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In the name of God, most Gracious, most Compassionate

"Proclaim (or read)! In the name of your Lord, who created;

Created man, out of a clot of congealed blood:

Proclaim! And your Lord is most bountiful,

He who taught you to write,

Taught man that which he knew not"

(Qur'an, Iqra (Read): 1-5)

Declaration

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

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i

Acknowledgement

Any who is (so) grateful does so to the profit of his own soul; but if any is ungrateful, verily Allah is free of all wants, worthy of all praise." (Qur'an 31:12).

All praise to Allah, He is our Creator, Sustainer, and Cherisher. "It is you [Allah] we worship and you we ask for help" (Qur'an, 1: 5). Everything comes from Him. Only when we gain His love, mercy and guidance can we attain success. Therefore, I want to present my deepest gratitude to my lord for all the favours He has bestowed upon me, for granting all those silent prayers, and for holding my hand whenever I most needed it. I wouldn't have become what I am today without His help and guidance. Surely He has always chosen the best for me.

I owe considerable thanks to all my supervisors as their constant support and close supervision helped me transform my research ideas into a coherent piece of work. First of all, I present my heartfelt gratitude to my primary supervisor, Professor Keith Whitfield. I still remember my first meeting with him on the second day of my arrival in UK. I was very nervous and shaky and he comforted me with his kind words 'do not worry Uzma you are in safe hands'. His continuous reassurances became a driving force for me. He always believed in me more than I believed in myself and he never forgot to remind me that in every single meeting that we had. I would like to take this opportunity to tell him that having him as my supervisor is the best thing that happened to me during my PhD. I also owe a lot of gratitude to my second supervisor, Dr Shumaila Yousafzai, who introduced me to the methods of meta-analysis during her lectures. I have learned a lot from her both on the academic front and personal life. Her honest and sincere remark, Uzma when I look at you I see myself, proved to be my greatest motivator. She has always been a great friend and a true mentor. Furthermore, I feel highly indebted to Dr Peter Morgan, my third supervisor, for his support and guidance with the statistical analyses. I found him a very nice, jolly and humble being.

Doing a PhD was like a life time dream for me and its one of the decisions I am really proud of. Along with many other people, my friends also played an important role in helping me to transform this dream into reality. I would like to take this opportunity

Abstract

The objective of this thesis is to develop a conceptual model that determines how employee perceptions of their work environments are related to their wellbeing and behaviour. This thesis replicates and extends job demands-control-support (JDCS) theory by integrating variables associated with perceived work environment characteristics (job demands, autonomy, managerial support, and family support), general wellbeing (anxiety), job-related wellbeing (job satisfaction and organization commitment), behaviour (turnover), personal characteristics (male versus female employees), and organizational characteristics (public versus private sectors) into a coherent model. The structural equation modelling technique is used to validate of the measurement model and for examining the inter-relationships among these variables at both the individual and workplace level. For the purpose of analysis, data has been taken from 2004 Workplace Employment Relations Survey (WERS 2004).

At individual level, the findings suggest that employee perceptions of their work environment are associated with their general and job-related wellbeing. The empirical findings show that: (1) higher job demands placed on employees and perceived lack of family support influence job attitudes through their effect on anxiety, (2) high job control and managerial support reduces work related anxiety and increases job satisfaction and organization commitment, and (3) male and female employees do not perceive their work environments differently.

At workplace level, the findings suggest that employee shared perceptions of their work environment are associated with their wellbeing and behaviour. The empirical findings show that: (1) higher job demands placed on employees increases their work related anxiety and reduces their job satisfaction in private workplaces, (2) high job control and managerial support increases job satisfaction and organization commitment, (3) perceived lack of family support reduces organization commitment in private sector, (4) job satisfaction is the only direct antecedent of turnover, (5) of work environment characteristics, autonomy and managerial support are indirect antecedents of turnover, (6) lack of family support reduces organization commitment in private sector. Overall, the thesis indicates that while JDCS theory is useful in explaining employees psychological and health related wellbeing, extending theory to include family support and using extended theory to predict job-related wellbeing and turnover increases our understanding of the underlying phenomena.

Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction

1.1 Introduction

Voluntary employee turnover is an important area of inquiry. A high level of turnover is typically seen as dysfunctional but not all turnover is harmful (Abelson and Baysinger, 1984; Glebbeek and Bax, 2004), thus suggesting that for most organizations there is an optimal turnover rate (Glebbeek and Bax, 2004). Although the mainstream literature has primarily focused on dysfunctional turnover being a problem for the organizations, the positive consequences of turnover have not been ignored (Staw, 1980a; Mowday et al, 1982; Mobley, 1982). Turnover may be a positive outcome when the decision to leave provides individuals with the opportunity to improve their job situation by obtaining a better fit with the job and organization. In stable organizations where new positions cannot be created, turnover may be one of the few ways to hire new employees (Staw, 1980b). Nonetheless, dysfunctional employee turnover has become one of the most widely researched areas in the field of organizational behaviour (Mowday et al, 1982; Cotton and Tuttle, 1986; Griffeth et al, 2000) partly because of the perception of significant negative consequences of turnover (Mowday et al, 1982; Dalton and Todor, 1993; Hom and Griffeth, 1995).

1.1.1 Consequences of turnover

The consequences of turnover have been examined at three levels: individual, workgroup and organizational level (Mowday et al, 1982). At the individual level, negative consequences are recognized for both leavers and stayers. Consequences for leavers include the loss of seniority, non-vested benefits and stress from changing job, workplace and relationships with previous workers, the need to terminate personal and family social networks and disruption to the spouse's career (Mowday et al, 1982; Hom and Griffeth, 1995). Turnover results in increased work loads, stress, uncertainty and decreased performance for remaining employees until a replacement is found. Even when a replacement is found, it takes a while to train the new

1

employee and considerable time may be required before the new employee is able to deliver effective performance. Because of the increased work demands, the awareness of the existence of better opportunities in other organizations and the loss of friendly relations may lead to less positive attitudes among the remaining employees (Mowday et al, 1982).

At the workgroup level, turnover may threaten group effectiveness, particularly when a key group member or high performer leaves. Mowday et al (1982) argued that turnover may be more disruptive in small groups. Unless replacements are quickly found, group members have to share the workload of the leaving person. The increased workload may become a source of dissatisfaction for remaining group members and lowers their performance as well (Hom and Griffeth, 1995). Also, group members have to spend considerable time in socializing, educating and training the new member at the expense of time that should be directed towards task accomplishment.

The consequences of turnover have also been examined at the organization level (Price, 1977; Mobley, 1982; Mowday et al, 1982; Dalton and Todor, 1993). The costs include administrative costs for releasing an employee, recruitment, selection, training and the socialization of a new employee (Dalton and Todor, 1993). Organizations with higher turnover suffer from lost productivity when an employee decides to terminate his/her employment and continues until the new hire masters the job (Mowday et al, 1982; Dalton and Todor, 1993; Hom and Griffeth, 1995). It may also be very difficult to replace a high performer than a low performer and even more difficult to replace employees with specialized skills than employees engaged in routine jobs. Turnover may also have a demoralizing effect on current employees and a disruptive effect on the flow of work during peak periods (Mowday et al, 1982; Hom and Griffeth, 1995). Organizations usually adopt centralized decision making in their attempt to reduce turnover. However, higher levels of turnover are expected in more centralized decision making. Centralization of decision making increases the importance of certain key personnel in organizations and when the key person leaves, the disruption caused by turnover is higher (Mowday et al, 1982).

The most important consequence of turnover is the economic cost of turnover for organizations (Hom and Griffith, 1995). Traditionally, three basic components are considered when determining overall employee turnover cost: separation costs, replacement costs, and training costs (Cascio, 1986). These costs, depending on the particular job, can easily run between 1.5 and 2.5 times the annual salary of the incumbent job holder (Cascio, 2003). In United Kingdom, the average recruitment cost of filling a vacancy per employee is reported as £4,667, increasing to £5,800 per employee when organisations also consider the associated labour turnover costs (CIPD, 2008). The labour turnover costs include: vacancy cover costs, redundancy costs, recruitment/selection costs, and training and induction costs. The labour turnover costs per employee range between £2,750 for manual workers and £20,000 for senior managers/directors (CIPD, 2008). These costs project the severity of the matter.

The average turnover rate in the United Kingdom was about 18% in year 2006-07 and 17% in year 2008, although this varies widely by sector of employment and the industry. The private sector experiences the highest voluntary turnover (13.4%) closely followed by the voluntary, community and not-for-profit sectors (12%). However, the voluntary turnover rate for manufacturing and production and for public services remains at 9% each. Of the industry, the highest levels of turnover (30%) are found in 'hotels, catering and leisure' in private sector services groups. In manufacturing and production, highest turnover levels (20.3%) are observed in 'agriculture and forestry'. The 'care service' reported the highest level of turnover (17.7%) among all the voluntary community services. Among the public services, local government exhibited the highest level of turnover (11.2%). Of the occupations, services employees have highest turnover (16.9%) followed by managers and professional (14.1%) employees (CIPD report, 2008).

Most importantly, the number of organizations feeling the negative consequences of turnover has increased. In 2006, 65% percent organizations reported the negative effects of turnover on business performance (CIPD report, 2006). The percentage of organizations reporting the negative effect to the business performance increased to 71% in 2007 (CIPD report, 2007) and 74% percent in 2008 (CIPD Report, 2008). Thus,

past research on turnover in United Kingdom. In doing so, gaps in the empi
research are identified that need to be addressed by future research, the objectiv
present research are outlined, and the contribution of the present research is cle
articulated. Thus, studies on turnover in British workplaces are reviewed to add
following questions:

1. What aspects of turnover have been researched?
2. What theoretical perspectives have been adopted?
3. Who has been the main research target (e.g. individuals, workpli
   industries or sectors etc)?
4. What methods have been used (e.g. case study, survey, interviews, l
   scale secondary data etc.)?
5. What are some of the areas future research should focus on?
6. What present research will contribute in order to bridge the gaps?

Studies are included in the review if they have analysed data from Br
workplaces, use voluntary turnover as one of the outcome variable, and
published in the period between 1990 and 2009 to capture the latest trends in
turnover research. A search for articles was made using voluntary separa
voluntary turnover, employee turnover, mobility, and UK as key word
university's electronic journal database. A total of 12 articles were deemed rele
Each of the articles is reviewed in order to address the questions given abov
review of studies involving turnover as an outcome variable, based on UK da
given in Table 1.1.

Inspection of empirical studies on employee turnover and its antecedents indic
that the majority of studies use regression analysis, often examining other coi

4

variables (personal and organizational) as well. Except for Greenhalgh and Mavrotas (1996), all studies have analysed data at workplace or company level. Turnover is typically measured by calculating voluntary turnover rates (number of employees who resigned in last 12 months / total number of employees) at the firm/workplace level for all employees except for three studies (Greenhalgh and Mavrotas, 1996; Conyon, 1998; Cosh and Hughes, 1997). In Greenhalgh and Mavrotas (1996), the turnover has been measured for individual employees' from their response to question on change of employer during past year. Whereas, Conyon (1998) and Cosh and Hughes (1997) have used company CEO's as study population and used a measure of executive separation which includes resignation, dismissal and retirement. A total of six out of twelve studies are based on WERS data (e.g. Brown et al, 2009; Guest et al, 2000; Jones et al, 2009; Martin, 2003; Ramsay et al, 2000; Sengupta, 2005). Of these six studies, one study used WIRS 1990 in conjunction with EMSPS 1991 (e.g. Martin, 2003), three studies used WERS 1998 survey (e.g. Guest et al, 2000; Ramsay et al, 2000; Sengupta, 1998), and two used WERS 2004 survey (e.g. Brown et al, 2009; Jones et al, 2009). Prior to the advent of WERS data, there had been very few studies of voluntary labour turnover in the United Kingdom. The reason was that the data was available only on employee separations (quits and layoffs) and it was difficult to separate voluntary separations (quits) from overall separation (Burgess and Nickell, 1990). It is noteworthy here that, despite WERS 1998 and 2004 include a large set of variables that have been identified as antecedents of turnover in mainstream literature, studies on voluntary turnover have not increased.

Two strands of research can be clearly observed in the studies involving turnover as an outcome variable. The first one is based on labour economic theories and the other one is based on HRM theories of high commitment and involvement. In the studies from the labour economics field, turnover has been examined exclusively as an outcome of interest. On the other hand, in the studies based on HRM theories, turnover is examined as one of the many indicators of workplace performance. Other variables measuring workplace performance along with turnover are financial performance, productivity, absence rates, quality, and labour costs. Where the focus of studies from labour economics is on the relationship between training, wages and turnover; the focus of HRM driven studies is on the association of specific HRM practices and firms' performance including turnover.

Table 1.1: Summary of employee turnover studies based on WERS dataset

No.	Authors (year)	Publication	Sample/Data set	Variables	Methodology	Findings
1.	Brown et al (2009)	Economic Modeling, 26; 3, 689.	WERS 2004 1900 workplaces	Turnover, performance	Workplace level analysis. Estimation done using ordered probit analysis.	Results support the standard inverse relationship between the quit rate and firm performance where firms unilaterally choose the wage and generally support a positive relationship between firm performance and the quit rate where trade unions and organization policy influence wage setting.
2.	Conyon (1998)	Oxford Bulletin of Economics and Statistics, 60; 4, 485.	Unbalanced panel of 184 companies between 1986 and 1994.	Director's pay, CEO turnover (dismissal), stock market performance	Company level analysis using Logit regression	Directors' pay is significantly linked to measures of company performance in a sample of large UK companies during the late 1980s and 1990s. There is a robust inverse relationship between CEO turnover and pre-dated stock market company performance in a sample of large UK companies between 1986 and 1994.
3.	Cosh and Hughes (1997)	International Journal of Industrial Organization, 15; 4, 469.	64 companies in UK electrical engineering industry in the time period 1989-1994.	Executive remuneration, Executive turnover (resignation, dismissal, and retirement), board structure, performance.	Company level analysis using regression	CEO turnover is positively correlated with company's poor performance (return on capital employed).
4.	Dalton and Klaauw (1999)	The Review of Economics and Statistics,	Large cross section data set on UK	Teacher wages, relative wages, voluntary quits,	The data set provides information about 1980-1987 periods in	The explicit modeling of wage prospects in teaching and outside teaching showed that higher opportunity wages

		81; 3, 543.	graduates in 1980 (3484 men, 2614 women).	involuntary quits.	their early career. 923 were full time school teachers. Regression was used to estimate the effect of wages and relative wages on voluntary and involuntary separations.	increase the tendency among teachers to switch their jobs or careers and leave voluntarily. Conversely, teacher wages explained the involuntary quits or quits for family reasons.
5.	Greenhalgh and Mavrotas (1996)	British Journal of Industrial Relations, 34; 1, 131.	Labour force surveys 1984, 1989	Training, job mobility, new technology, gender.	Individual level analysis using logistic regression.	Probability of obtaining more training was higher in 1989 (boom) compared to 1984 (slump) labour market. Turnover was high in 1989 due to expanding employment opportunities. Separation cost was higher due to training investments. Worker mobility was a serious problem in private sector than public. Labour mobility between firms is an integral feature of British economy.
6.	Guest et al (2000)	IPD report	WERS 1998	HR practices, HR strategy, employee consultation, involvement, job satisfaction and organization commitment, performance (financial, productivity, quality, labour cost, change in productivity, absence and labour turnover)	Workplace level analysis based on matched responses from management questionnaire, employee survey, and financial performance questionnaire.	Large numbers of HR practices are associated with positive outcomes for employees (job satisfaction, commitment) in private sector. Large number of HR practices is associated with positive outcomes for organizations (labour productivity, quality, productivity change, lower turnover, and financial performance). Job satisfaction and organization commitment act as mediators between the use of HR practices and management rated performance.
7.	Guest et al	British	366 UK	HR practices (R & S,	Data on HR practices	The results showed a significant association between

	(2003)	Journal of Industrial Relations, 41; 2, 291.	companies	T & D, appraisal, FF, job design, security, communication and internal labour market), performance (labour productivity, financials, labour turnover, absence, and industrial conflict)	and subjective performance were collected through structured questionnaires using telephone interviews. Data on employee numbers, sales and financial performance were obtained from Dun and Bradstreet.	greater use of HR practices and lower turnover. The association was significant in manufacturing sector but not in services sector. No significant association was found between HR practices and labour productivity. Although productivity was higher in services sector. The association between HR practices and productivity was not significant in both sectors. Also a significant association was found between HRM and profit per employee. Association between financial performance and HRM is stronger for manufacturing sector. When subjective measures of performance were used, no major differences for two sectors were found.
8.	Jones et al (2009)	Labour, 23; 1, 139.	WERS 2004	Training, job satisfaction, absence, turnover, financial performance, labour productivity, and product quality.	Training and job satisfaction measures were derived from employee survey and measures of performance were derived from management questionnaire. Workplace level analysis was carried out using ordered	Several measures of performance are analyzed including absence, turnover, financial performance, labour productivity, and product quality. Training is positively associated with job satisfaction. Training has a stronger impact on job satisfaction of men than women. Training is significantly positively associated with financial performance and productivity, however, the negative association between training and turnover was not significant. The effect of satisfaction indicator on turnover was insignificant; however, facets including initiative and influence were statistically significant.

					probit estimation.	
9.	Martin (2003)	Labour, 17; 3, 391.	EMSPS 1991 and WIRS 1990	Union, training, technology, wages, skills, gender, turnover rates	Workplace level analysis using weighted least squares.	Wages are negatively correlated with turnover. Training is associated with lower turnover rates; however, training has a positive association with turnover if employees are trained to be multi skilled. Turnover is significantly high when more workers are manual, females and part time.
10.	Ramsay et al (2000)	British Journal of Industrial Relations, 38; 4, 501.	WERS 1998	HPWS practices, performance variables (financial, productivity, quality, absence and labour turnover), intermediate variables (commitment, discretion and job strain)	Workplace level analysis based on matched responses from management questionnaire, employee survey, and financial performance questionnaire. Factor analysis was employed to create systems of HR practices and regression analysis was used to test hypothesis.	HPWS were organized into three subsets: decision involvement, incentive schemes, and employee development. The measures of practices in each of these subsets were drawn from management questionnaire. The analysis showed some support for an association between HPWS practices and mangers ratings of workplace performance. Also some support was reported for the association between HPWS practices and employees perceived discretion, commitment, pay satisfaction, job security and interpersonal relationships.
11.	Sengupta (2005)	Unpublished Doctoral Dissertation	WERS 1998	Employee share ownership schemes, commitment, turnover, and performance	Workplace level analysis using probit regression	Share ownership schemes have a negative relationship with turnover rates. Organization commitment (loyalty) is negatively related to voluntary turnover rates.
12.	Wilson et al (1990)	British Journal of Industrial Relations, 28;	52 engineering firms in UK	Perceived participation in decision making, Financial	Firm level analysis	Wage rates, fringe benefits, firm size, profit-sharing; share ownership schemes, participation, and union presence are negatively related to turnover rates.

2, 197.	participation through profit sharing, ownership schemes, fringe benefits, union presence, turnover

EMSPS: Employer's Manpower and Skills Practices Survey
LFS: Labour Force Survey
WIRS: Workplace Industrial Relations Survey
WERS: Workplace Employment Relations Survey

1.1.2.1 Studies from Labour Economics perspective

In a total of 8 samples, turnover was studied in relation to some measures of training, technology, wages, financial participation and financial performance (Brown et al, 2009; Conyon, 1998; Cosh and Hughes, 1997; Dalton and Klaauw, 1999; Greenhalgh and Mavrotas, 1996; Jones et al, 2009; Martin, 2003; Wilson et al, 1990). In these studies the commonly reported methods of data collection included: primary collection of data through interviews and questionnaire surveys, and the use of secondary data sets. The data sets used to serve the analyses objectives include Workplace Industrial Relations Survey (WIRS) 1990, Workplace Employment Relations Survey (WERS) 1998 and 2004, Employer's Manpower and Skills Practices Survey (EMSPS) 1991, Labour Force Survey (LFS) 1984, 1989, and large cross section data set on UK graduates in 1980. The level of analysis had been the firm or workplace, with the exception of one study (e.g. Greenhalgh and Mavrotas, 1996) where the level of analysis was the individual. Fewer studies have targeted a specific population, such as executive directors (e.g. Greenhalgh and Mavrotas, 1996; Conyon, 1998) and teachers (e.g. Dalton and Klaauw, 1999), while the rest have used a wider population to study the relationship of wages, training and turnover.

The contributing economic theories are human capital theory, wage growth theory (Munasinghe, 2000), and the efficiency wage model (Garino and Martin, 2007). Recent years have witnessed extensive research on training for its association with productivity gains. The main motivating factor has probably been the realization that human capital can be expected to accumulate with training. Human capital theory argues that skills are traded in competitive labour markets (Coff, 1997), thus training influences the wages of an individual in the external labour market. In order to retain the trained employee, the firm will increase the wages of trained employee to a level that will make it more improbable for the individual to find an acceptable alternative opportunity (Bosworth et al, 1991). Wages are expected to increase to the extent that a worker is able to capture some of the return to this capital (Felli and Harris, 1996). Employers, therefore, will be willing to invest in specific training because it cannot be transferred to outside firms (Becker, 1964); since these skills are applicable in one firm and there is no competitive market to bid up wages (Coff, 1997). Studies on

training have generally found a positive effect on wages and lower employee turnover (Brown, 1990; Martin, 2003; Jones et al, 2009). Jones et al (2009) using data from WERS 2004 studied the impact of training on turnover and found that the negative association between training and turnover was not significant. The training measures used by Jones et al (2009) could not differentiate between specific or general training as Martin (2003) had done. Martin (2003) using data from EMSPS 1991 found a negative association between specific training and turnover and a positive association between multi-tasking training and turnover. Martin (2003) also found a positive association between training and wages; thus supporting the arguments of human capital theory. Greenhalgh and Mavrotas (1996) investigated the incidence of training and job mobility for a large sample of British workers in 1984 and 1989. They found that public sector employees have high training and low mobility rates.

The efficiency wage model explains that firms choose wages so as to minimise the marginal cost of labour, balancing the marginal effect of higher wages against the marginal reduction in training costs induced by higher wages (Salop, 1979). Garino and Martin (2007) extended the original model by distinguishing between newly hired and incumbent workers. They argued that latter have more job-specific human capital but may have less general human capital. A higher turnover rate implies that the proportion of new hires in the workforce is larger. If this causes a sufficiently large increase in productivity then an increase in turnover can actually increase profits. Brown et al (2009) using data from WERS 2004 showed that there was inverse relationship between turnover rates and firm performance where firms unilaterally choose the wages. However, this relationship was positive when firms do not choose wages unilaterally i.e. trade unions or organizational policy influenced wage settings.

1.1.2.2 Studies from the HRM perspective

The second strand of research focuses primarily on the relationship between HRM practices and performance (e.g. Guest et al, 2000; Guest et al, 2003; Ramsay et al, 2000), where turnover rates are examined as one of the many objective performance

indicators (Guest et al, 2000; Guest et al, 2003; Ramsay et al, 2000). In one study (e.g. Sengupta, 2005); turnover has been included as a mediating variable in employee share ownership schemes-performance link.

