & Oldham, G.R. (1987). Work design as an approach to person–environment fit. *Journal of Vocational Behaviour*, 31(3), 278–296.
- Lait, J., & Wallace, J.E. (2002). Stress at work: A study of organizational–professional conflict and unmet expectations. *Industrial Relations*, 57(3), 463–490.

- Leiter, M.P. (1991). Coping patterns as predictors of burnout: The function of control and escapist coping. *Journal of Occupational Behaviour*, 12(2), 123–144.
- Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297–1349). Chicago: Rand-McNally.
- Lysonski, S., & Andrews, G. (1990). Effects of moderating variables on product managers' behaviour. *Psychological Reports*, 66(1), 295–306.
- Marcoulides, G.A., & Schumacker, R.E. (1996). *Advanced structural equation modeling: Issues and techniques*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Matteson, M.T., & Ivancevich, J.M. (1999). *Organisational behaviour and management*. New York: McGraw Hill.
- McGrath, J.E. (1976). Stress and behaviour in organizations. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1351–1359). Chicago: Rand-McNally.
- Miller, K., & Ellis, B.H. (1990). An integrated model of communication, stress and burnout in the workplace. *Communication Research*, 17(3), 300–326.
- Mirovisky, J., & Ross, C.E. (1986). Social patterns of distress. *Annual Review of Sociology*, 12(1), 23–45.
- Mitchel, J.O. (1981). The effects of intentions, tenure, personal, and organizational variables on managerial turnover. *Academy of Management Journal*, 24(4), 742–751.
- Mobley, W.H., Horner, S.O., & Hollingsworth, A.T. (1978). An evaluation of precursors of hospital employee turnover. *Journal of Applied Psychology*, 63(4), 408–414.
- Mohr, L.B. (1971). Organizational technology and organizational structure. *Administrative Science Quarterly*, 16(4), 444–459.
- Monsen, E., & Boss, R.W. (2009). The impact of strategic entrepreneurship inside the organization: Examining job stress and employee retention. *Entrepreneurship Theory and Practice*, 33(1), 71–104.
- Newton, T.J., & Keenan, A. (1990). The moderating effect of the type A behaviour pattern and locus of control upon the relationship between change in job demands and change in psychological strain. *Human Relations*, 43(12), 1229–1256.
- Niehoff, B.P., & Moorman, R.H. (1993). Justice as a mediator of the relationship between methods of monitoring and organizational behaviour. *Academy of Management Journal*, 36(3), 527–556.
- Noblet, A., Rodwell, J., & Allisey, A. (2009). Job stress in the law enforcement sector: Comparing the linear, non-linear and interaction effects of working conditions. *Stress and Health*, 25(1), 111–120.
- Nunnally, J. (1967). *Psychometric theory*. New York: McGraw-Hill.
- Pines, A. (1993). Burnout: An existential perspective. In W.B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 19–32). Washington, DC: Taylor and Francis.
- Pottage, D., & Huxley, P. (1996). Stress and mental health social work: A developmental perspective. *International Journal of Social Psychiatry*, 42(2), 124–131.
- Rebele, J.E., & Michaels, R.E. (1990). Independent auditors' role stress: Antecedent, outcome and moderating variables. *Behavioural Research in Accounting*, 2(1), 124–153.
- Rhoads, G.K., Singh, J., & Goodell, P.W. (1994). The multiple dimensions of role ambiguity and their impact upon psychological and behavioural outcomes of industrial salespeople. *Journal of Personal Selling and Sales Management*, 14(3), 1–24.
- Rizzo, J.R., House, R.J., & Lirtzman, S.I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15(2), 150–163.
- Robbins, S.P. (2001). *Organisational behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Roberts, J.A., Lapidus, R.S., & Chonko, L.B. (1997). Salesperson and stress: The moderating role of locus of control on work stressors and felt stress. *Journal of Marketing Theory and Practice*, 5(3), 93–108.