The reported methods of data collection were interviews using structured questionnaires (e.g. Guest et al, 2003) and use of secondary source data (e.g. Guest et al, 2000; Ramsey et al, 2000; Sengupta, 2005). The data sets used to serve the analyses objectives were WERS 1998 (Guest et al, 2000; Ramsey et al, 2000; Sengupta, 2005) and Dun and Bradstreet list of UK based companies (Guest et al, 2003). Dun and Bradstreet's list of UK based companies provides financial information on listed companies such as sales, financial performance, and employee numbers. The level of analysis in all these studies was workplace. The main source of information on HR practices and firms performance within workplaces is managers in all the three studies.

The HRM-performance link is based on the argument that effective deployment of human resources depends on specific bundles of practices (MacDuffie, 1995). Thus, recent research has attempted to categorize HR practices in terms of systems of work performance (e.g. Ramsey et al, 2000). These studies showed that high performance HRM practices are associated with higher performance as indicated by high productivity, lower labour turnover or higher financial indicators (Ramsay et al, 2000; Guest et al, 2000; Guest et al, 2003). These studies have not only tested the direct link between the use of HR practices (bundles) and management-rated performance, but also several employee level intervening variables (e.g. Ramsay et al, 2000; Guest et al, 2000a).

Though the studies (Ramsay et al, 2000; Guest et al, 2000a) have adopted different methodologies, their findings do not differ much. Ramsay et al's (2000) study has been the most thorough analysis of the HRM practices and performance relationship. They have reported a test of three competing explanations of the process through which HRM practices may be linked to corporate performance. The three mechanisms are: the high commitment management (HCM), the high involvement management (HIM), and the labour process (LP) mechanism. The HCM interpretation posits employee commitment as a linking mechanism in the HPWS-

performance relationship; while the HIM mechanism stresses the role of employee discretion as the linking mechanism. Lastly, the LP interpretation argues that, while HPWS practices may provide enhancements in discretion, these come to employees at the expense of high job strain, the latter being a key explanatory factor in improved organizational performance (Ramsay et al, 2000). They (Ramsay et al, 2000) used WERS 1998 management questionnaires on HR practices for creating measures of HPWS practices.

Using factor analysis, they derived three HR systems from a large number of HR practices covered in the management survey. The first HR system includes employment relations practices such as union representation, consultation committees, equal opportunities, recruitment/selection and family friendly practices. The second HR system covered practices such as grievance handling procedures, formal teams, appraisals, formal training and downward communication. The third HR system, they labelled as high performance work practices (HPWP), included profit related pay, employee share ownership, employee consultation, team autonomy, job control and security, communication, internal labour market and total quality management. The measures of the dependent variable, performance, were also drawn from WERS98 management questionnaire. Seven measures of performance were included; namely, management ratings of financial performance, labour productivity, quality of product service, increase in labour productivity, reduction in labour costs, percentage rates of absence and labour turnover. Intervening variables such as organization commitment, job discretion (autonomy), job strain, perceptions of management relations (support and fairness), extrinsic satisfaction (satisfaction with pay) and job security were constructed as composites based on the sum of the standardized scores of items derived from the employee survey questionnaire. Relationships between HPWS scores, performance and intervening variables as specified in HCM, HIM and LP models were examined using regression analysis.

Their analysis showed that of the three systems, HPWP showed a positive association with management ratings of corporate performance. The first and second systems were either unrelated or had a negative effect on performance. The HPWP score was positively related to management reports of greater comparative labour

productivity, financial performance, product service quality, and lower turnover rate. Partially consistent with the prediction of HCM, the findings indicated that the effects of HPWS practices on commitment occur through good management relations; however, commitment was not a strong mediator of the relationship of HPWS practices with workplace performance. Also contrary to the HIM expectation, discretion could not account for the effect of the HPWP score on commitment. The positive relationship between HPWP scores and job strain provided partial support for the LP model. Also, HPWP practices were found to be positively associated with higher job discretion, commitment, pay satisfaction, job security, job strain and good management-employee relationships.

The same data (WERS98) have also been analysed by Guest et al (2000). However, their treatment of data was different from Ramsay et al (2000) in three ways. Firstly, they did a separate analysis for the public and private sector workplaces. Secondly, they could not find any bundles of HR practices using factor analysis and, therefore, used a set of representative practices by adopting the method of counting the number of HR practices reported by management. In this sense, they created an overall index of 17 HR practices being used by management in workplaces. Thirdly, they combined both job satisfaction (4 items) and organization commitment (3 items) in a single scale as scales for both attitudinal variables loaded onto the same indicator during factor analysis. Workplace performance was measured using nine indicators including industrial conflict, turnover levels, absence levels, productivity levels, productivity change, quality, labour costs, sales level, and financial performance. The index of HR practices and performance measures was derived from management questionnaire, whereas workers responses on job satisfaction and organization commitment were derived from employee survey questionnaire and averaged across workplaces to correspond with the level of analysis of HR and performance measures.

The results indicated that public sector workplaces usually adopt a greater number of HR practices than private sector workplaces. Labour turnover was higher in the private sector compared with the public sector. They also found that factors such as: larger establishment size, a high trade union density, and a higher line management involvement influenced the adoption of more HR practices. The results also

15

indicated that the use of a large number of HR practices in the private sector is associated with positive outcomes for both employees (job satisfaction, commitment) and organizations (labour productivity, quality, productivity change, lower turnover, and financial performance). The findings also revealed that job satisfaction and organization commitment act as mediators between the use of HR practices and management-rated performance.

Both studies give us good insight into the HRM-performance link. Despite using different methodologies, both studies have found a positive link between HPWP and performance and HPWP and employees' affective attitudes. However, reliance on management responses to measure organizational policies means that the employee link in the policy-outcome relationship is missing. It is equally important to know how employees' perceive or interpret their experience of organizational policies. It is widely recognized that employees' affective attitudes and behaviours are coloured by their perceptions or experiences of their organizations (Koehler et al, 1976; Schneider, 1990) irrespective of whether that perception is accurate or not (Koehler et al, 1976). Employees' experience of their work and environment has been a topic of great interest to employers concerned with employment relations (Kersley et al, 2006). Despite data available in WERS 2004 on employees' perceptions of their work environment and policies, there is little research examining their impact on employees' affective attitudes, wellbeing and behaviour.

1.1.2.3 Gaps in empirical research

A number of theoretical and methodological gaps have been identified in the turnover research in UK.

Theories explaining turnover behaviour are primarily rooted in the disciplines of sociology, psychology and economics. Though early researchers widely recognized the importance of multi-disciplinary theories to explain the turnover process fully (Mor Barak et al, 2001), this theme seems lacking in the turnover research in UK. The omission of perceived work environment characteristics seems common in the studies on turnover. This is illustrated by the analysis of the data on turnover in the

16

Workplace Employee Relations Survey. Significantly, research on turnover has not expanded to include the perceptual work environment characteristics in the way that research on its link to job satisfaction (Jones et al, 2009), performance (Brown et al, 2009; Jones et al, 2009), training (Jones et al, 2009; Martin, 2003) and both participation in decision making and financial participation (Wilson et al, 1990; Sengupta, 2005) has. Given that the WERS 2004 data set consists of questions in employee survey about employees' experience of their work environment, future research could focus more on incorporating sociological and psychological theories to examine turnover in British workplaces.

UK has a long work-hour culture and an increasing number of workplaces have reported work intensification for their employees (Cully et al, 1999; Hogarth et al, 2000). The work life balance baseline study (Hogarth et al, 2000) reported that concerns about achieving a better work-life balance stems from the fact that the workforce structure in UK has changed significantly. Where 31% women participated in the workforce in 1951, and 46% in 1996; it had reached 50% by the turn of the century. Where 60% mothers of dependent children are economically active; the participation rate of mothers of children under four years of age has been 48%. The study also revealed that most workplaces had employees working in excess of standard working hours. 28% of employees worked long hours (49 or more hours per week) and over 10% worked very long hours (60 or more hours a week). Those most likely to work long hours were men in couple households with dependant children. Almost 15% of these worked 60 or more hours per week. The proportion of men working more than 50 hours a week increased from 24% to 30% between 1988 and 1998, whereas the proportion of women working the same hours increased from 4% to 10% (Harkness, 1999). Work intensification has led to health and wellbeing problems, and retention issues. Organizations are now beginning to address these problems by providing work-family balance policies or Employee Assistance Programs (EAPs) to help employees cope with their stress (Bond et al, 2002).

The focus of research in the area of work-life balance policies, however, has remained on examining the ways in which employers are offering family support to their employees (Hogarth et al, 2000; Dex and Smith, 2002; Bond et al, 2002; Budd and Mumford, 2005) and the impact of these policies on employees' work performance

(Dex et al, 2001; Gray, 2002; Bloom et al, 2007) and their affective attitudes (Dex and Smith, 2002; Mumford and Smith, 2008; Haile, 2007; 2009). Cully et al (1999), using the data from WERS 1998, reported that 60% of workplaces offered one or more family support policies including: work at or from home in normal working hours, work only during school term time, switch from full time to part time employment, and job sharing, with only 4% workplaces offering all four. The most common practice remained switching from full time to part time employment (52% workplaces), whereas the least common practice was working from home (14% workplaces). These policies were more common in public sector workplaces than the private sector. Also, half of the private sector workplaces did not offer any of these policies for employees (Cully et al, 1999). The Baseline Study 2000 also indicated that availability of family care benefits to employees was scarce in general. Public sector workplaces were more likely to provide a facility or information service for family care and these were largely confined to large establishments (Hogarth et al, 2000).

Though studies have focused largely on the provision of work-life balance policies by employers (e.g. Budd and Mumford, 2005; Dex and Smith, 2002; Dex et al, 2001; Bond et al, 2002; Gray, 2002; Hogarth et al, 2000; Bloom et al, 2007), it is equally important to assess employees' perception of these policies for perceived family supportiveness of their work environment. At the individual level of analysis few US studies have examined employees' perceptions of family supportive work environments (e.g. Thomas and Ganster, 1995; Allen, 2001; Mauno et al, 2006); however, very little attention has been given to examining employees perception of the availability of family support policies at the individual (e.g. Mumford and Smith, 2008) or workplace level, in the UK. The extent to which workplaces are perceived as family supportive by employees, and the extent to which employees' perceived family supportiveness is associated with employees' perceived wellbeing, attitudes and behaviours has yet to be explored. The retention of key personnel has been an acute concern for employers since greater investment in employee development have made turnover more costly (Cliffe, 1998). The family friendly policies are seen as an important retention strategy (Hiltrop, 1995).

Where commonly-reported methods of data collection remained interviews, structured questionnaires, and secondary data; analysis is mostly done using least

squares (Cosh and Hughes, 1997; Martin, 2003), logistic (Greenhalgh and Mavrotas, 1996) or ordinal probit regression techniques (Brown et al, 2009; Jones et al, 2009; Sengupta, 2005). These estimation techniques, however, had been largely confined to the examination of bi-variate relationships of turnover with their predictors. There is very little research that uses a more complex statistical technique, such as structural equation modeling (SEM), to allow for model testing and validation. The SEM technique has been frequently used in American literature on voluntary turnover for model testing.

Most of the studies (in Table 1.1) have relied on managers as the sole source for empirical data on HR practices and policies. Employee information has been studied only for attitudinal variables such as job satisfaction, organizational commitment, and job strain measures. The employee survey in WERS 1998 and 2004 provides valuable information by employees on their experience of organizational policies, affective attitudes, and wellbeing. This information has been largely untapped. Employees', not employer's or management's, perception of organizational policies affect their attitudes and behaviour. Hence, future studies need to capture their views on employment relations by bringing employees in context.

A noticeable missing category in the reviewed studies on turnover is the comparison of the public and private sectors. There is only one attempt (e.g. Guest et al, 2000) that recognized the differences between public and private sectors. Guest et al (2000) found that management response to the number of HR practices had no association with outcomes; however, a strong association was reported between HR practices and both employee outcomes and performance. On account of the differences in the public and private sectors, future research should focus more on the moderating role of sector of employment.

The discussion concludes that sufficient understanding of turnover has been gained from a labour-economics perspective. The missing link is a socio-psychological perspective, i.e. employees' perceptions of their work environments and the impact of these perceptions on employees' wellbeing, and turnover. The main stream literature on turnover has reported that employees voluntarily leave their jobs or organizations for a number of organizationally avoidable reasons. These reasons

include: better pay elsewhere, better working conditions elsewhere, problems with leadership/administration, better organization to work for elsewhere, and stay home to look after children (Abelson, 1987). An increasing percentage of employers in UK have reported 'leaving to look after children', 'level of workload', 'level of working hours', and 'lack of support from line-managers' as reasons for employees' turnover (CIPD report, 2006; 2007; 2008). Where, 10% of employers reported 'leaving to look after children' as a reason of turnover in 2006 (CIPD report, 2006), 18% in 2007 (CIPD report, 2007) and 27% in 2008 (CIPD report, 2008) reported it as a reason for turnover. The 'level of workload' was reported as a reason to leave the organization by 6% employers in 2006 (CIPD report, 2006), 11% in 2007 (CIPD report, 2007), and 19% employers in 2008 (CIPD report, 2008). A total of 7% employers reported the 'lack of support from line managers' as a reason for employee turnover in 2006 (CIPD report, 2006), whereas the same reason was reported by 16% employers in years 2007 (CIPD report, 2007) and 2008 (CIPD report, 2008). The increase in the frequency of organizationally avoidable reasons for voluntary turnover stresses the need to further study turnover in British workplaces from a socio-psychological perspective.

1.2 Turnover defined

Despite the literature suggesting that turnover has critical implications for organization functioning in terms of costs and productivity loss (e.g. Cascio, 1991; Cascio and Aguinis, 1998), the extant literature has focused more on turnover intentions. Few theory-driven research efforts have attempted to explain the antecedents to turnover behaviour. Turnover behaviour differs from turnover intentions in that where turnover reflect actual behaviour, turnover intention is an attitude reflecting an employee's desire to leave the organization (Tett and Meyer, 1993) which may or may not translate into actual behaviour. The extant literature has focused more on turnover intentions for two reasons. First, turnover intention is an immediate precursor of actual turnover (e.g. Hom et al, 1984) and considering the difficulty in measuring actual turnover; intentions provide a good replacement of assessing behaviour. Secondly, turnover intentions are meaningful because many employees have the intent to quit but they may not do so because their circumstances

do not allow them. It is emphasized here that these intentions are an attitude and not the actual behaviour, therefore, measures of actual behaviour (turnover rate) warrant examination as a separate entity. The 'turnover' for present research is, therefore defined as 'the ratio of employees who resigned voluntarily from their jobs'. Thus, turnover is calculated by dividing number of resignations in the last 12 month period (voluntary turnover) by total number of employees at the end of the same 12 month period for each establishment. Calculating turnover rate in this manner is consistent with the earlier work in the same area (Mobley, 1982; Terborg and Lee, 1984; George and Bettenhausen, 1990).

1.3 Significance of the study

Despite the attention that employee turnover has attracted at the individual (e.g. Cotton and Tuttle, 1986; Home and Griffith, 1995; Griffith et al, 2000) and organizational level (e.g. Shaw et al, 1998; Meier and Hicklin, 2007), there are multitude of questions that need to be answered. Also, it is important to study turnover for the effects it may have on the viability of organizations and the well being of their employees.

The present research, adopting a socio-psychological perspective, is grounded in the Job demand-control-support (Karasek and Theorell, 1990) theory, perceived organizational support theory (Eisenberger et al., 1986), and social exchange theory (Blau, 1964). Job demand-control-support theory predicts that employee wellbeing will be greatest if employees' have less work demands, high control over their jobs and have high support from supervisors and co-workers. Perceived organizational support theory, which is essentially based on the notion of social exchange, supports a positive association between perceived organizational support and employees attitudes and a negative association between perceived organizational support and turnover. Social exchange theory posits that employees may feel obligated to respond to organizational efforts to improve their overall wellbeing with increased job satisfaction, commitment to the employing organization, and performance, and lessened withdrawal behaviour (Eisenberger et al, 2001; Rhoades and Eisenberger, 2002; Shore and Wayne, 1993). Four kinds of supports have been studied in this

21

thesis: work demands, autonomy, supervisor support and organizational family support (e.g. Ahuja et al, 2007; Sakamoto and Spinks, 2008; Thompson and Prottas, 2005).

This study is important mainly for five reasons. First, this study considers job attitudes (job satisfaction and organization) as endogenous variables in the turnover process. Previous turnover models, on the contrary, have assumed these variables as exogenous (see chapter 2). The effect of job satisfaction and organization commitment on turnover is only part of the equation. It is equally important to explore, confirm, and understand the key antecedents of these job attitudes, such as work environment perceptions at both individual and workplace level. Perceived work environment characteristics are believed to influence employees' job attitudes and wellbeing (Kinicki et al, 2002; Mathieu and Zajac, 1990; Van Der Doeff and Maes, 1999). In turn, job satisfaction and organization commitment have been found to negatively affect turnover (Griffith et al, 2000).

Second, this research extends the Job demand-control-support (JDCS) theory by adding a new type of support to it i.e. 'perceived family support'. A change in the demographic profile of the workforce has led to an increased attention to work and family issues among employers. Both public and private employers are increasingly seeking to help their employees balance their work and family responsibilities in an effort to improve individual performance, job-related attitudes, and retention (Walton, 1985; Morris et al., 1993). Many employers now provide formal family support policies, such as on-site or paid childcare, flexible scheduling, increasing or decreasing work hours, and telecommuting options. However, the effects of implementing such formal policies on employees' wellbeing, attitudes and turnover are not clearly established. Prior research on family-friendly policies in Britain is limited in that it has focused almost exclusively on developing a profile of employers offering family support policies with little attention given to employees' perceptions of the availability of family support.

Third, this study examines the impact of gender on the relationships between perceived work environment characteristics and well being at individual level. Thus, gender is included as a moderator rather than a correlate.

Fourth, this study includes sector of employment as a moderator at workplace level. Although it is known that the work context (environment) and the job characteristics differ between the public and private sectors (Wright, 2001), it is not clear how these characteristics affects employees' job attitudes, wellbeing and turnover in the two sectors. Furthermore, existing research elsewhere (North America) argue that provision of family-friendly policies may vary by sector of employment (Goodstein, 1994; Ingram & Simons, 1995), it is not clear how this variation affect the direction and magnitude of relationship between perceived family support and employees' job attitudes, wellbeing and turnover. Such information is necessary for both employers, who are responsible for providing necessary family support, and for employees deciding which sector to choose.

Fifth, this study extends earlier turnover research by examining turnover process in UK workforce. Workplace Employment Relations Survey (WERS 2004) is used to draw inferences about British workplaces.

1.4 Approach for the study

Mainly drawing on Job demand-control-support (JDCS) theory and social exchange theory (SET), this study examines the relationship between perceived work environment characteristics, job attitudes, perceived wellbeing and turnover. A two-level approach is adopted, since the data on employees' perceptions of their work environments, job satisfaction, organization commitment and wellbeing comes from individuals and turnover data is available at workplace level.

At the individual level, this study examines the effects of perceived work environment characteristics on employees' job attitudes and wellbeing for male and female employees. At the workplace level, this study examines the effects of perceived work environment characteristics on employees' job attitudes, wellbeing, and turnover in the public and private sectors. More specifically, the present research sets out to investigate the following key questions:

1. How do employees' perceptions of their work environments affect their attitudes and wellbeing at individual level?

2. Do male and female employees' perceive their work environments differently? If yes, how does it affect the pathways linking perceived work environments to employees' attitudes and wellbeing at individual level?

3. Can I use employee perceptions of their work environments at individual level to capture shared perceptions (or climate) at workplace level?

4. How employees' shared perceptions of their work environments affect their attitudes, wellbeing and behaviour at workplace level?

5. Do public sector employees perceive their work environments differently from private sector employees? If yes, how does it affect the pathways linking perceived work environments to employees' attitudes, wellbeing and behaviour at workplace level?

6. Do wellbeing and job attitudes mediate the relationship between perceived work environment characteristics and turnover?

1.5 Organization of the study

This study consists of eight chapters in total and the layout is given in Figure 1.1. Chapter 1 not only highlights the importance of further studying turnover but it also brings out the important research questions to extend the research on employee turnover.

Chapter 2 presents a detailed examination of mainstream turnover literature based on a socio-psychological perspective. First, a review of earlier turnover models, which are based on a socio-psychological perspective, is presented. It is argued that these models, the majority of which are developed and tested in US, may not be applicable in UK. In addition, it is argued that employee turnover models need to be context specific, and should consider the impact of gender and sector of employment. Having identified the gap, it is argued that turnover can be explained through two routes. The first route is based on job demand-control-support (JDCS) theory and the second route is based on social exchange theory (SET). The chapter then evaluates the mainstream literature based on JDCS and SET theories to propose

24

the two paths to explain turnover. Given the larger number of published studies based on SET theory, the proposed second route is tested using meta-analysis structural equation modeling (MASEM) technique.

Figure 1.1: Layout of the Thesis

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                    │    Introduction     │
                    │    (Chapter 1)      │
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        ┌───────────────────────────────────────────────┐
        │              Literature Review                 │
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        │  ┌──────────────────┐  ┌──────────────────┐   │
        │  │ Turnover research:│  │ An MASEM analysis│   │
        │  │ A socio-         │  │ of turnover      │   │
        │  │ psychological    │  │ research         │   │
        │  │ perspective      │  │ (Chapter 3)      │   │
        │  │ (Chapter 2)      │  │                  │   │
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                    │ The Research Model  │
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        │  │ Analysis         │  │ equations        │   │
        │  │ (Chapter 6)      │  │ analysis         │   │
        │  │                  │  │ (Chapter 7)      │   │
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                │ Discussion and Conclusion │
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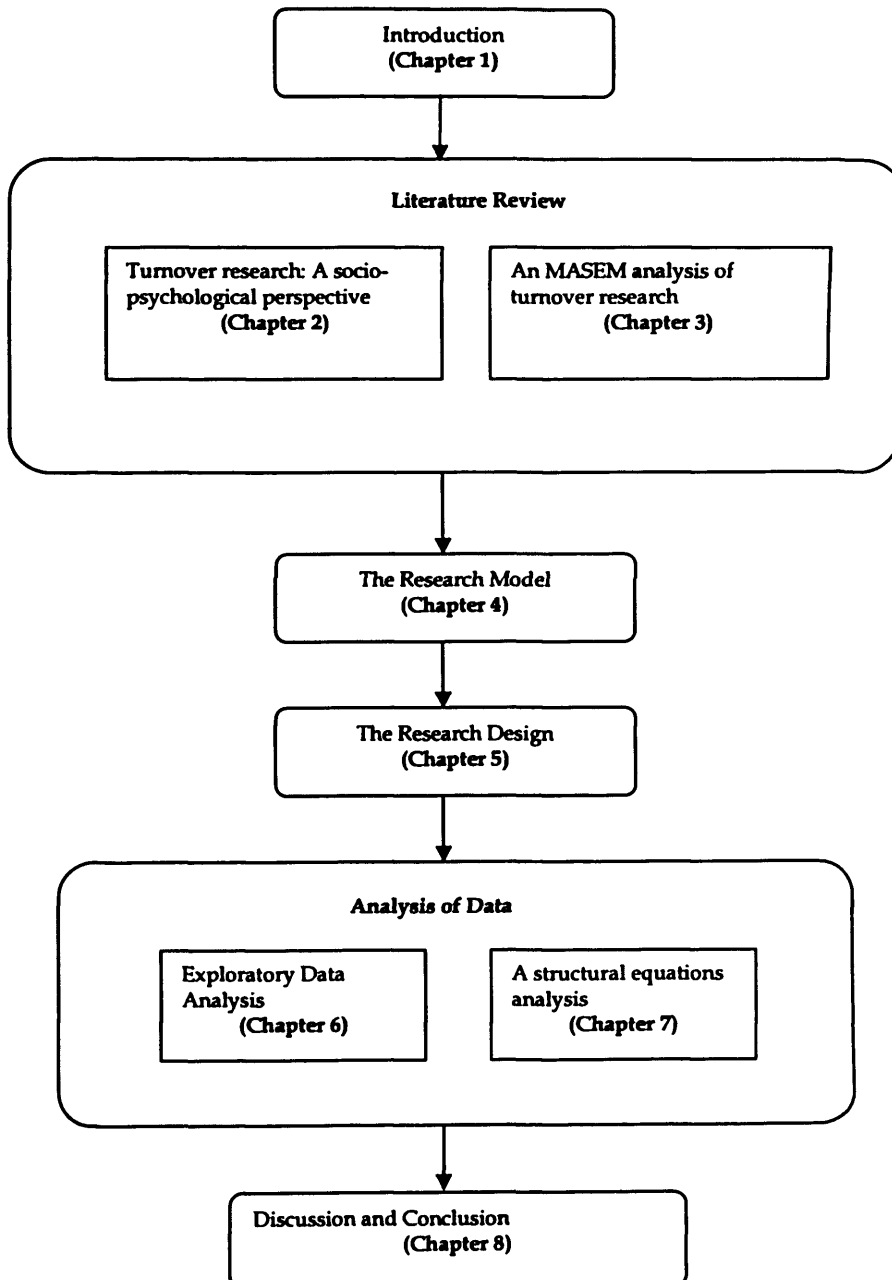
Given the discussion presented in Chapter 2, which argued that the proposed theory can be tested using MASEM techniques, Chapter 3 presents a meta-analysis of the mainstream turnover research. Meta-analysis not only allows integrating the earlier research findings, but it also allows performing the moderator analysis based on sample characteristics. After integrating the research findings, the proposed theory is then tested using structural equation modelling. It is hypothesized that job attitudes mediate the relationship between perceived work environment characteristics and turnover. To test this hypothesis, meta-analysis is combined with a structural equation modelling technique called MASEM. MASEM is a powerful tool for theory testing (Viswesvaran and Ones, 1995).

After the proposed relationships based on social exchange theory are tested and confirmed, the two routes (JDCS & SET) are combined together to develop a framework for present research. The focus of **Chapter 4** is on the conceptualization of an employee turnover model for the present study. Based on a socio-psychological perspective, a number of key explanatory variables are identified. The model is developed on the premise of JDCS, SET theory. This chapter presents a number of hypotheses to be tested using data.

Chapter 5 provides an overview of the methodology used in this study. This chapter includes five sections. The first section justifies the philosophical position (positivist) taken in this research. The second section presents a description of the data set (WERS 2004) to be used for analysis; a profile of respondents and establishments in the sample is presented. The third section explains the data screening methods used in the present study. The fourth and fifth sections present a description of specific data analytic tools to be used at individual and workplace levels respectively.

Chapters 6 and 7 comprise the empirical component of this study. Chapter 6 gives an overview of scale items included in this study, using the exploratory data analysis (EDA) technique. Mosaic plots are used to explore the extent to which male and female employees have different views of their workplaces. This chapter informs the multi-group analysis in Chapter 7.

Chapter 7 presents the analyses of data at both individual and workplace levels using structural equation modelling. The purpose of this chapter is to examine the predictive relationships between work environment perceptions, job attitudes, wellbeing and turnover. This chapter includes three parts. The first part presents a preliminary analysis of the data before final model testing. This section involves data screening, exploratory factor analysis, assessing the consistency of scale items, and justification for the aggregation of individual level data to workplace level. In the second part of this chapter, the model is tested at the individual level to determine the relationship between perceived work environment characteristics and job attitudes and wellbeing. The results of confirmatory factor analysis, unidimensionality, reliability and validity of constructs, structural model, and multi-group analysis based on gender are reported. The third part presents the results of structural model, mediation analysis and multi-group analysis based on sector of employment at workplace level.

Chapter 8 is the final chapter of this study. This chapter presents a discussion of research findings and overall conclusions that may be drawn from the research findings. The chapter also includes a summary of the study's contribution to the literature, the practical implications for public and private sectors, discussion of the limitations of the study, and directions for future research.

Chapter 2

The Socio-psychological Perspective in Turnover Research

2.1 Introduction

The impact of perceptual work environment characteristics on employee turnover can be explained through two routes. These routes are well grounded in psychological and sociological theories. The first route is based on job demand-control-support theory (Karasek and Theorell, 1990), while the second route is based on social exchange theory (Blau, 1964). This chapter reviews and evaluates the existing mainstream literature based on the socio-psychological perspective. Having identified the gaps, the two routes are then used to propose a model for the present research.

2.2 Earlier turnover models based on a socio-psychological perspective

Social scientists concerned with organizational behaviour have made numerous attempts to identify the antecedents of turnover behaviour. A number of models have been proposed to explain the turnover (e.g. March and Simon's 1958; Porter and Steers, 1973; Price, 1977; Mobley, 1977; Mobley et al, 1978; Price and Mueller, 1981; 1986). These models are based on the socio-psychological perspective to explain the voluntary turnover for individuals and have used both internal (job related factors and attitudes) and external (alternative job opportunities) factors.

March and Simon's (1958) model, called the theory of organizational equilibrium, is considered the earliest attempt to model employee turnover. Job satisfaction and perceived alternative opportunities are the key concepts in this theory. The theory posits that employees' decisions to quit are influenced by their perceived ease (alternative opportunities) and desirability of movement (job satisfaction). This model (March and Simon, 1958) became the basis for later models to explain turnover process. Porter and Steers' (1973) model is based on the seminal work of March and Simon (1958). They introduced met-expectations as a key variable in the

28

turnover decision process. The met-expectations are described as a function of organizational factors, work environment, job related and personal factors. The model posits that the inability of the organizations to meet these expectations causes dissatisfaction among employees, which in turn increases employee turnover. Price (1977) proposed that an interaction between job satisfaction (dissatisfaction) and greater 'opportunity of alternative employment' results in turnover. It is hypothesized that employees feel dissatisfied if they receive low pay levels, are less organizationally integrated, instrumental and formal communication in the organization is low, and the organization is highly centralized. Dissatisfaction derives even higher turnover when the opportunity of alternatives is also high. Price and Mueller's (1981, 1986) models of employee turnover process are based on the work of Price (1977). The first expansion of the original model (Price and Mueller, 1981) involves expanding the factors that influence job satisfaction, and 'intentions to stay' was added as a precursor to actual turnover. The model explains that 'job satisfaction' influences the 'intentions to stay' which in turn influence actual 'turnover'. And 'opportunity for alternative jobs' is hypothesized to influence 'turnover' directly. The second revision of the model (Price and Mueller, 1986) also observed an expansion in the factors influencing job satisfaction, and another variable 'commitment' was added as a moderator of job satisfaction-intent to leave relationship.

Mobley (1977), in an attempt to explain the withdrawal process, suggested eight stages for 'turnover/quit'. The model hypothesized that negative evaluations of the job arouse the feelings of dissatisfaction from one's job. Dissatisfaction, in turn, generates thoughts of quitting which compels an individual to evaluate the utility and costs of searching and quitting. If the cost of quitting is low then individuals will have intentions to and search alternatives. When alternatives are found, employees will then compare them to their present job. If the available alternative seems more beneficial, then the employee will be willing to leave the present organization and will eventually do so. Of all the models developed so far to explain the turnover process, Mobley's (1977) model has attracted the most empirical analysis (Mobley, 1982; Hom and Griffeth, 1995). The hypothesis concerning quit intentions as an immediate precursor of turnover has been generally supported. However, several hypothesized relationships involving the probability of finding an acceptable

alternative have remained insignificant. While the probability of finding an acceptable alternative have been found to have a significant relationship with thinking of quitting, it has not been related to search or intention to search as predicted (Mobley, 1982). Mobley's (1977) original model was revised and modified twice (Mobley et al, 1978; Mobley et al, 1979).

Based on Mobley's (1977) model, Mobley et al (1978) conceived various withdrawal cognitions that translate dissatisfaction into voluntary turnover through a causal flow (Hom et al, 1992). The model proposes that dissatisfaction generates thoughts of quitting. Thoughts of quitting lead to search intentions, which in turn lead to quit intentions. And 'quit intentions' is hypothesized as an immediate precursor of turnover. The probability of alternatives is hypothesized to influence search and quit intentions. Mobley et al (1979) model incorporates elements of earlier turnover models and the complexity of the turnover process. Mobley et al (1979) proposed four core antecedents of voluntary turnover: demographic characteristics, job satisfaction, work environment factors, and turnover intentions. The model posits that demographic characteristics influence a person's decision of whether to remain with or leave a job. Work environment factors significantly shape employee job satisfaction, which in turn shapes turnover intention. And finally, turnover intent influences voluntary turnover.

Steers and Mowday's (1981) model has three important inter-relationships: individuals' job expectations and job attitudes; job attitudes and intent to leave; intent to leave, alternative opportunities and turnover. The model posits that individuals' expectations from the job affect their job attitudes. Positive job attitudes reduce intentions to leave the organization. And finally, consistent with the propositions in the earlier models, Steers and Mowday (1981) also hypothesize turnover as a function of intent to leave and/or the availability of alternative jobs.

Thus, the common thread in all the turnover models is 'job satisfaction', 'organization commitment', 'intent to leave' and 'alternative jobs'. Table 2.1 provides a tabular summary of variables that have consistently been used in turnover models.

30

Table 2.1: Comparison across theoretical employee turnover models

Variables	March and Simon (1958)	Porter and Steers (1973)	Price (1977)	Price and Mueller (1981)	Price and Mueller (1986)	Mobley (1977)	Mobley (1979)	Steers and Mowday (1981)
Personal factors:								
Age, gender, tenure, skills, training, personality, professionalism, family responsibility etc.	√			√	√		√	√
Attitudinal variables:								√
Job satisfaction	√	√	√	√	√	√	√	
Organization commitment					√			
Expectations:								√
Met expectations (work environment factors, job related factors and personal factors)		√						
Expectations from present job							√	
Expectations from alternatives							√	
Turnover process variables:								
Thoughts of quitting						√		
Evaluation of present job						√		
Alternative opportunities	√		√	√	√	√	√	√
Turnover intentions				√	√	√	√	√
Work – non work factors:							√	
Objective factors:								
Organization size	√							
Work unit size					√			
Job performance:								√
Labour market factors:								√

31

The personal variables included are age, tenure (e.g. March and Simon, 1958; Mobley et al, 1979; Steers and Mowday, 1981), sex, social status (e.g. March and Simon, 1958), family responsibility, personality (e.g. Mobley et al, 1979; Steers and Mowday, 1981), skills, hierarchical level, and professionalism (e.g. Mobley et al, 1979). Almost all the models have included desire/intentions to move or stay, opportunity of alternatives, and searching for alternatives as turnover-process predictors of turnover. Job satisfaction has been included in almost all the models as a predictor of turnover behaviour (e.g. March and Simon, 1958; Porter and Steers, 1973; Price, 1977; Price and Mueller, 1981; 1986; Mobley, 1977; Mobley et al, 1979; Steers and Mowday, 1981), whereas, one model has used organization commitment as an antecedent to turnover behaviour (e.g. Price and Mueller, 1986). Other variables included are met-expectations (e.g. Porter and Steers, 1973), job expectations (e.g. Mobley et al, 1979; Steers and Mowday, 1981), and utility and comparison of alternatives (e.g. Mobley, 1977; Mobley et al, 1979). Though, these models have broadened our understanding of withdrawal process; however, there are few limitations of these models as well.

2.2.1 Shortcomings in existing turnover models

Based on the review of turnover models, a number of shortcomings in these models are noted. Firstly, all of these models focus on individual behaviour. Organizations may be more interested in the determinants of turnover at the establishment level rather than at the individual employee level, as organizational policies are not developed for each individual employee but for all the employees as a whole. Addressing this shortcoming, it is proposed that an establishment level model of turnover be developed.

Secondly, these models tend to make predictions for all individuals (be males or females), at all levels in the organizational hierarchy (blue or white collar), sector of employment (public or private), and across all locations (US or non US). The moderating effect of organizational context on employee turnover has been reported in a number of studies. For example, Hom et al (1992) and Griffeth et al (2000) in their meta-analytic review of turnover studies have found that turnover intentions and turnover relationship was stronger in a military sample compared to a civilian

32

sample. Dalessio et al (1986) applied Mobley et al's (1978) model to a diverse population of National Guardsmen, hospital employees and clerical staff. They found that, of the twelve hypothesized paths, only six could be applied across all the three populations. Griffeth et al (2000) found that gender composition and the proportion of executives in the sample moderated the age- turnover relationship such that higher concentrations of men and executives attenuated the negative age-turnover relationship. Cotton and Tuttle (1986) found that the satisfaction-turnover and pay-turnover relationships were less reliable for blue collar employees compared to white collar employees. Similarly, Cohen and Hudecek (1993) found that the commitment-turnover relationship was stronger for white collar employees compared to blue collar employees.

Despite the immense interest that withdrawal behaviours have received, it appears that gender has largely been ignored. Researchers have usually included gender as a correlate of turnover (Price, 1977; Blau and Kahn, 1981; Clegg, 1983; Cotton and Tuttle, 1986; Griffeth et al, 2000), observing whether withdrawal rates differ across male and female employees. Generally, researchers have not attempted to examine the moderating role of gender in the process of withdrawal. Few studies that have attempted to study gender generally report different antecedents for withdrawal among male and female employees. Tharenou (1997a), in a qualitative study, found that women leave their organizations in order to advance more than men do. Tharenou (1998) found that women leave organizations to escape male managerial hierarchies. Griffith et al (1997) in Tharenou (1999) found that Canadian executive women left their organizations for advancement, compensation, intellectual stimulation and compatible organizational values but not for family reasons. Marshall (1993) argued that organizational cultures are based on the values and characteristics associated with masculine gender-stereotypes, identified as barriers for women's advancement. More women than men leave because of barriers, the nature of work itself and incompatible social situations (Marshall, 1993).

These studies demonstrate that predictor-turnover relationships vary as a function of organizational context in which the studies are undertaken. The inconsistencies in the research findings may be largely attributed to the effect of organizational context (Hom et al, 1992). Thus, greater understanding of turnover requires the development

of turnover models recognizing the moderating effects of gender, location of study sample, sector of employment, occupation and level in the organization hierarchy (Hom et al, 1992; Mitra et al, 1992). Addressing this shortcoming, the present research includes gender and sector of employment (public versus private) as a moderator in the proposed model.

Third, most of the modeling efforts for voluntary turnover are based on March and Simon's (1958) initially hypothesized two constructs, perceived ease of movement (job alternatives) and perceived desirability of movement (job satisfaction). External job alternatives, beyond an organizations' control, have little value for organizational policy formulation to control employee turnover. Also, recent research has evidenced that job satisfaction plays an important yet minor role in predicting voluntary turnover (Griffeth et al, 2000). Therefore, other factors besides job satisfaction and external job alternatives should be considered for understanding turnover (Mitchell et al, 2001).

Fourth, one commonality in these models is that the attitudinal variables are assumed to be exogenous. However, employees' attitudes, thought to be a function of perceived work environment (Thoresen et al, 2003) which may be influenced through organizational policies, may not be exogenous. Social exchange theory and Job demand-control-support theory support this argument.

Social exchange theory explains the relationship between perceived work environment characteristics, attitudes and behaviour since employees view attitudes and behaviours as acceptable commodities for exchange (Settoon et al, 1996; Coyle-Shapiro and Kessler, 2003). Social exchange may be initiated by an organization's treatment and support of employees. Employees respond to social exchange by increasing positive attitudes beneficial for the organization and reducing negative behaviours in response to organization's fair treatment and support (Blau, 1964). Thus, organizational policies for the well being of employees, as perceived by employees, may determine their attitudes and behaviours. Job demand-control-support theory posits that wellbeing (both general and job related) will be greatest when employees have low demands, high autonomy, and high support (Karasek and

Theorell, 1990; Wood, 2008); and as a result employees will increase their stay with the organization (Houkes et al, 2001).

Thus, a socio-psychological perspective can be employed to explain turnover behaviour in workplaces; wherein perceived work environment characteristics affect employees' affective attitudes and wellbeing, which in turn affect their decision to stay with the organization. The present study draws on these gaps by combining JDCS theory and social exchange theory to develop a model to explain turnover in British workplaces.

2.3 First route: Job demand-control-support (JDCS) theory

The psychological literature has focused on constructs internal to the employee, such as work-related perceptions to explain employee wellbeing (Karasek, 1979), attitudes and turnover (e.g. Mitchell et al, 2001; Stinglehamber and Vandenberghe, 2003; Allen et al, 2003; Maertz et al, 2007). Job demand-control-support (JDCS) theory has guided much research on work, work environment and wellbeing (Karasek, 1979; Karasek and Theorell, 1990).

The Job demand-control (JDC) model (Karasek, 1979) is one of the most influential models in the research on work and wellbeing. This model identifies two important aspects of work: psychological work demands and the degree of control employees have in their jobs. Later research expanded the model by adding a 'social support' dimension to the model (Johnson et al, 1989). Thus, the model is called Job demand-control-support (JDCS) model (Karasek and Theorell, 1990). JDCS model is based on three basic characteristics of the work environment: (1) 'job demands' placed on employees, (2) 'job control' allowing employees to decide how to meet those demands, and (3) 'social support' to protect the individuals against the worst effects of anxiety. Job demands are defined by Karasek (1979) as psychological stressors present in the work environment (e.g. long working hours or psychological work demands). Job control, on the other hand, has been described as the worker's ability to control his/her own activities (Karasek and Theorell, 1990). Social support at work refers to overall levels of help available on the job from both managers and co-

workers (Payne, 1979). The JDCS model predicts that employees' well-being will be greatest when employees perceive low demands, high control, and high supports (Wood, 2008).

According to JDCS model, job demands, job control and social support are crucial to employee wellbeing. The additive version of the model predicts that jobs characterized by high demands, low control, and low support are detrimental for employee wellbeing. However, low strain (low demands, high control, and high social support) and active (high demands, high control, and high social support) jobs have positive effects for employee wellbeing. The buffer hypothesis of the JDCS model states that job control and social support moderates the negative impact of high work demands on employee wellbeing. Where the literature gives considerable support for the additive hypotheses, support for the buffer effects of job control and social support is less consistent (e.g. review by Van Der Doef and Maes, 1999). The practical implications of the two (additive and interactive) versions of hypotheses differ. Evidence supporting the buffer effects of control suggests increasing job control, without any mention for the level of work demands. However, if the strain hypothesis is valid and this is due to the additive effects of work demands and control (or the exclusive effect of high work demands) this strategy would not be effective, for the high demands would still maintain their detrimental effect on the employee well-being. Thus, in this study the additive effects of JDCS are examined for their effects on employee wellbeing.

2.3.1 Evaluation of literature on JDCS

Since the JDCS model was put forth, numerous studies have applied the model and its hypotheses to a broad array of outcomes. Though JDCS has been tested with a variety of physical health and wellbeing related outcomes, here the research on JDCS model and general (anxiety and depression) and job related wellbeing (job satisfaction) is reviewed. The objective is to examine if the research findings support the additive hypothesis which states that high demands, low control and low support has a negative impact on employees general and job related wellbeing. Studies on JDCS model were included for the purpose of this review if they met the

following criteria: (1) studies published between 1990 and 2009; (2) reference was made to JDCS; (3) general or job related wellbeing is included as an outcome variable; and (4) an additive hypothesis is tested. On the basis of these criteria, 23 studies are included in the review and are listed in Table 2.2.

In most of the studies (Table 2.2), the measurement of JDCS dimensions is based on self report questionnaires. Only one study (Stansfeld et al, 1995) used objective data from personnel managers. Comparison of studies in terms of design, sample characteristics, measurement of JDCS dimensions and outcomes, indicate that studies vary in terms of designs, sample characteristics and measurement of JDCS dimensions. A majority of studies typically have used regression analysis to test the main hypotheses. Almost all studies have included various control variables with the main variables.

In all 23 studies, the JDCS model is studied in relation to different measure of wellbeing including anxiety (de Jonge and Schaufeli, 1998; Fletcher and Jones, 1993; Landsbergis et al, 1992; Wood, 2008), depression (Baker et al, 1996; Fletcher and Jones, 1993; Landsbergis et al, 1992; Niedhammer et al, 2006), psychological distress (Barnett and Brennan, 1995; 1997; Bourbonnais et al, 1996; Johnson et al, 1995; Niedhammer et al, 2006; Roxburgh, 1996; 1997), job satisfaction or dissatisfaction (Amick and Celentano, 1991; Cahill and Landsbergis, 1996; Chay, 1993; De Jonge and Schaufeli, 1998; Fletcher and Jones, 1993; Johnson et al, 1995; Landsbergis et al, 1992; Melamed et al, 1991; Moyle, 1995; Parkes and von Rabenau, 1993; Wood, 2008), burnout (Melamed et al, 1991), general wellbeing (Chay, 1993; Stansfeld et al, 1995), and job related worries (Houben et al, 1990), and emotional health (Kawakami et al, 1992; Loscocco and Spitze, 1990). Apart from few studies (Barnett and Brennan, 1997; Johnson et al, 1995; Kawakami et al, 1992) which employed a longitudinal design, all studies are cross sectional and estimated linear relationships. Only three studies estimated the non-linear relationships (Bourbonnais et al, 1996; De Jonge and Schaufeli, 1998; Fletcher and Jones, 1993) of which one was supportive (De Jonge and Schaufeli, 1998).