- Sager, J.K. (1994). A structural model depicting salespeople's job stress. *Journal of the Academy of Marketing Science*, 22(1), 74–84.
- Sager, J.K., & Wilson, P.H. (1995). Clarification of the meaning of job stress in the context of sales force research. *Journal of Personal Selling & Sales Management*, 15(1), 51–63.
- Schaefer, J.A., & Moos, R.H. (1993). Relationship, task and system stressors in the health-care workplace. *Journal of Community and Applied Social Psychology*, 3(4), 285–298.

- Schaubroeck, J., Cotton, J.L., & Jennings, K.R. (1989). Antecedents and consequences of role stress: A covariance structure analysis. *Journal of Organizational Behaviour*, 10(1), 35–58.
- Schuler, R.S. (1980). Definition and conceptualization of stress in organizations. *Organization Behaviour and Human Performance*, 25(2), 184–215.
- Schuler, R.S., Aldag, R.J., & Brief, A.P. (1977). Role conflict and ambiguity: A scale analysis. *Organizational Behaviour and Human Performance*, 20(1), 111–128.
- Schumacker, R.E., & Lomax, R.G. (1996). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Senatra, P.T. (1980). Role conflict, role ambiguity and organizational climate in a public accounting firm. *The Accounting Review*, 55(4), 594–603.
- Singh, J. (1993). Boundary role ambiguity: Facts, determinants, and impacts. *Journal of Marketing*, 57(2), 11–31.
- Singh, J. (1998). Striking a balance in boundary-spanning positions: An investigation of some unconventional influences of role stressors and job characteristics on outcomes of salespeople. *Journal of Marketing*, 62(3), 69–86.
- Sohi, R.S. (1996). The effects of environmental dynamism and heterogeneity on salespeople's role perceptions, performance and job satisfaction. *European Journal of Marketing*, 30(7), 49–67.
- Somers, M.J. (2009). The combined influence of affective, continuance and normative commitment on employee withdrawal. *Journal of Vocational Behaviour*, 74(1), 75–81.
- Souder, W.E. (1981). Disharmony between R&D and marketing. *Industrial Marketing Management*, 10(1), 67–73.
- Spector, P.E. (2003). *Industrial and organizational psychology: Research and practice*. New York: Wiley.
- Teas, R.K. (1981). An empirical test of models of salesperson's job expectancy and instrumentality perceptions. *Journal of Marketing Research*, 18(2), 209–226.
- Teas, R.K. (1983). Supervisory behaviour, role stress and the job satisfaction of industrial salespeople. *Journal of Marketing Research*, 20(1), 84–91.
- Tett, R.P., & Meyer, J.P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *Personnel Psychology*, 46(2), 259–293.
- Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality, and measurement. *Management Science*, 35(8), 942–962.
- Von Onciul, J. (1996). Stress at work. *British Medical Journal*, 313, 745–748.
- Voydanoff, P. (2002). Linkages between the work–family interface and work, family, and individual outcomes: An integrative model. *Journal of Family Issues*, 23(1), 138–164.
- Walker, O.C., Jr., Churchill, G.A., & Ford, N.M. (1975). Organizational determinants of the industrial salesman's role conflict and ambiguity. *Journal of Marketing*, 39(1), 32–39.
- Williams, E.S., Konrad, T.R., Scheckler, W.E., Pathman, D.R., Donald, E., Linzer, M., et al. (2001). Understanding physicians' intentions to withdraw from practices: The role of job satisfaction, job stress, mental and physical health. *Health Care Management Review*, 26(1), 7–19.
- Wolfgang, A.P. (1989). Substance abuse potential and job stress: A study of pharmacists, physicians, and nurses. *Journal of Pharmaceutical Marketing & Management*, 3(4), 97–110.
- Xie, J.L., & Johns, G. (1995). Job scope and stress: Can job scope be too high? *Academy of Management Journal*, 38(5), 1288–1309.