Table 2.2: Studies on JDCS and wellbeing Link

S. No.	Author /year/journal /vol./issues/page.	Sample size	Industry/ respondents	Location	Demographics	Outcome variables	Methods	Findings
1	Amick and Celentano (1991). Ergonomics, 34; 5, 625.	4903	Postal workers	US	-	Job satisfaction	CS, SR, secondary data from the 1978 survey of postal workers. Path analysis for model testing.	Two types of support included: supervisor and co-worker support. Supervisor support significant; co-worker non significant.
2	Baker et al (1996). Social Science and Medicine, 43; 7, 1145.	1000	Manufacturing employees	US	95% male, 92% hourly workers, 80% white, and average age 44 years.	Depression Negative job feelings	CS, SR, Caplan et al (1975) scale for social support, hierarchical regression is used for data analysis.	Support is measured by co-worker support and supervisor support. Different types of controls are included: decision authority, influence and participation. JDCS hypotheses were confirmed at wave 3 data. Wave 3 is the third survey.
3	Barnett and Brennan (1995). Journal of Organizational Behavior, 16; 3, 259.	504 (240 men, 264 women)	Full time employee men and women in dual earner couples	US	97% Caucasian, average age of men 34.9 and women were 34.2 years.	Psychological distress (anxiety and depression) SCL-90 scale is used.	CS, SR, structural equation modeling using LISREL.	Job control was measured on three dimensions: schedule control, skill discretion, and decision authority. Job demands and skill discretion were related to psychological distress. No significant differences were found for relationships based on gender.
4	Barnett and Brennan (1997). Journal of Organizational Behavior, 18; 3, 253.	201	full time employees in dual earner couples	US	Men aged 34.5 years on average and women aged 33.6 years. Men and	Psychological distress (SCL-90 scale is used).	Longitudinal (2 years), SR measures, 2 stage hierarchical linear modeling for analyzing	Job control was measured as: skill discretion and decision authority. Change in demands over time and change in discretion were related to change in distress. However, decision authority was

					women on average had 16 years of education. Majority of both employed in managerial positions.		longitudinal data.	not significantly related to distress over time. The effect of decision authority was insignificant. Skill discretion had significant main effect on job distress, independent of job demands. Gender interaction effect was insignificant.
5	Bourbonnais et al (1996). Scandinavian Journal of Work, Environment and Health, 22; 2, 139.	4467	White collar workers employed in 8 public organizations.	Canada	-	Psychological distress (PSI index). Karasek scale for demand and control. JCQ to measure social support (supervisor and colleague)	CS, SR, Logistic regression was used for data analysis.	Support for the association of job demands, control and support with psychological distress was found. The interaction effect of support was insignificant.
6	Cahill and Landsbergis (1996). International Journal of Health Services, 26; 4, 731.	4018	Post office employees	-	-	Psychological strain Job satisfaction	CS, SR, Nation wide survey of post office mail handlers. Karasek's Job Content Questionnaire on demands and control. Hierarchical multiple regression for hypotheses testing.	Supervisor support was included as a measure of social support. Women reported higher levels of negative job characteristics, job strain, job dissatisfaction, and sleeping problems compared to men.
7	Chay (1993). Journal of Occupational and Organizational Psychology, 66; 4, 285.	117	Small business owners and employees	England	38.5% females, age 21-56 years, 93% held white collar jobs, 41% single,	Wellbeing (poor mental health) Job satisfaction	CS, SR, Karasek's Job Content Questionnaire on demands and control. 40 item ISEL scale for	Social support is a composite of appraisal, belonging and tangible support. A high score on wellbeing scale indicate poor mental health. Moderate positive correlations

				92% had atleast O levels		support. 3 item JS scale and GHQ scale for wellbeing. Hierarchical multiple regression for hypotheses testing.	between social support and job satisfaction. Strong positive association between job control and job satisfaction and negative association between job control and wellbeing. Job demand was positively associated with wellbeing.
8	De Jonge and Schaufeli (1998). Journal of Organizational Behavior, 19; 4, 387.	1437	Healthcare personnel	Netherlan ds	83% women, age 17-59 years, average work experience 10 years, full time 46%.	Job satisfaction Job related anxiety	CS, SR, De Jonge scales for job demands and autonomy. VOS-D scale for social support. Single item job satisfaction scale. VOS scale for job related anxiety. Structural equation modeling technique for hypotheses testing.	Job demands are linearly and negatively related with job satisfaction; autonomy had a small but positive linear relationship with job satisfaction; and social support had a positive nonlinear relationship with job satisfaction. Autonomy and social support showed significant and nonlinear relationships with emotional exhaustion (wellbeing).
9	Fletcher and Jones (1993). Journal of Organizational Behavior, 14; 4, 319.	985 women 1289 men	NHS patients	UK	43.3% women 56.7% men, age 30-60 years,	Anxiety Depression Job satisfaction Life satisfaction	CS, SR, Karasek's Job Content Questionnaire on demands and control. Payne and Fletcher (1983) Interpersonal support scale. Single item scale for both job and life satisfaction. CCEI (1979) scale for anxiety and depression.	Social support was measured as interpersonal support. Job discretion and social support were significantly related to all the outcome variables in the predicted direction for both men and women. Job demands were not significantly related to job and life satisfaction in men. Non linear relationships were insignificant.

10	Houben et al (1990). Work & Stress, 4; 2, 179.	120	Car mechanics	Netherlan ds	-	Job related worries	CS, SR,	Hypotheses were supported for the desired outcomes
11	Johnson et al (1995). Journal of Occupational and Environmental Medicine, 37; 9, 1151.	495	Graduate physicians in mid career	US	-	Job dissatisfaction Psychiatric distress	Longitudinal study, SR, multiple regression analysis.	Social support was measured as co-worker support. Higher job demands were found to be associated with increases in job dissatisfaction and psychiatric distress. Work control and social support were found to protect physicians from dissatisfaction and distress.
12	Kawakami et al (1992). Scandinavian Journal of Work, Environment and Health, 18; 3, 195.	468	Blue collar employees of an electronic factory	Japan	Aged 22-49 years,	Depressive symptoms	Longitudinal (T0, T1, T2, T3), SR, binomial regression analysis for hypothesis testing.	Job overload and lack of control at T0 were significantly related to depressive symptoms at T1 and were insignificant at T2 and T3. Poor human relations at work were significantly related to depressive symptoms at T2 but insignificant at T1 and T3.
13	Landsbergis et al (1992). Journal of Behavioral Medicine, 15; 4, 379.	297	Employees of 8 diverse workplaces	-	All men. Aged 30-60.	Anxiety Depression Job dissatisfaction State anger Trait anxiety Trait anger Global severity index	CS, SR, ANCOVA and moderated multiple regressions.	Hypotheses were supported for various outcomes. Support depends on the type of analyses.
14	Lerner et al (1994). American Journal of Public Health, 84; 10, 1580.	1319	National survey	US	Working men and women aged between 18-64 years.	Health related quality of life	CS, SR, correlations and logistic regression.	High strain (high demands, low control) was associated with lower scores on five (of nine) subscales of quality of life. Workplace support was associated with 4 of 9 subscales on

							quality of life. Buffer effect of support was insignificant.
15	Loscocco and Spitze (1990). Journal of Health and Social Behavior, 31; 4, 313.	1319		US	-	Emotional health	CS, SR, National survey data,	High demand and low control was associated with lower scores on emotional health.
16	Melamed et al (1991). Journal of Vocational Behavior, 39; 1, 40.	267	Social workers	-	All females. Aged 24-61 years. Average experience 10 years. 90% had college education and 13% had a master's degree.	Attitude (Job satisfaction) Wellbeing (burnout)	CS, SR, Kanner et al (1978) scale for job demands, Quinn and Sheppard (1974) and Karasek (1979) scale for job control, and Etzion (1984) scale for work support. Rank order correlations and ANOVA to test additive effects and hierarchical regression to test interaction effects.	The lowest burnout level and the highest job satisfaction were found under conditions of low demands, high control, and high social support. No evidence of the interactive effect was found.
17	Moyle (1995). Journal of Organizational Behavior, 16; S1, 647.	143	Employees from diverse work settings	-	Aged between 17-59 years. 39% females. 74% live with partners. 27% had university degree.	Job satisfaction Mental health	CS, SR, Sauter (1989) work demands and control scales. House (1981) scale for support from superiors. Hierarchical regression for testing the hypotheses.	Job demands, control and support showed an additive effect on job satisfaction as hypothesized.

18	Niedhammer et al (2006). International Journal of Occupational and Environmental Health, 12; 2, 111.	504 men 175 women	Employees working in a publication company for atleast 6 months	-	29% women, 45% men and 39% women in sample aged 40-49. 81% men and 69% women were married.	Depressive symptoms and Distress (depression, anxiety, social impairment, hypochondriasis)	CS, SR, Karasek's Job Content Questionnaire on demands, control, and support. CES-D scale for depression. GHQ-12 scale for distress. Logistic regression was used for data analysis.	Psychological work demands were not significantly associated with depressive symptoms and distress for both men and women. Low decision-latitude (control) was associated with depressive symptoms in men. Social support reduces depressive symptoms in women.
19	Parkes and von Rabenau (1993). Journal of Community and Applied Social Psychology, 3; 4, 243.	145	Personnel in psychiatric hospital	England	63.4% women in sample.	Job satisfaction	CS, SR, Karasek (1979) scale for demand and control, House (1981) scale for support from superiors and co-workers. Hierarchical regression.	The effect of job demand on job satisfaction was insignificant. Job control and support showed a significant positive effect on job satisfaction.
20	Roxburgh (1996). Journal of Health and Social Behavior, 37; 3, 265.	524 men 470 women	Employees	Canada	Aged 18-65 years.	Distress (CES-D scale)	CS, SR	Self direction is measured as routinization and control. 'Job demand' is measured as perceived job demands and work hours. Co-worker support is used as a measure of social support. No significant difference between men and women in perception of job demands and self direction. Women perceive higher social support and work fewer hours than men. High job demands increase distress for both men and

								women. The relationship of job control with distress was insignificant. Social support has a significant negative impact on distress. Gender had a significant effect on distress and wellbeing.
21	Roxburgh (1997). Journal of Family Issues, 18; 3, 270.	524		Canada	-	Distress	CS, SR	
22	Stansfeld et al (1995). Journal of Epidemiology and Community Health, 49; 1, 48.	6900 3414	Civil servants aged 35-55 years	England	6900 male and 3414 female civil servants aged 35-55 years.	Wellbeing (anxiety and depression) Global satisfaction Psychiatric disorder	CS, SR and personnel managers' assessment, GHQ scale was used to measure anxiety and depression.	Both men and women civil servants reported higher control, high level of support, greater wellbeing and greater satisfaction. High control and support were associated with greater wellbeing and satisfaction. Job demands had insignificant association with wellbeing. Gender effect was insignificant.
23	Wood (2008). Industrial Relations Journal, 39; 2, 153.	22451	Employees from British workplaces	UK	-	Job satisfaction Anxiety and contentment.	CS, SR, WERS 2004 survey (employee survey)	Supervisor support was measured on three aspects: supportive, informative, and consultative. The results conform to the Karasek basic (demand-control) and extended model (demand-control-support).

* CS: cross sectional, SR: self report.

The majority of the studies have examined the additive effects of 'psychological work demands', 'job control', and 'support' on perceived wellbeing in cross sectional designs. Support for the additive effects of 'psychological work demands', 'job control', and 'support' on psychological distress was found in six cross sectional studies (Cahill and Landsbergis, 1996; Fletcher and Jones, 1993; Landsbergis et al, 1992; Loscocco and Spitze, 1990; Roxburgh, 1996; Stansfeld et al, 1995). However, nearly equal number studies failed to support the hypothesized associations (Baker et al, 1996; Barnet and Brenan, 1995; Chay, 1993; Lerner et al, 1994; Moyle, 1995).

The JDCS model was also examined in a few longitudinal studies (Barnett and Brennan, 1997; Johnson et al, 1995; Kawakami et al, 1992); however, these studies are generally non-supportive, except one (Johnson et al, 1995). The effect of gender was examined in three studies (Niedhammer et al, 2006; Roxburgh, 1996; Stansfeld et al, 1995) and support was found in two (Roxburgh, 1996; Niedhammer et al, 2006). Support for the hypotheses pertaining to the association between demand-control-support and psychological or job related wellbeing in all other studies seems to be independent of sample characteristics (gender, sample size, heterogeneity, and occupation).

Summarizing, support for JDCS theory is mainly found in cross-sectional studies. Hence, it seems appropriate to describe the support for model in terms of associations between work environment characteristics and psychological and job related wellbeing. There are a small number of longitudinal studies on general psychological wellbeing, however, for job-related well-being no longitudinal studies have as yet been conducted. Second, differences in the support of the hypothesized relationships are observed by gender. In the mixed samples job demands, control and support are associated with general and job-related well-being. In male dominating samples, job control is more strongly associated with general and job related wellbeing, whereas, in female dominating samples social support is more strongly associated with wellbeing. This implies that future research on JDCS model should examine gender as a moderator.

2.3.2 Gaps in JDCS and contributions of present research

The inconsistent results of empirical tests of the model have resulted in a number of theoretical and methodological criticisms of JDCS (Kristensen, 1995; de Jonge and Kompier, 1997; Van Der Doeff and Maes, 1999). The first criticism levels that the measures and conceptualization of job demands and job control may not be adequate (Salanova et al, 2002). The studies that failed to show the expected results used a broader conceptualization of job demands (i.e., job responsibility) and job control (i.e., participation). As a consequence, there was no close match between demands and control; that is, the type of job control reported does not adequately reflect the control they could exert over the type of demands experienced (Van der Doeff and Maes, 1999, Salanova et al, 2002). This problem will be dealt with by closely matching job demands with job control (autonomy) measures. Psychological job demands is measured as employees' perceptions of work overload such as: if they perceive they have to do too much or they have little time to deliver the complete job. Autonomy is measured as employees' perceptions of control over the schedule and pace of work.

Second, social support has typically been measured as 'supervisor support' or 'co-worker support' or both. An important point of attention is the possible multifaceted nature of social support (e.g. Payne, 1979). Various kinds of social supports may include natural, physical, technical, intellectual, and interpersonal support (Payne, 1979; Wood, 2008). Different kinds of social supports have not been incorporated in the JDCS model and, in turn, are not profoundly investigated so far. Perceived family support is one such support.

Researchers have observed a tremendous change in workforce characteristics in recent years, as more and more non-traditional employees including women, the disabled, students, and single parents with family responsibilities have been joining the labour force (Allen, 2001; Saltzstein et al, 2001). Especially with the increased participation of women and single parents in the workforce, work and family issues have become increasingly important for employees. Since women have changed themselves and their role, men have responded to these changes by accepting an increasing share of domestic responsibilities (Friedman and Greenhaus, 2000). Husbands in dual career families face higher work-family conflict from the demands

of sharing family responsibilities (Ginsberg, 1998; Lewis, 2001), whereas women face conflicts in their work and traditional family roles such as looking after children, homes and elderly parents or disabled dependents (Higgins et al, 1992; Saltzstein et al, 2001). Employed students and older workers require flexibility to cope with both their work and family demands (Saltzstein et al, 2001). Therefore, in the context of changing demands of working population, it is important to study the perceived 'family support' available for employees to help them cope with the dual role pressures. The influence of non work factors on employee wellbeing and turnover is perhaps one of the richest areas for future work (Cohen, 1997). The retention of key personnel has been an acute concern for employers since greater investment in employee development have made turnover more costly (Cliffe, 1998). Employers are searching for ways to promote commitment among employees (Hiltrop, 1995) and family friendly policies are seen as an important retention strategy (Saltzstein et al, 2001). The influence of 'perceived family support' on employees' wellbeing and turnover could generate a stream of research that will lead us to a greater understanding of turnover behaviour.

Third, managerial/supervisor support has typically been measured by asking questions on three aspects: feedback from others, appreciation and recognition. Wood (2008) has used a broader definition of managerial support (supportive, informative, and consultative). Likert (1961, P 222-234) has defined managerial support as: "the extent to which managers are perceived to foster trust and confidence; to help subordinates; to share information about company plans with employees; and allow employees to participate in decision making". Literature concerning trust indicates that trust is a central feature in manager-subordinate relationship (Butler, 1999; Gillespie and Mann, 2004) and has a positive relationship with job related wellbeing measures (Podsakoff et al, 1996). Thus, in this thesis, managerial support is measured as trust (Likert, 1961), support for skill development (Likert, 1961), informational support (Likert, 1961; Wood, 2008), and consultative support (Wood, 2008; Likert, 1961).

Fourth, the JDCS model has been frequently used in the psychological literature to examine general and health-related wellbeing. The application of this model in organizational sciences is very limited. The relationships between socio-

psychological job characteristics (e.g., job demands, control, and social support) and turnover behaviours have not been widely reported (Spector and Jex, 1991). It is contended that the JDCS model can be used to predict a variety of attitudinal and behavioural outcomes. The JDCS model explains the impact of perceived work situations on employees' wellbeing (job satisfaction and anxiety). On the other hand, the empirical literature on turnover has established job-related wellbeing as an important predictor of turnover behaviour (Cotton and Tuttle, 1986; Griffith et al, 2000). Thus, one may expect that perceived work environment characteristics influence turnover through their effect on job-related wellbeing (Figure 2.1; path c). Hence, the research on the JDCS model can be expanded to empirically examine how perceived work situations influence employee behaviour.

Previously JDCS model has been used to examine employee wellbeing by including both positive (contentment, and satisfaction) and negative (anxiety, depression, stress, strain, tension and dissatisfaction) feelings. Job satisfaction captures the positive emotional state that people have in relation to their job, whereas anxiety measures the negative emotional state that employees have in relation to their job. Organization commitment has not been previously studied as a measure of wellbeing. However, in this study 'organization commitment' is included as a positive emotional state that workers have in relation to their employing organization. Thus, job satisfaction, organization commitment, and work-related anxiety are included as context specific measures of wellbeing (i.e. related to one's job). Incorporating all the three measures provides a more detailed assessment of an individual's overall level of well-being.

2.3.3 Proposed paths

The present study, thus, extends research on JDCS theory by including an additional support measure i.e. 'family support'. 'Managerial support' is expanded to include employees' perceptions of trust, communication, participation and general support. Also, 'turnover' is included as an outcome variable along with the measures of general and job-related wellbeing. Hence the work environment characteristics

examined in the present research include 'psychological work demands', 'autonomy', 'managerial support', and 'family support' (see Figure 2.1).

Figure 2.1: The JDCS, wellbeing, and turnover link
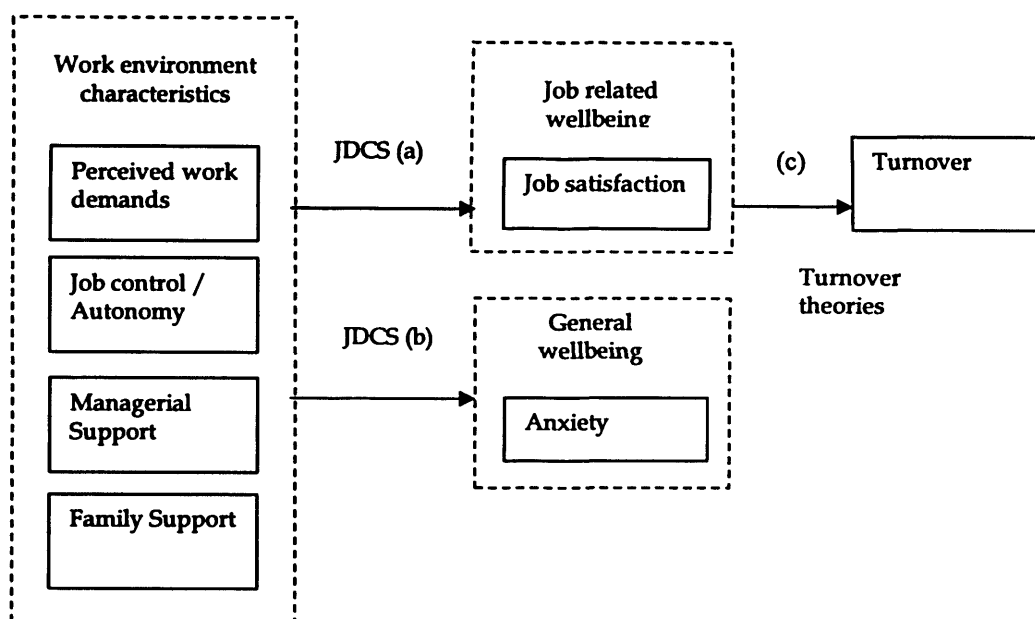
Source: proposed by author.

2.4 Second route: Social exchange theory (SET)

The second route for explaining voluntary turnover is based on perceived organizational support (POS) and social exchange theory (SET). Social exchange theory is one of the most influential theories for understanding workplace attitudes and behaviours (Cropanzano and Mitchell, 2005).

Social exchange theory at the organization or workplace level describes the relationship between a workplace as one entity and employees as another who engage continuously in exchange transactions over time to create an exchange relationship (Settoon et al, 1996). Social exchange may be initiated by organizations' and/or representatives' treatment and support of employees, with the expectation that this treatment will be reciprocated (Blau, 1964) in positive and beneficial ways (Settoon et al, 1996).

In the present study, the relative contribution of different exchange relationships to important employee outcome variables is examined. Job satisfaction, organizational commitment, and voluntary turnover are selected as the main dependent variables for two reasons. First employees' view attitudes and behaviours as acceptable commodities for exchange (Settoon et al, 1996; Coyle-Shapiro and Kessler, 2003) for various organizational policies. If employees feel the positivity of the work environment, in the context of exchange relationships, they may reciprocate their employer's favourable treatment by enhancing their positive attitudes, reducing negative behaviours, or both.

Second, these variables have been shown to be salient with respect to a variety of exchange relationships. The organizational behaviour literature has examined various kinds of interpersonal exchanges between employees as one party and their immediate supervisors (Liden et al, 1997), co-workers (Cox, 1999) or employing organization (Moorman et al, 1998) as another party involved in the exchange relationships. These exchange relationships have implications for employee attitudes and behaviour (Cropanzano and Mitchell, 2005). The literature on perceived organizational support (POS) suggests that employees form global perceptions of support by examining their relationships with their supervisors (Cropanzano et al, 1997; Wayne et al, 1997), and discretionary help offered by organizations to support employees' needs to balance their work and family responsibilities (Thomas and Ganster, 1995; Thompson et al, 1999; Allen, 2001).

Apart from the support received by supervisors and organizations for work and family, the nature of the job itself is an important factor that may affect employees' efforts to balance work and family. Two of the job characteristics are considered here: job autonomy and work overload. Job autonomy is included as another form of support in earlier literature along with supervisor and family support (Ahuja et al, 2007; Sakamoto and Spinks, 2008; Thompson and Prottas, 2005). Thompson and Prottas (2005) have argued that a job that allows employees to exercise autonomy (discretion in how and when the job gets done) should enable employees to balance work and non work demands.

Perceived 'work overload' is the perception that one has too much to do at work (Schaufeli et al, 1995). Employers frequently expect employees and professionals to work longer hours, even more than eight hours a day. Employees, in order to keep their jobs, perceive these demands as necessary (Higgins et al, 1992). These demands may be detrimental for the psychological and physical well being of an individual which is necessary for the quality of family life. High 'perceived work demands' may cause an individual to be mentally preoccupied with the work role even when attempting to fulfil the demands of family role (Frone et al, 1992). Greenhaus et al, (2001) argued that when employees experience work interference with family, they respond by withdrawing themselves from the work in an attempt to reduce that interference. The employees may perceive that the only solution to the problem would be to find another job that would enable them to balance the work and family needs (Anderson et al, 2002). Boyar et al, (2003) argued that when family role demands interfere with work, leaving the job may also work to reduce the experienced conflict and to balance work and family life. Therefore, organizations' efforts to reduce the perceived work overload may be seen as a support to enable employees to balance their work and family roles.

A supportive workplace (less work load, high managerial and family support and high autonomy) may be regarded as a compassionate workplace. The employees may then feel obligated to respond to these kind organizational efforts with increased job satisfaction, commitment to the employing organization, and lower turnover (Eisenberger et al, 1990; Eisenberger et al, 2001; Rhoades and Eisenberger, 2002; Shore and Wayne, 1993; Wayne et al, 1997).

2.4.1 Proposed paths

SET, therefore, predicts that employees' will exhibit positive attitudes and behaviour when employees perceive lower work demands, higher managerial/supervisor support, family support and autonomy. These direct relationships are shown in Figure 2.2 (path a and b). Considering the earlier turnover models, organization commitment and job satisfaction are consistent predictors of turnover behaviour. Hence one may conclude that employee perceptions of a supportive workplace may

have an indirect impact on voluntary turnover behaviour through their effect on employees' job attitudes. However, it is difficult to say if the path will be fully or partially mediated. Thus, a review of main stream literature is carried out which is given in next section.

Figure 2.2: The Social Exchange link
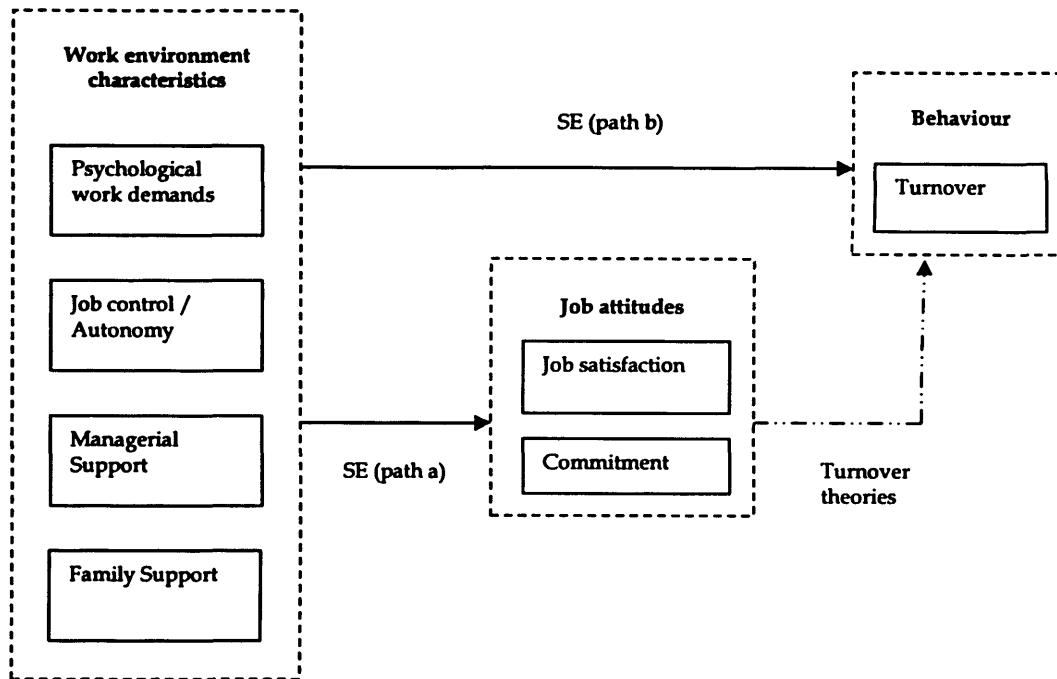
Source: Proposed by author.

2.4.2 Evaluation of literature on SET

The relationship between perceived work environment characteristics and employee 'job satisfaction', 'organization commitment' and 'turnover behaviour' has been tested in many studies. The objective here is to examine if the research findings support the hypothesized direct effects on job attitudes and turnover and also to examine if both 'job satisfaction' and 'organization commitment' mediate the relationship between 'perceived work environment characteristics' and 'turnover' behaviour.

The studies were identified by means of a systematic search of several databases including: EBSCO, ABI/Inform, PSYCLIT, Emerald, and Elsevier Science Direct. Key

words used were: 'work environment characteristics', 'job demands', 'work overload', 'autonomy', 'job control', 'social support', 'supervisor support', 'family support', 'job satisfaction', 'organization commitment', 'affective commitment', and 'turnover'. In addition, the reference listings of the published articles were screened for additional studies. The search period was confined to between 1995 and 2007 to capture the latest trend in the research. The studies were included in the review if at least one relationship was examined between perceived work environment characteristics (in Figure 2.2), job satisfaction, organization commitment, and turnover. These criteria resulted into 90 studies (Table 2.3). The following criteria were applied in the categorization of the studies: (1) studies examining the direct relationship between perceived work environment characteristics and job satisfaction and organization commitment; (2) studies examining the direct relationship between perceived work environment characteristics and turnover; and (3) studies examining the direct relationship between job satisfaction and organization commitment, and turnover.

All the studies vary in terms of research design, sample characteristics, and variables included for analysis. Though the majority of the studies are cross-sectional in design, a few studies have used a longitudinal design (Alder et al, 2006; Chen et al, 2006; Croon et al, 2004; Crossley et al, 2007; Eisenberger et al, 2002; Mansell et al, 2006; Parker et al, 2001; Stinglehamber and Vandenberghe, 2003; Van Breukelen et al, 2004; Weber and Weber, 2001; Wright and Bonnett, 2007); panel design (Currivan, 1999); and an experimental design (Dodd and Ganster, 1996). All studies have analysed data at the individual level except one (Vandenberg et al, 1999), which analysed data at organization level.

An inspection of the studies in Table 2.3 reveals that not all the work environment characteristics (included in this study) have been tested by a single study. Instead, depending on the research objectives of the studies, a subset of perceived work environment characteristics (as in Figure 2.2) is included in the analysis. Perceived work environment characteristics have been consistently examined for their effects on job satisfaction and organization commitment and the results have generally been supportive of the tested hypotheses. Very few studies have included actual voluntary turnover for examination. In line with earlier turnover theories, job

satisfaction and organization commitment have been consistently examined as predictors of actual turnover behaviour and the results have been generally supportive.

Of work environment characteristics, the relationship of 'family support' and 'turnover' was examined in one study (Vandenberg et al, 1999). Vandenberg et al (1999) found a significant negative association between flexibility and turnover at the organizational level. At the individual employee level, this relationship has not been examined. Croon et al (2004) and Iverson (1999) supported the negative relationship between autonomy and turnover; however, Alexander et al (1998) were non-supportive of this relationship. The relationship of 'perceived supervisor support' and turnover was examined in two longitudinal studies (Eisenberger et al, 2002; Stinglehamber and Vandenberghe, 2003). Where one is supportive of the negative impact of 'perceived supervisor support' on turnover (e.g. Eisenberger et al, 2002), the other is not (e.g. Stinglehamber and Vandenberghe, 2003). One cross sectional study examining the same relationship remained unsupportive (Iverson, 1999). Hence the findings remain inconclusive.

Even though the studies are generally supportive of a positive association between perceived workplace support (lower work demands, higher autonomy, managerial and family support) and job attitudes (job satisfaction and organization commitment) and a negative association between job attitudes and turnover, these do not confirm that job attitudes mediate the workplace support-turnover relationship.

Table 2.3: Review of studies based on social exchange theory

Study no.	Author/year/journal/ volume/issue/page.	Sample size	Industry/ profession	Location	Gender (female %)	Variables	Methods	Findings
1	Ahuja et al (2007). MIS Quarterly, 31; 1, 1-17.	171	Computer professionals	US	54%	Autonomy Work overload Organization commitment	CS, SR, Structural equation modeling for data analysis.	Autonomy was significantly associated with organization commitment. Also autonomy was negatively related with perceived work overload.
2	Alder et al (2006). Information and Management, 43; 7, 894-903.	62	Sales and service	US	23%	Trust Commitment Job satisfaction	SR, Longitudinal field experiment, multiple regression analysis.	Trust was positively related to job satisfaction and organizational commitment and negatively related to employees' turnover intentions.
3	Alexander et al (1998). Research in Nursing and Health, 21, 415-427.	1106	Healthcare	US	71%	Autonomy Work overload Dissatisfaction Turnover	CS, SR, Causal modeling for hypothesis testing.	Workload was an indirect predictor of turnover. Autonomy was directly related with satisfaction. Dissatisfaction was both directly and indirectly related to turnover.
4	Allen (2001). Journal of Vocational Behaviour, 58; 3, 414-435.	522	Tech, utility and business association	-	73%	Supervisor support Flexibility Family support WFC Organization commitment Job satisfaction	CS, SR, exploratory factor analysis, correlations, hierarchical regression.	Employees' perceptions of family support were strongly related to their attitudes. Family support perceptions and supervisor support explained significant proportion of variance in job satisfaction and organization commitment.
5	Allen et al (2003). Journal of Management, 29; 1, 99-118.	215 197	Retail Insurance	US	96% 22%	Participation Job satisfaction Organization commitment Perceived organizational support (POS) Turnover	CS, SR, structural equations modeling.	Supportive practices were related to organization commitment directly and indirectly through perceived organizational support. POS is significantly negatively related with turnover.
6	Anderson et al (2002).	2248	Data from	US	49%	Supervisor	CS, SR, SEM for	Lack of managerial support and

55

	Journal of Management, 28; 6, 787-810.		National study of changing workforce (1997).			support Flexibility Family support WFC Overload Job satisfaction	analysis.	schedule flexibility were significantly related to WFC which in turn were associated with job dissatisfaction, stress and turnover intentions.
7	Aryee and Stone (1996). International Journal of HRM, 7; 1, 150-164.	184	Expatriate managers	Hong Kong	80%	Autonomy (discretion) Supervisor support Job satisfaction	CS, SR, correlation and regression analysis.	Discretion and supervisor support were positively related to job satisfaction.
8	Aryee et al (1998). Human Relations, 51; 1, 73-87.	228	Professional, admin and technical employees	Hong Kong	66%	Supervisor support Organization commitment	CS, SR, structured questionnaire, regression analysis.	Flexibility and supervisor support were related to commitment and turnover intentions. Gender did not moderate the relationships.
9	Aryee et al (2002). Journal of Organizational Behaviour, 23, 267-285.	153	Public sector employees	India	9%	Trust in supervisor Trust in organization Job satisfaction Commitment	CS, SR, SEM	Trust in supervisor was not only related to job satisfaction and organization commitment, it also mediated the link between interactional justice and these attitudes.
10	Babin and Boles (1996). Journal of Retailing, 72; 1, 57-75.	261	Food service	US	-	Supervisor support Job satisfaction	CS, SR, causal modeling approach.	Results indicate that supervisor support reduces stress and increases job satisfaction.
11	Behson (2005). Journal of Vocational Behaviour, 66; 3, 487-500.	2248	Data from National study of changing workforce (1997).	US	49%	Autonomy Manager support Work schedule flexibility Dependant care benefits Work demands (overload) Job satisfaction	CS, SR, Regression analysis, dominance analysis, and relative weight analysis.	Autonomy, manager support, schedule flexibility and dependent care benefits had significant associations with job satisfaction and work demands.
12	Blau (2007). Journal of	221	Healthcare	US	82%	Job satisfaction	CS, SR, turnover	Two types of turnover included:

56

	Vocational Behaviour, 70; 1, 135-148.		(medical technologists)			Commitment Psychological stress Turnover	data was collected one year later, logistic regression was used for data analysis.	voluntary organizational turnover and voluntary occupation turnover. Job insecurity and job satisfaction were significantly related to voluntary job turnover.
13	Bordin et al (2007). Management Research News, 30; 1, 34-46.	99	IT professionals	Singapore	44%	Empowerment Supervisor support Participation Job satisfaction Organization commitment	CS, SR, OLS for data analysis.	Empowerment was measured as: meaning, competence, autonomy and impact. Empowerment was positively associated with all the variables including access to company information, participation, supervisor support, job security, organization commitment and job satisfaction.
14	Chen et al (2006). International Journal of Nursing Studies, doi: 10.1016	308	Healthcare	Taiwan	100%	Autonomy Supervisor support Work overload Job satisfaction Turnover	Longitudinal, correlation, logistic regression.	Autonomy and supervisor support had a positive association with job satisfaction whereas; work overload had a negative association with job satisfaction. Relationship was not tested for actual turnover.
15	Chiu and Ng (2001). International Journal of HRM, 12; 8, 1347-1364	150	Single working women	Hong Kong	100%	Family support (family oriented policies) Job satisfaction Organization commitment	CS, SR, correlations, hierarchical multiple regression.	Family support was positively (significant) associated with job satisfaction and organization commitment.
16	Christie and Schultz (1998). Work and Stress, 12; 4, 351-361.	181	Working students at a university	US	69%	Social support (instrumental, informational, appraisal, emotional) Stress (conflict and ambiguity) Job satisfaction	CS, SR, multiple regression analysis.	All supports were positively associated with job satisfaction. Stress had a significant positive effect on anxiety and a significant negative effect on job satisfaction.

						Anxiety		
17	Cohen (1997). Human Relations, 50; 12, 1511-1536.	300	School employees	Canada	66%	Family support (non work) Job satisfaction Commitment	CS, SR, hierarchical regression.	Non work support was positively associated with job satisfaction and organization commitment.
18	Connell et al (2003). Personnel Review, 32; 5, 569-587.	275	Health services	Australia	87%	Trust Commitment	CS, SR, correlations and multiple regression	Trust in management showed a significant positive association with organization commitment.
19	Cropanzano et al (1997). Journal of Organizational Behaviour, 18; 2, 159-180.	69 / 185	Manufacturing/ line workers and supervisors / Undergrad students working part time	US	60% / 58%	Job satisfaction Commitment Support	CS, SR, correlational analysis and regression	Support showed a strong and significant positive association with job satisfaction and organization commitment in both samples.
20	De Croon et al (2004). Journal of Applied Psychology, 89; 3, 442-454.	683	Transport	Netherlands	0%	Autonomy (job control) Psychological work demands Turnover	Longitudinal, SR, correlation and linear regression analysis.	Job control showed a significant negative impact on turnover. However, the impact of psychological work demands on turnover was insignificant.
21	Crossley et al (2007). Journal of Applied Psychology, 92; 4, 1031-1042.	306	Service employees	US	80%	Job satisfaction Commitment Turnover	Longitudinal, SR, correlation and regression analysis.	Organization commitment was a significant predictor of turnover.
22	Cunningham and McGregor (2000). Human Relations, 53; 12, 1575-1591.	535 / 223	Telecom workers Automobile service station technicians	US / Canada	- / 0%	Trust Job satisfaction	CS, SR, correlation and hierarchical regression.	Trust in supervisors was significantly positively related to job satisfaction in both samples.
23	Currivan (1999). Human Resource Management Review, 9; 4, 495-524.	356 (wave 1) / 482 (wave 2)	Education / Education	US / US	- / -	Autonomy Supervisor support Work overload Job satisfaction Organization commitment	Panel data at wave 1 and wave 2. Correlation and structural equation modeling.	Autonomy and supervisor support are positively associated with job satisfaction and commitment at both wave 1 and 2, while work overload has a negative impact on both variables at both waves.
24	de Cuyper and Witte	560	Retail	Belgium	65%	Autonomy	CS, SR,	Autonomy had a significant positive

58

	(2006). International Journal of Stress Management, 13; 4, 441-459.					Work demands (overload) Job satisfaction Organization commitment	correlation and hierarchical regression.	relationship with job satisfaction and organization commitment, whereas, work load was negatively related to both job satisfaction and organization commitment. Autonomy was not significantly related to work load.
25	Darcy and McCarthy (2007). Journal of European Industrial Training, 31; 7, 530-549.	76	Hotel industry	Ireland	59% females	Managerial support Work overload WFC	CS, SR, correlation and regression.	Managerial support was unrelated to work overload and work family conflict.
26	De Guilder (2003). Personnel Review, 32; 5, 588-604.	64	Hotels (core and contingent workers)	-	45%	Trust Organization commitment OCB Exit	CS, SR measures on trust and commitment, supervisor rating of OCB, correlation and regression.	Trust was positively associated with organization commitment. Exit (intention) was used as a measure of turnover. Both trust and commitment were negatively associated with exit.
27	DeConinck and Bachmann (2005). Journal of Business Research, 58; 7, 874-882.	295	Retail	US	56%	Organization commitment Turnover Job satisfaction (pay and supervisor satisfaction)	CS, SR, correlation and structural equations modeling.	Organization commitment was significantly negatively associated with turnover.
28	Diefendorff et al (2006). Personnel Psychology, 59; 2, 365-393.	317 177	Employees and supervisors	US	73% 74%	Autonomy Job satisfaction	CS, SR, correlation and regression.	Autonomy was positively related to job satisfaction.
29	Dodd and Ganster (1996). Journal of Organizational Behavior, 17; 4, 329-347.	197	Undergrad students	US	56%	Autonomy (perceived and objective both) Job satisfaction	Experimental design (2x2x2 factorial). Correlations and MANOVA.	Both perceived and objective autonomy had a significant positive association with job satisfaction.
30	Downs et al (1996). Paper presented at	490		US		Communication (org. perspective)	CS, SR, correlation and	Communication showed a significant positive association with

	annual conference on communication	194		Australia		Organization commitment	multiple regression	organization commitment.
		177		Guatemal a				
31	Eisenberger et al (2002). Journal of Applied Psychology, 87; 3, 565-573.	493	Retail	US	28%	Perceived Supervisor support Perceived organizational support Turnover	Longitudinal (3 months time lag), SR, hierarchical regression.	Perceived supervisor support at time 1 was positively related to perceived organizational support at time 2. Perceived supervisor support and perceived organizational support were negatively related to turnover. POS mediated the negative relationship between PSS and turnover.
32	Gbadamosi et al (2007). Journal of Management Development, 26; 8, 753-769.	484	Services	South Africa	48% females	Trust Supervisor support Employee participation Autonomy Commitment	CS, SR, correlation and stepwise multiple regression.	Trust in management, supervisor support, participation and autonomy were positively associated with organization commitment and negatively associated with charlatan behaviour.
33	Gopinath and Becker (2000). Journal of Management, 26; 1, 63-83.	144	Pharmaceutical	-	65%	Trust Communication Organization commitment	CS, SR, correlation and	Trust in new management was positively related to post divestiture organization commitment. Communication had a direct positive effect on commitment.
34	Grandey et al (2005). Journal of Applied Psychology, 90; 5, 893-904.	101 95	Employees working more than 16 hrs	US France	66% 56%	Autonomy Job satisfaction	CS, SR, correlation and regression.	Autonomy was positively associated with job satisfaction in both French and US samples.
35	Hang-Yue et al (2005). International Journal of HRM, 16; 11, 2133-2146.	877	Protestant clergy	Hong Kong	48%	Work-family conflict Stress (overload, conflict, ambiguity, WFC) Job satisfaction	CS, SR, correlation and regression.	Perceived work overload had a significant negative association with job satisfaction
36	Hochwarter et al	141	Hotel industry	US	55%	Anxiety-stress	CS, SR,	Anxiety showed a significant

	(1999). Journal of Vocational Behaviour, 55; 3, 277-297.	418	Education		85%	Job satisfaction Commitment	correlation and hierarchical regression.	negative association with job satisfaction and organization commitment in both samples.
37	Hopkins and Withington (2006). The Journal of Psychology, 140; 5, 477-498.	184	Transport	US	17%	Trust in employer, Organization commitment	CS, SR, correlation and regression analyses.	Trust in employer was significantly positively associated with affective commitment.
38	Ito and Brotheridge (2005). Human Resource Management, 44; 1, 5-19.	600	Civil servants	Canada	50%	Participation in decision making (PDM) Autonomy Supervisor support Commitment	CS, SR, correlation and structural equations modeling using AMOS 4.	Participation in decision making, Autonomy and Supervisor support were positively associated with organization commitment.
39	Iverson (1996). International Journal of Human Resource Management, 7; 1, 122-149.	761	Healthcare/ hospital staff	Australia	74%	Autonomy Supervisor support Job satisfaction Commitment	CS, SR, correlation and regression.	Autonomy and supervisor support were positively associated with both job satisfaction and organization commitment.
40	Iverson (1999). Human Resource Management Review, 9; 4, 397-418.	415	Health care	Australia	75%	Autonomy Supervisor support Job satisfaction Organization commitment Turnover	CS, SR, correlation and survival analysis technique.	Of job related variables, autonomy had a significant negative impact on turnover. Supervisor support was insignificant. Of job orientation variables, job satisfaction and organization commitment had a significant negative impact on turnover.
41	Iverson and Deery (1997). HRM Journal, 7; 4, 71-82.	246	Hotel employees	Australia	57%	Supervisor support Work overload Job satisfaction Commitment	CS, SR, correlations and structural equation modeling.	Supervisor support was positively associated with job satisfaction and organization commitment, whereas, work overload was negatively associated with both job attitudes.
42	Iverson and Kuruvilla (1995). Journal of Organizational Behavior, 16, 557-582.	838	Professional teachers	US	79%	Autonomy Job satisfaction Commitment Stress (overload)	CS, SR,	Autonomy was positively associated with job satisfaction and organization commitment, whereas, work overload was negatively associated

							with both job attitudes.
43	Joiner and Bakalis (2006). International Journal of Education Management, 20; 6, 439-452.	72	Education/ staff involved in tutorial work	Australia	64%	Supervisor support Organization commitment	CS, SR, correlation and t-test for differences.	Supervisor support has a significant positive association with organization commitment.
44	Jones et al (2007). Journal of Business Research, 60; 7, 663-671.	343	Sales and marketing executives	US	-	Work overload Organization Commitment Job satisfaction	CS, SR, correlation and path analysis using AMOS 4.	Work overload showed a significant negative correlation with organization commitment only. Work overload significantly affected job satisfaction of employees with more than 25 years of service.
45	Jonge and Schaufeli (1998). Journal of Organizational Behaviour, 19; 4, 387-407.	665 667	Healthcare	Netherlan ds	83%	Autonomy Job demands Social support Job satisfaction anxiety	CS, SR, correlations and structural equations modeling.	Autonomy and social support were positively associated with job satisfaction and negatively associated with anxiety in both samples. Job demands was negatively associated with job satisfaction and positively associated with anxiety in both samples.
46	Karatepe and Kilic (2007). Tourism Management, 28, 238-252.	296	Hospitality and tourism	Cyprus	42%	Supervisor support Job satisfaction Organization commitment	CS, SR, structural equation modeling.	Supervisor support has a significant positive association with job satisfaction and organization commitment..
47	Kim (1999). HRM Review, 9; 4, 419-451.	1526	Automobile	Korea	0%	Autonomy Supervisor support Job satisfaction Commitment	CS, SR, correlation and structural equation modeling.	Supervisor support and autonomy were positively associated with job satisfaction and organization commitment.
48	Krauz et al (2000). Journal of Vocational Behaviour, 56, 1-11.	153	Healthcare	Israel	100%	Job control (autonomy) Job satisfaction Commitment	CS, SR, correlations and hierarchical regression.	Job control was positively associated with both job satisfaction and organization commitment.
49	Laschinger et al (2001). Healthcare	412	Nursing and healthcare	Canada	53%	Organizational trust	CS, SR, correlation and	Trust in managers is positively associated with job satisfaction and

	Management Review, 26; 3, 7-23.					Organization commitment Job satisfaction	regression.	commitment of nurses.
50	Maertz et al (2007). Journal of Organizational Behaviour, 28; 8, 1059-1075.	225	Social workers	US	82%	Supervisor support (PSS) Organizational support (POS) Organization commitment Turnover	CS, SR, correlation and regression.	PSS and POS were significantly related with affective commitment. Where PSS has a direct impact on turnover cognitions, POS has an indirect effect on turnover through affective commitment.
51	Mansell et al (2006). International Journal of Stress Management, 13; 1, 84-107.	352 316 405	Public sector organization	New Zealand	33% 33% 33%	Autonomy Supervisor support Job demand Job satisfaction	Longitudinal, SR, correlations at T1, T2 and T3. Hierarchical regression.	Autonomy (control) and supervisor support were positively associated with job satisfaction at all T1, T2, and T3. Job demand was positively associated with job satisfaction at T2 and T3.
52	Mauno et al (2006) Work & Stress, 20; 3, 210-233.	1252	Health and telecom packaging	Scandinavia	62% females	Family support Job control (autonomy) Job satisfaction and job commitment	CS, SR, correlation and moderated multiple regression	Family support: management support for family issues, career support, working hours. Job control and work-family climate were positively associated with job satisfaction and organization commitment.
53	Mitchell et al (2001). Academy of Management Journal, 44; 6, 1102-1121.	177 208	Retail Healthcare	US	77% 84%	Job satisfaction Commitment Turnover (in last 12 months)	CS, SR, turnover objective data, correlation and logistic regression.	Job satisfaction and organization showed a significant negative association with turnover in both samples.
54	Mossholder et al (2005). Academy of Management Journal, 48; 4, 607-618.	176	Healthcare	US	78%	Job satisfaction Turnover rate (after 5 years)	CS, SR, correlation and structural equation modeling.	Job satisfaction was a significant predictor of turnover (negative effect).
55	Mulki et al (2006). Journal of Personal	333	Sales persons in a Pharmaceutical	US	65%	Trust Job satisfaction	CS, SR, correlation and	Results show that trust in supervisor is an antecedent of job satisfaction

	Selling, xxvi; 1, 19-26.		company				Organization commitment	regression.	and turnover intention.
56	Ng et al (2006). Journal of Vocational Behaviour, 68; 3, 474-489.	1770	Retail (full time) Part time	US	35%	Flexibility Communication	CS, SR, correlation and regression analyses.	Communication, flexibility and learning have a direct positive impact on commitment. The interaction effect of three variables on organization commitment was also significant.
		273			37%	Learning opportunity Organization commitment		
57	Parasuraman and Simmers (2001). Journal of Organizational Behaviour, 22; 5, 551-568.	287	Organizational employees	US	51%	Autonomy Flexibility Job satisfaction	CS, SR, correlations, MANACOVA, hierarchical multiple regression.	Autonomy was positively associated with job satisfaction for both organizationally employed and self employed. Flexibility was not significantly related to job satisfaction.
		99	Self employed		45%			
58	Parker et al (2001). Journal of Occupational Health Psychology, 6; 3, 211-228.	161	Glass Manufacturing company	England	98%	Autonomy (T1) Work overload (T1) Communication (T1) Supervisor support (T1) Commitment (T1, T2) Safe working (T1, T2)	Longitudinal, SR, correlations for both cross sectional variables and longitudinal variables. Hierarchical regression for data analysis.	Supportive supervision and communication had a significant positive association with organization commitment and a negative association with work overload at T1. Autonomy and commitment insignificant. At T2; autonomy, supportive supervision and communication were positively associated with commitment and negatively associated with work overload.
59	Payne and Huffman (2005). Academy of Management Journal, 48; 1, 158-168.	570	Military/ army officers	US	30%	Commitment Turnover	Longitudinal, SR, correlation and logistic regression.	Affective commitment at T2 had a significant negative impact on turnover at T3.
60	Pettit et al (1997). Journal of Business Communication, 34; 1, 81-98.	302	Manufacturing	US	18%	Communication (upward) Communication (downward) Job satisfaction	CS, SR, correlation and moderated regression.	Organizational communication received strong support as a predictor of job satisfaction.
61	Rafferty and Griffin	207	Road	Australia	-	Leader support	CS, SR,	Leader support was positively

64

	(2006). Journal of Applied Psychology, 91; 5, 1154-1162.	168	construction and infrastructure development		-	Job satisfaction	correlation and structural equation modeling.	associated with job satisfaction.
62	Rhoades et al (2001). Journal of Applied Psychology, 86; 5, 825-836.	Study 1 367	University alumni	US	60%	Supervisor support Organization commitment	CS, SR, correlations and SEM	Supervisor support showed a significant positive correlation with organization commitment.
		Study 3 1124	Retail employees	US	67%	Affective commitment and turnover	CS, SR, turnover data from records after 6 months	Affective commitment has a significant negative effect on turnover in both samples.
		262	Poultry and feed processing employees	US	-			
63	Rodwell et al (1998). Human Resource Management, 13; 3-4, 277.	191	IT industry	Australia	-	Communication Participation Job satisfaction Commitment	CS, SR, correlations and hierarchical regression.	Communication and participation were positively associated with job satisfaction and organization commitment.
64	Rooney and Gottlieb (2007). Journal of Vocational Behaviour, 71; 2, 186-203.	100 247	Professional and tech. NGO staff	Canada	57% 82%	Autonomy supervisor support Job strain (anxiety) Job satisfaction		Scale was developed for supervisor support. Three indicators involved: job support (communication, task guidance and assistance, encourage participation), esteem support (concern and recognition), micro managing (non supportive behaviours). Job support and autonomy were positively related with job satisfaction and negatively related with job strain (anxiety).
65	Schaubroeck and Fink (1998). Journal of Organizational Behaviour, 19; 2, 167-195.	214	Insurance	US	19%	Autonomy (job control) Supervisor support (consideration) Work overload	CS, SR, correlations, hierarchical regression.	Autonomy and supervisor support were positively associated with job satisfaction and organization commitment. Work overload had a significant negative relationship with organization commitment.

					Job satisfaction Commitment		
66	Scholaries and Mark (2004). HRM Journal, 14; 2, 54-74.	190	Software/ technical core permanent employees	UK	18%	Trust (in organization) Supervisor support Job satisfaction (job variety and achievement) Commitment	CS, SR, correlation and hierarchical regression.	Trust in organization was significantly associated with both extrinsic satisfaction and affective commitment. Supervisor support was significantly associated only with affective commitment.
67	Senter and martin (2007). Journal of Vocational Behaviour, 71; 1, 45-68.	5021	Retail	-	70%	Job satisfaction Organization commitment Turnover (months)	CS, SR, turnover objective data. Correlation and hierarchical regression.	Organization commitment has a significant negative association with turnover for FT and PT employees. Job satisfaction showed a significant positive association with turnover for only PT employees.
68	Shadur et al (1999). Group and Organization Management, 24; 4, 479-503.	269	IT professionals	-	28%	Work overload Job satisfaction Organization commitment Participation Communication Support (trust and openness)	CS, SR, correlation and hierarchical regression.	Participation and communication were positively associated with job satisfaction and organization commitment and negatively associated with stress.
69	Singh (1998). Journal of Marketing, 62; 3, 69-86.	285	Salespersons	US	23%	Autonomy Participation Work overload Job satisfaction Commitment	CS, SR, correlation, multiple regression	Autonomy and participation showed significant positive correlation with job satisfaction and organization commitment. Work overload showed a negative correlation with both job attitudes.
70	Sjoberg and Sverke (2000). Scandinavian Journal of Psychology, 41; 3, 247-252.	535	Healthcare	Sweden	91%	Organization commitment Job involvement Turnover	CS, SR, correlation and OLS regression.	Job involvement, Organization commitment and an interaction of job involvement and commitment predicted turnover.
71	Somers (1995). Journal	388	Nursing and	US	92%	Organization	CS, SR, turnover	Organization commitment showed a

	of Organizational Behaviour, 16; 1, 49-58.		health			commitment Turnover	objective data, correlation and logistic regression.	significant negative impact on turnover.
72	Spector et al (2007). Personnel Psychology, 60; 4, 805-835.	1492 1213 1352 1213	Managers	Anglo Asia East Europe Latin America	42% 45% 36% 37%	Work overload Job satisfaction	CS, SR, ANOVA, structural equations modeling.	In Anglo and Asian sample: workload showed a negative association with job satisfaction. In European and American sample: workload measures were positively related to job satisfaction.
73	Spreitzer and Mishra (2002). Journal of Organizational Behaviour, 23, 707-729.	331	Aerospace employees	-	30%	Trust Commitment Turnover	CS, SR, correlation and regression	Trust was positively associated with organization commitment and commitment, in turn, was associated with turnover.
74	Sprigg et al (2000). Human Relations, 53; 11, 1519-1543.	266	-	UK	-	Autonomy Job satisfaction Anxiety-depression	CS, SR, correlations and hierarchical regression.	Individual task related autonomy was positively associated with job satisfaction and negatively associated with job strain.
75	Stinglehamber and Vandenberghe (2003). Journal of Organizational Behaviour, 24; 3, 251-270.	238	University alumni	Belgium	30%	Supervisor support (T2) Organizational support (T2) Commitment (T3) Turnover (T4)	Longitudinal, SR, structural equation modeling.	POS and PSS had a significant positive impact on organization commitment. While POS and PSS had no significant impact on turnover; commitment had a significant negative impact on turnover.
76	Stroh et al (1996). Journal of Vocational behaviour, 49; 1, 99-118.	615	20 Fortune 500 companies	-	21%	Job satisfaction Commitment Turnover (2 years later)	CS, SR, logit regression.	Organization commitment was a significant predictor of turnover.
77	Summers et al (1995). Occupational Stress: A Handbook. Pg 113.	200	Restaurant managers	US	-	Communication (downward) Commitment	CS, SR, correlations and path analysis.	Communication and participation had a significant positive association with job satisfaction and organization

					Intrinsic satisfaction Extrinsic satisfaction Participation in decision making Turnover		commitment and significant negative association with turnover. While job satisfaction and organization showed a significant negative association with turnover.
78	Thomas and Ganster (1995). Journal of Applied Psychology, 80; 1, 6-15.	398	Healthcare	US	99%	Flexibility Autonomy Supervisor support Job satisfaction	CS, SR, correlations and path analysis.	Flexible scheduling and supervisor support had direct positive effects on employee perceptions of control over work and family matters which, in turn, is related to WFC and job satisfaction and depression symptoms.
79	Thompson et al (1999). Journal of Vocational Behaviour, 54; 3, 392-415.	276	Business graduates	US	42%	Supervisor support Family support availability Commitment	CS, SR, correlations and hierarchical multiple regression.	Supervisor support and family support availability was positively associated with organization commitment.
80	Trimble (2006). Journal of Psychology and Theology, 34; 4, 349-360.	468	NGO's		58%	Managerial support Communication Org. commitment Job satisfaction	CS, SR, structural equation modeling.	Communication and leader support were positively associated with commitment and job satisfaction.
81	Van Breukelen et al (2004). Journal of Organizational Behaviour, 25; 7, 893-914.	202	Navy personnel	Netherlands	0%	Job satisfaction Organization Commitment Turnover	Longitudinal, SR, correlation and regression.	2 year follow up period. Job satisfaction and organization commitment predicted turnover of navy personnel. Both attitudes had a significant negative effect on turnover.
82	Vandenberg et al (1999). Group and Organization Management, 24; 3,	3570	Employees from 49 Insurance companies	US and Canada	72%	Flexibility Job satisfaction Commitment Turnover	Managers' ratings of flexibility, and SR measures of	An organization level analysis. Flexibility had a significant positive correlation with job satisfaction and organization commitment and a

	300-339.					commitment and job satisfaction. Turnover rate was obtained from records. SEM for analysis.	significant negative correlation with turnover rate. Job satisfaction and organization commitment showed a significant negative correlation with turnover rate at organization level.
83	Varona (1996). The Journal of Business Communication, 33; 2, 111-140.	307	School staff, hospital and food factory employees	Guatemal a	-	Communication (org. perspective) Commitment	CS, SR, correlation and regression.	Positive relationship between communication and employees' organizational commitment.
84	Wang and Walumbwa (2007). Personnel Psychology, 60; 2, 397-427.	475	Bank employees	China Kenya Thailand	47%	Flexibility Family support Organization commitment	CS, SR, correlation and regression. Group level aggregated analysis	Flexibility and family care policies were significantly and positively related to organization commitment.
85	Wayne et al (2006). Journal of Vocational Behaviour, 69; 3, 445-461.	167	Insurance	US	68%	Supervisor support Family support (benefit usage) Organization commitment	CS, SR, correlation and hierarchical regression.	Supervisor support showed a significant positive association with commitment; however the association of family support (benefit usage) with organization commitment was insignificant.
86	Weber and Weber (2001). Leadership and Organization Development, 22; 6, 291-300.	56 pairs i.e. 112	Services (fire department)	-	-	Trust Supervisor support Autonomy Participation	Longitudinal, SR, correlations and regression analyses.	Support at time 1 was correlated with trust at time 1. Perceived autonomy and participation at time 2 were associated with trust and support at time 2.
87	Whitener (2001). Journal of Management, 27; 5, 515-535.	1689	Union employees	US	83	Trust Perceived organizational support (POS) Commitment	CS, SR, individual and cross level analyses, correlation and hierarchical regression	Here, results reported only for individual level analysis. POS and trust were positively associated with organization commitment. Trust mediated the relationship between POS and organization commitment.
88	Williams (2005).	472	Nursing	-	100%	Trust	CS, SR,	Job satisfaction is used as an

						Autonomy Job satisfaction	correlation and regression	independent variable and trust as dependent.
	Healthcare Management Review, 30; 3, 203-211.							
89	Wright and Bonnett (2007). Journal of Management, 33; 2, 141-160.	112	Services / management. professionals	US (west coast)	26%	Job satisfaction Wellbeing Turnover	Longitudinal, job satisfaction and wellbeing measured at T1, turnover at T2 (2 years later). Logistic regression.	Job satisfaction and wellbeing had a significant negative impact on turnover. The effect was stronger for wellbeing.
90	Yang and Ferris (2004). Journal of Marriage and Family, 66; 5, 1300-1316.	25,822	IBM 2001 Global Work and Life Issues Survey		44%	Flexibility Job workload Job satisfaction	CS, SR, correlations and Structural equation modeling in LISREL	3 items are used to measure flexibility similar to work autonomy. Single item for workload and 3 items for job satisfaction. Flexibility had a significant positive association with job satisfaction, while job workload was significantly and negatively associated with job satisfaction.

Note: CS – cross sectional; SR - self report.

2.4.3 Need for a meta-analysis

The objective of the review undertaken in this project is to find out: (1) if the findings are consistent; (2) if gender or location of study sample moderate the hypothesized paths in Figure 2.2; and (3) whether job attitudes mediate the relationship between perceived work environment characteristics and turnover. Given the larger sample of studies (Table 2.3), it is difficult to present a narrative review of all the included studies. Also, in a narrative review, it is difficult to establish if job attitudes mediate the relationship between perceived work environment characteristics and turnover or not. Meta-analysis is a statistical technique for reviewing and summarizing previous quantitative studies. Meta-analysis not only allows combining existing research into one large study but also allows theory testing if combined with structural equation modelling technique. Meta-analytical models can be easily translated into path diagrams using SEM for theory testing (Cheung, 2008). The meta-analytic structural equation modelling (MASEM) technique allows researchers to include relationships into analysis where not all the relationships specified by a theory need to be included in each primary study (Viswesvaran and Ones, 1995).

Thus the proposed theory (Figure 2.2) is subject to MASEM analysis and the methodology and results are presented in the next chapter (Chapter 3). The limitation of the present MASEM is that it focuses on self-report measures of work environment characteristics by individual employees. It is important to include individuals' perceptions of the work environment for two reasons. First, even if the actual amount of 'support', 'autonomy', and 'perceived work demands' do not change, there may be poorer perceptions of these working conditions (De Jonge et al, 2001). Second, if we are to develop a full understanding of the implications of management polices, then it is imperative that we consider employees' views of these policies (Guest, 1999), since the way in which the individuals experience their work characteristics is crucial to their effects.

In addition, the present meta-analysis has other important contributions to make. As mentioned earlier, social support is measured on the basis of two types of support i.e. managerial support and family support. Also, a broader definition for

71

'managerial support' is used. A supportive management is one that fosters mutual trust and confidence; where supervisors are willing to help subordinates both with job-related and personal problems; superiors share information about company plans, profits and so on with employees; and superiors allow employees to participate in decision-making while recognizing employees' ideas and abilities at work (Likert, 1967). Thus 'managerial support' will have four components to its measurement: employee trust of managers, support for job-related tasks, communication, and participation in decision-making.

Family support, on the other hand, is measured as the extent to which employees perceive their work environments to be supportive of their family needs and responsibilities (Thomas and Ganster, 1995; Allen, 2001; Kinnunen et al, 2005; Mauno et al, 2006). Thus family support is measured using two components: flexible work arrangements and employer-provided childcare benefits. This meta-analysis is a first attempt to include the 'trust' and 'family-friendly' characteristics of the work environment as antecedents of job attitudes and behaviour.

Since the benefit of MASEM is that it allows integrating findings from studies that do not necessarily contain a full set of variables of interest, a study, therefore, will be included in meta-analysis if it contains at least one relationship of interest. The MASEM analysis is used to test the theory (based on social exchange) that employees affective attitudes are a function of work environment perceptions, and perceived work environment characteristics affect turnover through employees' affective attitudes. The methodology and results of MASEM analysis are presented in the next chapter (Chapter 3).

Concluding remarks

The present research seeks to make contribution to existing knowledge by addressing three gaps in the employee turnover research. First, this chapter has presented the review of a number of turnover models and examined the contribution these models have made to understanding turnover as an individual level behaviour. Most of the models have included variables such as job satisfaction, organization commitment, the availability of alternative jobs, job search and quit intentions as

predictors of turnover (March and Simon, 1985; Price, 1977; Mobley, 1977; 1979; Price and Muller, 1981; 1986; Steers and Mowday, 1981). Having understood the turnover behaviour at individual level, it is proposed to look at the same behaviour at higher levels. Evidence to support the need to develop an establishment level, gender and employment sector-specific model of turnover was presented.

Second, two routes are proposed for explaining turnover based on JDCS and SET. Literature on JDCS and SET has been reviewed. A number of theoretical and methodological gaps have been identified in JDCS theory. It is argued that 'family support' be added as a measure of 'social support' in the model and the measure of 'supervisor support' be expanded to include employee trust of managers, communication, participation and support. The present study seeks to extend the current knowledge of employee turnover theory by undertaking a large scale study of employee turnover using data from British workplaces and through the study of organizationally relevant turnover predictors.

Literature based on SET is also reviewed. Given a large number of studies, it is decided to conduct a meta-analysis of these studies to broaden the scope of understanding that exists in respect to the effect of perceptual work environment characteristics on employees' attitudes and turnover. In addition, meta-analytic findings are combined with structural equation modeling to test the mediating role of job attitudes in the work environment characteristic-turnover relationship. This review (MASEM analysis) is presented in the following chapter, Chapter 3.

Chapter 3

A MASEM Analysis of Work Environment Perceptions, Job Attitudes and Turnover

3.1 Introduction

The objective of the present chapter is three-fold. Firstly meta-analytic procedures are used to examine the relationship between perceived work environment characteristics, job satisfaction, organization commitment and turnover. Secondly, moderator analysis based on gender and location of study sample is conducted to examine the extent to which results vary across studies. Finally, using structural equation modeling, the indirect effect of perceived work environment characteristics on turnover through job satisfaction and organization commitment is tested. Accordingly, the chapter is organized into three sections. The first section discusses the methodology of meta-analysis to integrate research findings, the second section presents moderator analysis based on gender and location of study sample, and the third section discusses the application of SEM to test a mediation model (Chapter 2; Figure 2.2) of the impact of perceived work environment characteristics on turnover.

3.2 Meta-analysis

One of the main objectives of systematically reviewing a literature is to obtain clear and reliable results for the variables of interest that can be utilized in developing a research model. Fortunately, a quantitative review (i.e., meta-analysis) provides an efficient way of statistically summarizing the relationships between the variables of interest from the existing literature (Hunter and Schmidt, 1990; Leandro, 2005). A quantitative review contributes to empirical research in a number of ways, such as estimating the true effect of a treatment, combining the results of studies that are contrasting, answering new questions and defining areas in which further research is needed (Leandro, 2005). Moreover, it is always possible to update a meta-analysis when new studies are published in the literature (Griffith et al, 2000; Leandro, 2005).

Thus, the advantage of meta-analytic procedures is that these methods allow quantitative reviews for synthesizing the rapidly expanding research literature on the issues of interest. Also, these methods help in overcoming the potential problems associated with narrative reviews of existing literature. These problems include selective inclusion of studies based on reviewer's judgment of the quality of the study, subjective or misleading interpretation of findings, failure to examine study characteristics as potential explanations for different results across studies, and failure to examine moderating or mediating variables in the studied relationships (Wolf, 1986).

The method of meta-analysis includes several steps for a comprehensive synthesis of the literature for relationships of interest. These steps are identified in Figure 3.1 and explained thoroughly as these are applied in the current meta-analysis.

3.2.1 Variables/ constructs and hypothesized relationships (step 1)

The first step is to identify variables and their operationalizations to be included in the proposed theory for testing. The variables of interest for the present meta-analysis have been identified as key determinants of turnover behaviour in the previous chapter and include psychological work demands, autonomy, trust, participation, supervisor support/consideration, communication, flexibility, child care benefits, and job satisfaction and organization commitment. Work environment characteristics are included as antecedents of both attitudinal and behavioural outcomes. Attitudinal variables (job satisfaction and organization commitment) are included in the framework as mediators.

The hypothesized model posits that employee perceptions of a supportive work environment are positively related to job attitudes and negatively related to turnover. The model not only represents the direct path from work environment perceptions to turnover, but also explains the indirect effect on turnover through their effect on attitudinal variables.

Figure 3.1: Steps in meta-analysis

Identify variables/ constructs

Approach for Meta-analysis

Inclusion criteria

Search for published studies

Identify moderators

Coding studies for meta-analysis

Model for analysis (fixed vs random effect)

Meta-analytic procedure

Calculate average ES

Test the null hypothesis

Test for heterogeneity

Test for publication bias

Report and interpret

Moderator analysis and results

Source: Developed by author after reviewing Cooper and Hedges (1994).

The total number of variables in the proposed model is 11, so 55 pooled mean correlations (including direct and mediating relationships) are necessary for conducting an MASEM analysis. The identified variables are listed in Table 3.1 along with the definitions and measures which informed the decision to include a study in the meta-analysis.

Table 3.1: List of reviewed constructs and operationalizations

Constructs	Definition	Measures
Work Attitudes		
1. Job satisfaction	An attitude reflecting how well people like or dislike their job (Kahn, 1990)	Job satisfaction overall, facet satisfaction.
2. Organization commitment	An attitude reflecting an individual's attachment to the entire organization (Harrison et al, 2006)	Organization commitment, affective commitment
Work environment characteristics		
3. Perceived work demands (PWD)	Employees' perception of too much work to do in less time.	Role overload, stress from perceived work overload.
4. Autonomy	The degree to which employees experience freedom, independence and discretional decision making in terms of scheduling their work, select the equipment they will use, and deciding on the procedure to follow (Sims et al, 1976 cited in Weber and Weber, 2001).	Autonomy, Control over the tasks, pace of work, and order in which you carry out tasks.
5. Trust	Employees believe that the actions of managers will be consistent with their promises and in the best interest of employees (Ganesan, 1994)	Trust, managers can be relied to keep their promises, are sincere and deals with employees honestly and fairly.
6. Communication	Flow and effectiveness of information between management and employees (Carmeli, 2005)	Open communication; information on changes to the policies, staffing, the way you do your job and financial matters.
7. Participation	The degree to which employees believe that they can make decisions about how they do their work (White and Ruh, 1973 cited in Weber and Weber, 2001)	Participation in decision making.
8. Managerial support	Employees perceptions of how management both encourages and implements employee suggestions for improvement (LaRocco et al, 1975 cited in Weber and Weber, 2001)	Managerial supports, supervisor support in seeking employees' views, respond to suggestions, allowing employees' to make final decisions, understand employees' family responsibilities.

9. Flexibility	A form of discretionary time systems include compressing the work week into fewer hours and/or days, part-time employment and flexi-time (Pierce and Newstrom, 1980)	Flexi-time, job sharing, change working hours, work from home, change shifts, working fewer days.
10. Family care benefits	Employees' perceptions regarding the extent to which their work environment is supportive of family needs i.e., number of family friendly benefits offered (Allen, 2001).	Paid child care costs, workplace nursery, paid parental leave, working only during school term times.

Turnover

11. Turnover	Individual employee's decision to leave an organization voluntarily through resignation (Price, 1977).	Actual occurrence of turnover recorded sometimes after collecting the data on predictors.

3.2.2 Approach for meta-analysis (step 2)

There are two approaches to meta-analysis. The first approach, known as combined tests, focuses on testing the statistical significance of the combined results across primary studies (e.g. Cotton and Tuttle, 1986), while the second approach, known as measure of effect size, uses the magnitude of effect size measures in these studies (e.g. Griffeth et al, 2000). Whereas the first approach includes simple counting procedures involving significance levels or raw or weighted test statistics such as t-test or Z-test, the second approach uses group differences or correlation coefficients as measures of effect size (Wolf, 1986).

The meta-analysis undertaken here uses the second approach, and hence the Pearson correlation co-efficient is collected as a measure of effect size in primary studies for the relationships of interest. The correlation co-efficient 'r' is selected as a measure of effect size as most of the studies on the relationships of interest reported the value of 'r' or statistics which can be converted to 'r'.

Where neither 'r' nor other measures which can be converted to 'r' were reported, emails were sent to the authors of those studies requesting the correlation matrix of relationships of interest (e.g. Griffith and Hom, 1995; Yousafzai et al, 2007). Where studies have used multiple independent samples from different organizations, occupations, gender, industries or regions or were repeated over time, then each correlation is recorded separately (Yousafzai et al, 2007). Also, when same data set was used in various articles assessing the same variables, only one publication is included (Griffith and Hom, 1995; Yousafzai et al, 2007).

3.2.3 Inclusion criteria (Step 3)

Studies are included in the meta-analysis if the following conditions are met: studies are published between the years 1995 and 2007; the study has quantitative analysis of empirical data on variables of interest; actual turnover (voluntary) is used; the level of analysis is the individual; and the magnitude of bi-variate relationships between

any of the 11 operationalizations of the constructs are reported or enough data is available to make conversions.

Given the number of correlations (55) required for MASEM it is very unlikely that all the correlations for variables of interest can be obtained from a single study. This leads to the problem of missing correlations which affects the estimation process of pooled correlations.

Missing values may be a result of various causes. Individual studies, depending on their research objectives, may not have analyzed all of the variables of interest in the meta-analysis (Viswesvaran and Ones, 1995), thus resulting in missing effect sizes (Piggott, 1994). Data may be missing as a result of a file drawer problem (Rosenthal, 1979), researchers are more interested in the relationship of some variables over the others (Harris and Rosenthal, 1985), or information is missing on study characteristics which are commonly used as predictors in the models of effect sizes (Piggott, 1994).

Viswesvaran and Ones (1995) have discussed two ways to handle the issue of the missing effect sizes due to the fact that individual studies do not include the same set of variables as in the meta-analysis. These methods include list-wise deletion or pair-wise deletion. The list-wise deletion method allows only studies that contain all the model variables, whereas the pair-wise deletion method allows a different number of studies on any of the relationships of interest. So in a pair-wise deletion, it is not compulsory for a study to test all the variables in the proposed model, thus allowing the testing of theories involving variables/constructs that are not all studied in a single study (Viswesvaran and Ones, 1995).

In some cases, researchers have used the list-wise deletion strategy by limiting themselves to study only those relationships for which a full matrix of correlations is obtained from the literature (e.g. Hom et al, 1992). In other cases, researchers have used a pair-wise deletion strategy to compute a pooled correlation matrix (Hunter, 1983; Verhaeghen and Salthouse, 1997). Hence for the present meta-analysis, a pair-wise deletion method is used for accumulating correlations across studies, as all the 55 relationships hypothesized in the proposed model are not tested in a single study.

The pair-wise deletion method has several implications, when used in a structural equation modelling analysis. One potential problem is that the data are combined from different samples; this may lead to inconsistent correlations or result in a covariance matrix that is not positive definite (Kim and Curry, 1977; Malhotra, 1987; Viswesvaran and Ones, 1995). However, this issue has not been supported with empirical evidence (Hunter, 1983; Viswesvaran and Ones, 1995; Cheung and Chan, 2005a). Another problem concerns the sample size to be used for the estimation of the resulting model. When pair-wise deletion is used, then the number of studies used to estimate a pooled correlation for each pair of relationships is different. Researchers typically have recommended the median (Brown and Peterson, 1993; Carson et al, 1993) or harmonic mean (Viswesvaran and Ones, 1995) of the sample sizes of the correlations in the pooled correlation matrix. Thus, following Viswesvaran and Ones (1995), the harmonic mean of sample sizes is used as sample for estimating the hypothesized paths in Figure 2.2.

The problem of studies that are unavailable for use in meta-analysis constitute another form of missingness which can be dealt with publication bias analysis (Begg, 1994) using Rosenthal's (1979) fail safe N method (see Section 3.2.8.4).

3.2.4 Search for published studies (step 4)

Literature from published journal articles, conference proceedings and books on relationships of interest is collected using the three techniques suggested by Hunter and Schmidt (1990).

The first includes the internet search engine Google scholar and electronic databases of research journals. The following databases are broadly scanned: Business and Economics (EBSCO, ABI/inform, Emerald, EconLit and Elsevier), nursing and medicine (CINHALL, PubMed, EMBASE), Psychology (PsycInfo, PsycARTICLES) and sociology (ASSIA). The key words used for search were: characteristics of work environment; work environment perceptions; job attitudes; employee turnover; voluntary turnover; job turnover; actual turnover; employee separation; turnover base rate. In order to collect the maximum number of studies on perceived work

environment characteristics and job attitudes included in the proposed model, search is also made using dimensions of these constructs as well. For this purpose, additional key words used to search studies include trust; autonomy; participation; communication; supervisor support; flexibility; and family support. Job satisfaction and organization commitment are also used as key words to locate studies for job attitudes and their relationship with actual turnover, and measures of work environment.

Secondly, reference listings from previously collected articles are reviewed to locate more relevant studies matching the key words. Thirdly, hardcopy issues of recently published journals of Human Resource Management, Personnel Psychology, Business Communication, Management and Organization Behavior are also reviewed to locate studies.

Following the inclusion criteria defined above, the search resulted in 131 studies contributing 151 independent samples. Table 3.2 provides the list of journals that contributed the 131 published articles studying at least one of the relationships of interest published between 1995 and 2007.

3.2.5 Identifying moderators (step 5)

Moderators are the variables (categorical or continuous) that may influence the magnitude or direction of the relationship of variables of interest (Shadish and Sweeney, 1991; Miller and Pollock, 1994). In the meta-analysis, if between-studies variance is not equal to zero, the presence of one or more moderator variables should be suspected (Arthur et al, 2001). However, the decision for the choice and testing of moderator variables may be driven theoretically or empirically (Hunter and Schmidt, 1990). Earlier meta-analyses have examined study-sample characteristics such as gender, age, tenure, occupations (Cohen, 1993; Tett and Mayer, 1993; Brown, 1996; Griffith et al, 2000); and turnover measurement (Griffith et al, 2000) as moderators.

Table 3.2: Journal Sources for Studies included in Meta-Analysis

S. No.	Journal of publication	No. of studies	S. No.	Journal of publication	No. of studies
1	Academy of Management Journal	5	29	Journal of Managerial Psychology	2
2	Communication Conference	1	30	Journal of Marketing	1
3	Early Education and Development	1	31	Journal of Marriage and Family	2
4	Employee Relations	1	32	Journal of Occupational and Organizational Health Psychology	1
5	Family Business Review	1	33	Journal of Occupational and Organizational Psychology	1
6	Group and Organization Management	2	34	Journal of Occupational Health Psychology	2
7	Health Care Management Review	2	35	Journal of Organizational Behaviour	18
8	Hospitality Management	1	36	Journal of Personnel Selling and Sales management	1
9	Human Relations	6	37	Journal of Psychology	1
10	Human Resource Management	1	38	Journal of Psychology and Theology	1
11	Human Resource Management Journal	3	39	Journal of Retailing	1
12	Human Resource Management Review	4	40	Journal of Vocational Behaviour	16
13	Industrial Relations	1	41	Leadership and Organization Development Journal	1
14	Information and Management	1	42	Management Research News	1
15	International Journal of Education Management	1	43	MIS Quarterly	1
16	International Journal of Human Resource Management	5	44	Nurse Education Today	1
17	International Journal of Manpower	2	45	Occupational Stress: A Handbook	1
18	International Journal of Nursing Studies	1	46	Personnel Psychology	2
19	International Journal of Stress management	2	47	Personnel Review	2
20	Journal of American Academy of Business	1	48	Public Personnel Management	1
21	Journal of Applied Management	1	49	Research in Nursing and Health	1
22	Journal of Applied Psychology	8	50	Scandinavian Journal of Psychology	1
23	Journal of Business Communication	2	51	South Asian Journal of Management	1
24	Journal of Business Ethics	1	52	Stress and Health	1
25	Journal of Business Psychology	1	53	Stress Medicine	1
26	Journal of Business Research	3	54	The TQM magazine	1
27	Journal of Management	5	55	Tourism Management	2
28	Journal of Management Development	1	56	Work and Stress	2

In this meta-analysis three characteristics are used as moderators. These characteristics include 'gender', 'location' and 'job level' (Griffith et al, 2000). The choice of using these characteristics as potential moderators is guided by review objectives (Chapter 2, section 2.4.3). It was argued that gender and sample characteristics may be used as moderators of the relationships between perceived work environment characteristics, job attitudes, and turnover.

3.2.6 Coding the studies for meta-analysis (step 6)

After the studies are selected, based on inclusion criteria, the second important task is to code these studies for meta-analysis. Hence, a code sheet (Stock, 1994) is developed for collecting study characteristics, relationships of identified variables, and moderator variables in an efficient and effective manner. The characteristics coded included: publication characteristics, research design characteristics, effect size measures and moderator variables.

The publication characteristics include: the code number of the study (each study was assigned a unique code number for future reference), authors, year, and source of publication. Research design characteristics include study type (cross-sectional or longitudinal), country (i.e. sample location), and type of respondents (managers or non managers), industry, sample size, and sample composition (all male respondents, female respondents or both). Effect size includes a measure of effect size (correlation coefficient) for all relationships. In instances where the correlation coefficient is not reported, the additional information required to calculate an effect size is recorded and the correlation coefficient is computed.

Location and job level are used as categorical moderators. 'Location', defined as location of study sample, is categorized as US versus non-US location. 'Location' is given the value 1 where the sample is drawn from US, and the value 2 for a non US sample. Similarly, job level is coded as a dichotomy, i.e. manager versus non-manager. Job level is coded as '1' if the respondents of the study are reported as managers and '2' if the respondents are 'non-managers'. Gender is employed as a continuous moderator defined on the percentage of female respondents in the study

sample. It is decided to use gender as a continuous moderator (Griffith et al., 2000; Byron, 2005) for the difficulty of finding all male or all female samples for assessing the impact of gender as a moderator. Where the percentage of females is not reported in the studies, it is calculated by using the information on total sample size and the number of female or male respondents in the sample.

In cases where the desired relationships of variables are examined by taking samples across different employee groups (professionals, managers and employees), different types of organization (manufacturing or services), different times and different locations, separate effect sizes are recorded on the coding sheet as subgroups for analysis. All the coded data is recorded in an SPSS worksheet for analysis.

3.2.7 Choosing an appropriate model for analysis (step 7)

The objective of meta-analysis is to estimate the combined effect size for all studies included in the analysis. If all the studies included are equally precise then a mean effect size would give the estimate of the true effect (Wolf, 1986). However, this is not usually the case. Thus, the approaches for synthesizing the correlations use some type of weighting to account for statistical artifacts, such as different sample sizes across studies (Furlow and Beretvas, 2006). Thus, a weighted mean would give the true combined effect size.

Two models are used in meta-analysis to assign weights to studies, the fixed effect model and random effect model. Both models have different assumptions and, therefore, follow different procedures to assign weights to the studies (Hedges and Vevea, 1998).

The fixed effect model assumes that only one true effect size is measured by all studies. Hence, the combined effect is the estimate of this true effect size (Hedges 1983). Weights are assigned to studies based on the sample size as some studies are more precise than others, so more weight should be assigned to studies carrying more information (Hunter and Schmidt, 1990). Since the estimates from larger studies are usually more precise than the estimates from smaller studies (Hedges and

85

Vevea, 1998), a large sample study is assigned a larger weight (Shadish and Haddock, 1994). Based on this assumption, the only source of error is the random error in the studies, and it tends to zero with a large sample size (Hedges and Olkin, 1985; Shadish and Haddock, 1994).

The random effect model assumes that the true effect size varies from study to study and the studies included in the meta-analysis make a random sample of the distribution of the population effect size (Hedges, 1983; Shadish and Haddock, 1994). Thus observed outcomes in studies differ from each other, not only because of sampling error, but also because of underlying population differences (Shadish and Haddock, 1994). Based on this assumption, each study is estimating a different effect size, be it a small study or a large one, and the combined effect is the estimate of the average effect of the distribution of effect sizes (Hedges and Vevea, 1998). The random effect model has two sources of error - random and sampling error (Leandro, 2005; Hunter and Schmidt, 1990). The estimate of the combined effect depends on both the sample sizes of individual studies used in meta-analysis and the number of studies included in meta-analysis. Random error tends to zero if the sample sizes of included studies are large. However, sampling error would still be there as these studies have been sampled from all possible studies (Hunter and Schmidt, 1990). Thus between-studies variation needs to be considered along with within-studies variation to assign weights to individual studies.

It is very unlikely that all the studies included in meta-analysis are functionally equal. For instance, studies have different respondents, different locations, different occupations, and have used different instruments to collect data. These characteristics will have an impact on the results. Therefore, the random effect model seems more appropriate to use for the current meta-analysis.

However, here both fixed and random effect analysis are undertaken and presented, as fixed effect analysis is needed to compute the variance component estimate (between study) used to compute the random effect weights (Hedges and Vevea, 1998).

3.2.8 Meta- analytic methods (step 8)

After choosing an appropriate model for meta-analysis, the meta-analytic methods of Hedges and Olkin (1985) are applied to analyze the data. These methods and their applications are discussed in detail in the following sections. Comprehensive meta-analysis software is used for data analysis.

3.2.8.1 Calculating average effect size

Hedges and Olkin (1985) proposed to use Fisher's z-transformed correlation coefficients, because the sampling distribution of the correlation coefficient becomes skewed when the population correlation deviates from zero. Hunter and Schmidt (1990) noted that the use of the z-transformation can lead to positively biased results and favoured the methods for combining correlations without Fisher's transformation. However, other researchers have advocated the use of Fisher's z-transformation (Silver and Dunlap, 1987; Shadish and Haddock, 1994; Hafdahl, 2001). Silver and Dunlap (1987) compared transformed and untransformed correlations with small sample sizes (30 or less) and concluded that transformed correlations were less biased. Similar findings resulted when Hafdahl (2001), using the univariate weighting method, assessed the difference between transformed and untransformed correlations. Shadish and Haddock (1994) advocated using the Fisher's z-transformation for synthesizing correlations because Fisher's z has an asymptotic multivariate normal distribution.

Thus, after obtaining correlations between variables of interest across separate studies, each correlation (r_i) for the study (i) is converted to Fisher's Z statistics (Z_i). The within-study variance (v_i) and standard error of Fisher's Z (SEz_i), which are a function of within-study sample size (n_i), are computed. Also, the standard error of the correlation coefficient (SEr_i) is computed as a function of Fisher's Z. The formulae given by Hedges and Olkin (1985, p 227) are used for these computations.

$$Z_i = 0.5 \ln[(1+r_i)/(1-r_i)] \qquad (1)$$

$$SEz_i = 1/\sqrt{(n_i - 3)}, \qquad \text{Variance } (v_i) = 1/(n_i - 3) \qquad (2)$$

$$SEr_i = SEz_i * (1 - r_i^2) \qquad (3)$$

The transformed primary correlations (Fisher's Z) are then used to calculate an initial weighted mean correlation, in which each primary correlation is weighted by the inverse of its variance (v_i^*). Here variance includes both within-study (v_i) and between-study (τ^2) variance, however, the between-study variance is set to zero for fixed effect analysis (Hedges and Vevea, 1998). Thus, for fixed effect analysis, the formula for the weights (w_i) for individual studies and average effect size (Hedges and Vevea, 1998, equation 2 and 3) are given by:

$$w_i = 1/v_i^*, \qquad\qquad (4)$$

Where $v_i^* = v_i + \tau^2$ (Hedges and Vevea, 1998; equation 9)

$v_i = 1/(n_i - 3)$ from equation (2) above and $\tau^2 = 0$ for fixed effect model, thus,

$w_i = (n_i - 3)$.

$$\text{Weighted mean } (Z.) = (\textstyle\sum w_i Z_i)/\sum w_i \qquad\qquad (5)$$

The sampling variance (v.) of this average effect size (Hedges and Vevea, 1998, p490, equation 4) is:

$$v. = 1/\textstyle\sum w_i \qquad\qquad (6)$$

Then 95% confidence intervals are computed using the standard errors of weighted mean correlation. The formula is:

$$Z. \pm Z_{\alpha/2} SE_{Z_i} \qquad\qquad (7)$$

After the confidence intervals were computed, fisher's-Z values are then transformed back to 'r' values (Hedges and Olkin, 1985; equation8 p 227). The transformation used is:

$$r_i = (e^{2z} - 1)/(e^{2z} + 1) \qquad\qquad (8)$$

3.2.8.2 Test of null hypothesis

The null hypothesis 'mean of the true effect is zero' is tested using z-statistics and a significant p-value for tested hypothesis indicates that the mean of the true effect is different from zero. The test of null hypothesis is obtained by using (Hedges and Vevea, 1998; equation 6) formula:

$$Z = Z./SE_{Z_i} \qquad\qquad (9)$$

The relationships, if significantly different from zero, are classified as weak, moderate and strong following Cohen's (1977) suggestion. A weighted mean

correlation of 0.10 is classified as weak effect, 0.30 as moderate and 0.50 is considered as a strong effect size (Cohen, 1977).

3.2.8.3 Test for heterogeneity

A test for heterogeneity examines the null hypothesis that all studies are evaluating the same effect (Higgins et al, 2003). Heterogeneity, likely to arise through methodological diversity in studies (Higgins et al, 2003), refers to the variation in study outcomes between studies (Leandro, 2005). The measure of heterogeneity is Cochran's Q, where Q is distributed as a chi-square statistic with degrees of freedom (df) equal to number of studies (k) less one (Hunter and Schmidt, 1990; Leandro, 2005). 'Q' is the observed variation and 'df' is expected variation. Hence the difference between Q and degree of freedom (df) is the excess variance, so if Q is significantly larger than degree of freedom (df), it indicates heterogeneity. The Q statistic of heterogeneity is calculated (Hedges and Olkin, 1985, equation 16, p 235; Hedges and Vevea, 1998, equation 7, p490) for each weighted correlation.

$$Q = \sum w_i (Z_i - Z_.)^2 \qquad (10)$$

The Q statistic is known to be poor at detecting true heterogeneity among studies as the power of test is low if the number of studies included in meta-analysis are small and is excessive when there are many studies (Leandro, 2005; Higgins et al., 2003). Higgins et al. (2003) have provided an alternative approach, I^2 that quantifies the effect of heterogeneity and provides a measure of the degree of inconsistency in the studies' results that is due to heterogeneity. Hence, I^2 is also computed (Higgins et al., 2003, p 558) as an alternative for detecting heterogeneity along with Q statistics.

$$I^2 = 100\% * (Q - df) / Q \qquad (11)$$

Also, τ^2 statistic is computed for the between study variance component which will be different from zero in the presence of heterogeneity (Hedges and Vevea, 1998, equation 10, p 492).

$$\tau^2 = [Q - (k-1)] / c \quad \text{where } c = \sum w_i - [\sum w_i^2 / \sum w_i] \qquad (12)$$

Hence a test for heterogeneity is performed using all three methods. First, the Q-statistic and degrees of freedom are computed. A significant Q indicates the presence of heterogeneity. Secondly, I^2 is computed to measure inconsistency in studies. I^2 values of 25%, 50% and 75% indicate low, moderate and high heterogeneity (Leandro, 2005). Thirdly, τ^2 is calculated to measure between-studies variance and a tau-square not equal to zero indicates heterogeneity.

In the presence of heterogeneity, the weighted average effect size calculated under the random effect model gives a better estimate. In the absence of heterogeneity both the random effect model and fixed effect models give the same results (Hedges and Vevea, 1998). Thus, in the presence of heterogeneity, the value of τ^2 is substituted in equation 4 above to compute the weights under the random effect model and the weighted average effect size is re-computed using random weights.

3.2.8.4 Test for publication bias

One of the most frequent criticisms against meta-analysis is that the studies available for analysis are a biased sample of all available studies (Wolf, 1986; Hunter and Schmidt, 1990). Usually only studies where a significant difference is found are published. This implies that some completed studies are not published and therefore cannot be considered in the meta-analysis. These unpublished studies may have different results from the published studies (Wolf, 1986; Hunter and Schmidt, 1990; Leandro, 2005) and meta-analysis may have a different result if all studies could have been considered (Leandro, 2005). This criticism applies equally to narrative reviews (Hunter and Schmidt, 1990). However, in meta-analysis, there are several ways to evaluate the presence of publication bias since its effects cannot be eliminated (Leandro, 2005).

In the present meta-analysis, the fail safe N method is used to assess publication bias. Fail safe N is defined as the number of new unpublished or un-retrieved non-significant studies that would bring down the significance of a meta-analysis to non significance i.e., $p \geq 0.05$ (Rosenthal, 1979). The formula for fail safe N (Carson et al,

1990, p 235, equation 1) is given below, where k is the number of studies and Z_k is the average Z obtained for k studies.

$$\text{Fail-safe } N = (k/2.706) \, [k \, (Z_k)^2 - 2.706] \tag{13}$$

Fail-safe N communicates the stability of the meta-analysis results when the value of fail-safe N is large relative to number of studies included in meta-analysis (Carson et al., 1990), and indicates the need for more research to clarify the true relationship where fail-safe N is small (Schmidt et al., 1985).

3.2.8.5 Results and discussion

Before applying the MASEM test, an estimate of the pooled correlation matrix is required. Hence, meta-analytic methods are applied to all the relationships in the proposed model (Figure 2.2), except where the number of studies available is less than two. For the relationships where only one study is found, the resulting correlation is imputed, as it is in the correlation matrix (e.g. Bamberg and Moser, 2007). The representativeness of the pooled correlation matrix is also checked for publication bias (Carson et al., 1990).

Meta-analytic results showing the relationships between each of the work environment characteristics, and with each of the three outcome variables (job satisfaction, organization commitment and turnover) are presented in Table 3.3 through to Table 3.5. Each relationship in these tables contains the number of samples included in each weighted average correlation (k), the total sample size for each correlation (N), the weighted average effect size (for both fixed and random effect models), the number of additional studies needed to report correlation coefficient as non-significant (Rosenthal's fail-safe N), the 95% confidence interval, and the test of hypothesis that the weighted average effect size is different from zero. The values of the Q statistic and degrees of freedom (df), I^2, and tau-square are reported for each relationship of interest to examine the heterogeneity across studies. The Q statistic is marked with an asterisk (*) where significant heterogeneity is detected, indicating the presence of moderator variable. An I^2 value greater than 50%

91

and 75% indicates moderate or high heterogeneity respectively. A tau-square different from zero also indicates heterogeneity.

Table 3.3 contains the correlations between each of the eight work environment characteristics and, interestingly, all the dimensions are moderately inter-correlated with each other ($0.3 \leq r < 0.5$) with the exception of the inter-correlations between trust and participation, trust and supervisor support, and communication and supervisor support - which are all strongly correlated with each other ($r \geq 0.5$). A small effect size ($r = .1614$) is found for only the relationship of flexibility and supervisor support. Of the managerial support-related work environment perceptions (i.e., communication, participation, trust, supervisor support), communication, participation and supervisor support have a weak but significant negative relationship with perceived work overload. Autonomy (job control) also showed a weak but significant negative relationship with perceived work overload.

All these results are stable, as hundreds of null effects would be needed in the file drawers of the researchers to bring the average effect size estimate down to a level not considered significant (see fail safe N in Table 3.3). With the exception of the relationships between flexibility and communication, flexibility and supervisor support, and participation and perceived work overload, all inter-correlations between workplace environment characteristics indicated the presence of moderators (Q statistics significant).

Correlations between characteristics of work environment and attitudinal variables are given in Table 3.4. Both job satisfaction and organization commitment are significantly positively related to all the characteristics of work environment except perceived work overload. Perceived work overload is negatively correlated with both job attitudes. The estimated effect size shows a moderate relationship between perceptual work environment characteristics and job satisfaction, and organization commitment. Hence it is clear that employee perceptions of their work environment have a significant impact on their job attitudes.

Table 3.3: Meta-Analysis results for inter-correlations in perceived work environment characteristics

Relationships	Studies, sample and fail safe N			Combined Effect size (ES), Fisher Z (standard error)		95% confidence interval		Null hypothesis	Heterogeneity		
	k	N	Safe N	ES (r)	Fisher Z (SE)	Lower limit	Upper limit	Z value	Q (df)	I²	τ²
Trust and communication	4	690	58	0.27*	0.274* (0.038)	0.199	0.349	7.131*	13.823* (3)	78.298	0.023
				0.31*	0.319* (0.086)	0.151	0.488	3.719*			
Trust & autonomy	3	1012	116	0.41*	0.430* (0.032)	0.368	0.492	13.612*	58.896* (2)	96.604	0.103
				0.38*	0.400* (0.192)	0.024	0.777	2.068*			
Trust & participation	2	540	-	0.55*	0.620*(0.043)	0.535	0.704	14.319*	4.212* (1)	76.259	0.034
				0.61*	0.710* (0.146)	0.425	0.996	4.872*			
Trust & supervisor support	3	786	345	0.68*	0.827* (0.036)	0.757	0.898	23.059*	17.593* (2)	88.632	0.039
				0.67*	0.813* (0.124)	0.569	1.056	6.541*			
Flexibility & PWO	1	2248	-	-0.12	-	-	-	-	-	-	-
Flexibility and communication	2	2043	-	0.37*	0.383* (0.022)	0.340	0.427	17.29*	0.512 (1)	0	0
				0.37*	0.383* (0.022)	0.340	0.427	17.29*			
Flexibility & autonomy	3	864	66	0.29*	0.301* (0.034)	0.234	0.368	8.814*	22.282* (2)	91.024	0.037
				0.33*	0.346* (0.117)	0.116	0.576	2.951*			
Flexibility & family support	4	3802	157	0.18*	0.181* (0.016)	0.149	0.213	11.150*	82.923* (3)	96.382	0.036
				0.24*	0.243* (0.096)	0.054	0.431	2.521*			
Flexibility & supervisor support	4	3347	376	0.16*	0.163* (0.017)	0.129	0.197	9.406*	2.275 (3)	0	0
				0.16*	0.163* (0.017)	0.129	0.197	9.406*			
communication & PWO	3	569	20	-0.214	-0.217* (0.042)	-0.300	-0.134	-5.136*	4.277 (2)	53.243	0.007
				-0.229	-0.233* (0.064)	-0.359	-0.108	-3.634*			
Communication & autonomy	2	261	-	0.437*	0.468* (0.063)	0.346	0.591	7.481*	24.899* (1)	95.984	0.293
				0.495**	0.542** (0.332)	-0.088	1.173	1.685**			
Communication & participation *	1	191	-	0.35							
Communication & supervisor support	4	890	392	0.63*	0.739* (0.034)	0.672	0.805	21.884*	46.874* (3)	93.6	0.078
				0.58*	0.655* (0.145)	0.371	0.939	4.521*			
Autonomy & PWO	8	4675	305	-0.139*	-0.14* (0.015)	-0.169	-0.112	-9.567*	467.53* (7)	98.503	0.123
				-0.239**	-0.24** (0.126)	-0.490	0.002	-1.945**			
Autonomy & participation	2	341	-	0.35*	0.365* (0.055)	0.258	0.472	6.677*	10.608* (1)	90.573	0.108
				0.47*	0.516* (0.243)	0.039	0.993	2.120*			
Autonomy & family support *	1	1938	-	0.24							
Autonomy and supervisor support	19	8553	4032	0.33*	0.337* (0.011)	0.315	0.358	31.034*	262.87* (18)	93.153	0.032
				0.34*	0.349* (0.044)	0.263	0.435	7.942*			
Participation & PWO	3	745	22	-0.208*	-0.211* (0.037)	-0.284	-0.139	-5.733*	2.769 (2)	27.786	0.002
				-0.207*	-0.210* (0.044)	-0.296	-0.125	-4.821*			
Participation & supervisor support	3	639	126	0.54*	0.611* (0.04)	0.533	0.689	15.327*	19.041* (2)	89.496	0.070
				0.49*	0.540* (0.163)	0.220	0.859	3.308*			
Supervisor support & PWO	8	4939	485	-0.265*	-0.271* (0.014)	-0.299	-0.243	-19.021*	27.673* (7)	74.704	0.006
				-0.246*	-0.251* (0.035)	-0.320	-0.182	-7.132*			
Family and supervisor support	4	4742	376	0.28*	0.287* (0.015)	0.259	0.316	19.739*	146.591* (3)	97.953	0.051
				0.32*	0.333* (0.115)	0.109	0.558	2.908*			

Results for fixed effect model (upper row) and for random effect model (lower row) are given. ES is combined effect size of correlation coefficients. * is significant at 5%. ** is significant at 10%. Italics represent no pooled correlation for number of studies is less than 2. Fail safe N is calculated if atleast 3 studies tested the relationship. SE is standard errors for Fisher's Z.

Table 3.4: Meta-Analytic results for correlations between work environment characteristics and job attitudes

relationship	Studies, sample and fail safe N			Combined Effect size (ES), Fisher Z (standard error)		95% confidence interval		Null Hypothesis	Heterogeneity		
	k	N	Safe N	ES	Fisher Z (SE)	Lower limit	Upper limit	Z value	Q (df)	I²	τ²
PWO & job satisfaction	25	15212	7928	-0.299* - 0.311*	-0.308* (0.008) -0.321* (0.040)	-0.324 -0.400	-0.292 -0.243	-37.894* -8.031*	538.550* (24)	95.544	0.037
Trust & job satisfaction	10	2527	943	0.373* 0.3838*	0.391* (0.020) 0.405* (0.071)	0.352 0.266	0.431 0.543	19.563* 5.738*	104.05* (9)	91.351	0.0438
Flexibility & job satisfaction	6	32713	1186	0.243* 0.194*	0.248* (0.006) 0.196* (0.059)	0.237 0.0797	0.259 0.312	44.866* 3.310*	231.43* (5)	97.839	0.0192
Communication & job satisfaction	6	1490	344	0.358* 0.3995*	0.375* (0.026) 0.423* (0.079)	0.324 0.268	0.426 0.578	14.379* 5.354*	42.92* (5)	88.349	0.0324
Autonomy & job satisfaction	26	11269	2516	0.396* 0.423*	0.419* (0.009) 0.452* (0.038)	0.400 0.378	0.438 0.525	44.327* 12.032*	370.16* (25)	93.246	0.033
Participation & job satisfaction	6	1256	305	0.393* 0.385*	0.416* (0.028) 0.406* (0.044)	0.360 0.320	0.471 0.492	14.620* 9.266*	11.479* (5)	56.443	0.0063
Family support & job satisfaction	5	4258	192	0.193* 0.219*	0.195* (0.015) 0.222* (0.065)	0.165 0.094	0.225 0.350	12.720* 3.407*	52.997* (4)	92.452	0.0185
Supervisor support & job satisfaction	22	10166	1113	0.461* 0.437*	0.499* (0.010) 0.469* (0.033)	0.480 0.403	0.519 0.534	50.167* 14.007*	213.06* (21)	90.144	0.021
PWO & organization commitment	16	5697	1767	-0.282* -0.277*	-0.290* (0.013) -0.285* (0.040)	-0.316 -0.364	-0.264 -0.205	-21.825* -7.048*	131.220* (15)	88.569	0.022
Trust & organization commitment	14	4678	3960	0.518* 0.482*	0.547* (0.015) 0.525* (0.049)	0.545 0.430	0.603 0.620	39.091* 10.804*	118.41* (13)	89.022	0.0274
Flexibility & organization commitment	6	6763	473	0.215* 0.256*	0.218* (0.012) 0.262* (0.110)	0.194 0.047	0.242 0.477	17.904* 2.384*	305.59* (5)	98.364	0.0697
Communication & org. commitment	13	4805	2265	0.379* 0.394*	0.399* (0.014) 0.416* (0.037)	0.371 0.344	0.427 0.489	27.547* 11.241*	65.59* (12)	81.705	0.0136
Autonomy & org. commitment	13	7749	2604	0.314* 0.331*	0.324* (0.011) 0.344* (0.041)	0.302 0.263	0.347 0.425	28.492* 8.336*	146.694* (12)	91.82	0.020
Participation & org. commitment	7	1740	616	0.427* 0.428*	0.456* (0.024) 0.458* (0.050)	0.409 0.359	0.503 0.556	18.914* 9.122*	24.35* (6)	75.364	0.0128
Family support & org commitment	4	2177	97	0.245* 0.209*	0.250* (0.021) 0.212* (0.057)	0.208 0.100	0.292 0.324	11.642* 3.715*	16.06* (3)	81.320	0.0101
Supervisor support & commitment	22	8315	7745	0.407* 0.404*	0.432* (0.011) 0.428* (0.035)	0.411 0.359	0.454 0.498	39.253* 12.084*	201.61* (21)	89.584	0.024

Results for fixed effect model (upper row) and for random effect model (lower row) are given. ES is combined effect size of correlation coefficients. * is significant at 5%. ** is significant at 10%. Fail safe N is calculated if at least 3 studies tested the relationship. SE is standard errors for Fisher's Z.

Table 3.5: Meta-Analytic results for correlations between perceived work environment characteristics and job attitudes, and turnover

Relationship	Sample, effect size and Fail Safe N			Combined Effect size (ES), Fisher Z (standard error)		95% confidence interval		Null Hypothesis Z value	Heterogeneity		
	k	N	Safe N	Effect size	Fisher's Z (SE)	lower	upper		Q (df)	I^2	τ^2
job satisfaction & organization commitment	62	26070	3444	0.643*	0.764* (0.006)	0.752	0.776	122.923*	944.539* (61)	93.542	0.037
				0.593*	0.682* (0.026)	0.631	0.733	26.292*			
PWO & Turnover	1	221	-	0.22	-	-	-	-	-	-	-
Flexibility & Turnover	1	3570	-	-0.08							
Autonomy & Turnover	3	2204	9	-0.082*	-0.082* (0.021)	-0.124	-0.040	-3.827*	0.0217 (2)	0	0
				-0.082*	-0.082* (0.021)	-0.124	-0.040	-3.827*			
Supervisor support & Turnover	1	493	-	-0.11	-	-	-	-	-	-	-
Job satisfaction & Turnover	9	5187	260	-0.166*	-0.167* (0.014)	-0.195	-0.140	-12.016*	9.096 (8)	12.052	0.0004
				-0.176*	-0.178* (0.019)	-0.214	-0.141	-9.570*			
Organization Commitment & Turnover	14	12573	1201	-0.205*	-0.208* (0.009)	-0.225	-0.190	-23.248*	30.098* (13)	56.808	0.0018
				-0.193*	-0.196* (0.017)	-0.230	-0.162	-11.307*			

Results for fixed effect model (upper row) and for random effect model (lower row) are given. ES is combined effect size of correlation coefficients. * is significant at 5%. ** is significant at 10%. Italics represent no pooled correlation for number of studies is less than 2. Fail safe N is calculated if atleast 3 studies tested the relationship. SE is standard errors for Fisher's Z.

Table 3.5 contains the inter-correlations among attitudinal variables, and correlations of environment and attitudinal variables with turnover. Job attitude variables, job satisfaction and organization commitment have strong positive inter-correlations ($r=$ 0.593*). Similar to the findings of Griffith et al. (2000), of the job attitude variables, organization commitment ($r=$ -0.205*) is a better predictor of actual voluntary turnover than job satisfaction ($r=$ -0.166*). Perceived autonomy is negatively correlated with turnover. However, the results in Table 3.5 show the paucity of research on actual turnover behaviour with various perceptual work environment characteristics. Therefore, the average weighted correlations of included predictors with turnover could not be computed.

Heterogeneity between studies is assessed using all the three methods discussed above, including, Q test, I^2 and τ^2. The test of heterogeneity (Q-statistics) proved significant, indicating the presence of between-studies variation. However, the Q test alone is not sufficient to detect heterogeneity. The relationships including flexibility and communication, flexibility and supervisor support, communication and perceived work overload, participation and perceived work overload, and autonomy and turnover are homogeneous as Q is insignificant and also I^2 and τ^2 are equal to zero.

For all other relationships (Table 3.3 through to Table 3.5), there seemed to be a significant variation between studies used in the meta-analysis. Hence, moderator analysis is undertaken with already identified moderators for relationships indicating heterogeneity. The results are discussed in the following section.

3.3 Moderator analysis

Following Griffith et al. (2000), moderator tests are undertaken for only those relationships where ten or more independent samples assessed those relationships and if the Q statistic (test of heterogeneity) indicated the presence of a moderator, given the difficulty in interpreting correlations involving very small numbers of samples (Griffith et al., 2000; Ford et al., 2007). Fewer relationships (i.e. only 12 out of

55) met these criteria (see Table 3.6 and 3.7), and the moderator test is limited to only these relationships.

First, the categorical moderator 'location' is considered. Location is coded as a dichotomy with value 1 for 'US' and 2 for 'non US' location. Hedges and Olkin's (1985) analogue to the analysis-of-variance for effect sizes is used to determine if a categorical characteristic of studies is related to effect sizes. This procedure involves sorting effect sizes into two groups based on location, and testing whether average effect size varies across two groups and whether the two groups are internally homogeneous (Hedges, 1994). Thus, correlations are partitioned into the two categories described above. Average effect sizes (r) are calculated using the number of studies (k) in each of the two categories; US and non-US.

As in ANOVA, total variation around the mean is partitioned into between-study and within-study variation. Similarly, the total heterogeneity (Q) is partitioned into between-group (Q_B) and within-group (Q_W) heterogeneity for effect sizes. A significant Q_B indicates between-group differences and a significant Q_W rejects the hypothesis of homogeneity within groups (Hedges, 1994).

The results in Table 3.6 indicate that significant variability is explained by the 'location' (Lipsey and Wilson, 2001; DeCoster, 2003) for all the relationships tested, except for the relationship of trust and job satisfaction, communication and organization commitment, and organization commitment and turnover. Location not only moderates all the other relationships tested, but the results also indicate that the average weighted effect sizes are larger for US-based studies than non-US studies. However, a significant Q_w indicates that 'location' alone does not account for all the variability between studies, thus necessitating the need for using additional moderators.

Table 3.6: Analogue to ANOVA results for moderator (location) analysis

Relationship	Non US (k)	US (k)	Qw (df)	QB (df)
Autonomy and Supervisor Support	0.271* (12)	0.403* (7)	217.731* (17)	45.141* (1)
Trust and Job Satisfaction	0.377* (5)	0.366* (5)	103.958* (8)	0.0962 (1)
Autonomy and job satisfaction	0.366* (16)	0.469* (10)	334.450* (24)	35.710* (1)
Supervisor support and job satisfaction	0.420* (15)	0.529* (6)	156.859* (19)	45.900* (1)
Trust and organization commitment	0.431* (6)	0.572* (6)	76.981* (10)	37.879* (1)
Communication and Organization commitment	0.338* (6)	0.361* (4)	41.476* (8)	0.583 (1)
Autonomy and Organization Commitment	0.268* (8)	0.436* (5)	92.307* (11)	54.388* (1)
Supervisor support and Organization Commitment	0.355* (14)	0.509* (6)	120.770* (18)	47.259* (1)
Job satisfaction and Organization Commitment	0.582* (33)	0.650* (22)	637.130* (53)	57.597* (1)
Perceived work overload and Job satisfaction	-0.177* (14)	-0.434* (10)	235.113* (22)	301.962* (1)
Perceived work overload and Organization Commitment	-0.217* (5)	-0.329* (10)	111.219* (13)	18.758* (1)
Organization Commitment and Turnover	-0.144* (3)	-0.178* (8)	9.458 (9)	1.001 (1)

* Significant at 0.05 level. ** Significant at 0.10 level.

Q_B – between studies heterogeneity, Q_w – within studies heterogeneity, df – degree of freedom.

US – effect size for US category, Non US – effect size for non US category, k – number of studies in each category.

Table 3.7: Results for continuous moderator (female percent) analysis

Relationships	K	β (SE)	Q_M (df)	Q_R (df)
Autonomy and Supervisor Support	14	0.0012* (0.0005)	4.4998* (1)	45.7162* (12)
Trust and Job Satisfaction	10	0.0032* (0.0008)	13.4299* (1)	90.6229* (8)
Autonomy and job satisfaction	23	-0.0014* (0.0003)	16.7954* (1)	158.0790* (21)
Supervisor support and job satisfaction	18	-0.0002 (0.0004)	0.3984 (1)	204.6620 (16)
Trust and organization commitment	13	0.0025* (0.0006)	17.1856* (1)	94.4983* (11)
Communication and Organization commitment	7	0.0013 (0.0015)	0.7988 (1)	35.1415 (5)
Autonomy and Organization Commitment	12	-0.0015* (0.0004)	13.4112* (1)	51.3554* (10)
Supervisor support and Organization Commitment	19	-0.0003 (0.0004)	0.5143 (1)	73.8290* (17)
Job satisfaction and Organization Commitment	58	0.0022* (0.0003)	54.6410* (1)	876.0930* (56)
Perceived work overload and Job satisfaction	22	-0.0021* (0.0005)	17.4210* (1)	513.3327* (20)
Perceived work overload and Organization Commitment	12	-0.0020* (0.0007)	8.8862* (1)	116.4113* (10)
Organization Commitment and Turnover	12	0.0006 (0.00052)	1.2633 (1)	9.3685 (10)

* Significant at 0.05 level, ** significant at 0.10 level. β - Regression coefficient, SE - standard errors, Q_M - between studies heterogeneity explained by the regression model, Q_R - residual heterogeneity not explained by the model.

Given the difficulty of finding enough female-only and male-only samples for the moderator test, the second moderator, gender, is coded as the percentage of female employees in the sample, which makes it a continuous moderator. Heterogeneity explained by the model (Q_M) and not explained by the model (Q_R) is also reported in Table 3.7. Significant Q_M indicates that part of the heterogeneity is explained by the moderator employed. However, a significant residual Q_R indicates the heterogeneity that is not explained by the moderator tested, thus indicating the presence of other moderators.

Regression results are presented in Table 3.7 for fixed effect analysis. The results of fixed effect analysis are based on weighted least square regression. Hedges' (1994, equation 19-24) correction is applied to standard error of regression coefficient.

$$\text{Correct standard error } (S_i) = SE_j \, / \, \sqrt{MS_{error}} \qquad (14)$$

Where, SE_j is the standard error of regression coefficient from WLS and MS_{error} is mean square error from ANOVA of WLS. Confidence intervals are recomputed then with corrected standard error for testing the null hypothesis that regression coefficient is zero. When the regression coefficient β is different from zero (indicated by * in Table 3.7), the female percentage in the study sample has a statistically significant relationship with effect sizes.

The results of fixed effect analysis indicate that gender does not moderate the relationships of supervisor support and job satisfaction, supervisor support and organization commitment, communication and organization commitment, and organization commitment and turnover (β non-significant). However, gender significantly moderates the remaining relationships tested for the presence of moderator.

Gender moderates the effect size estimates of autonomy and supervisor support (significant β). The positive value ($\beta= 0.0012$) indicates that the relationship of autonomy and supervisor support is stronger for women in the sample. A positive and significant β for the relationship of trust and job satisfaction ($\beta= 0.0032$), and trust and organization commitment ($\beta= 0.0025$) indicates that these relationships are

stronger for female employees. Thus, trust is an important antecedent for the positive work outcomes in a sample of female employees. However, the relationship of autonomy and job satisfaction (β= -0.0014), and autonomy and organization commitment (β= -0.0015) are less positive for women in the sample indicating autonomy is less desirable as a work environment characteristic among female employees. The negative slopes of perceived work overload and job satisfaction (β = -0.0021), and perceived work overload and organization commitment (β = -0.00196) indicate that these relationships are more negative for women.

As discussed earlier, moderator analysis could not be performed for all the relationships included in the meta-analysis. Therefore, it could not be established whether workplace environment characteristics are perceived differently among male and female employees. Thus, future research should focus on studying the impact of gender on the perceptions of work environment characteristics, and how these perceptions affect work outcomes.

Moderator analysis, by gender and location, has not completely explained the heterogeneity observed in the relationships of interest. Thus the presence of strong statistical heterogeneity necessitates the use of a pooled random effect correlation matrix for MASEM. The pooled random correlation matrix is given in Table 3.8. Table 3.8 presents the information on available independent samples and total sample size for each of the 55 relationships derived from 131 original studies comprising 151 independent samples to derive the pooled correlation matrix needed for MASEM. The table also informs of future research needs, as the numbers of studies vary considerably across the 55 cells.

Looking at workplace environment characteristics (trust, flexibility, autonomy, communication, participation, family support and supervisor support), Table 3.8 also informs that it is impossible to calculate pooled correlations for relationships between trust, flexibility and family support, flexibility and participation, autonomy and family support, communication, participation and family support, trust and stress; family support and stress, and between participation and family support because either no correlation coefficient is available, or only one correlation coefficient is available for these relationships. A large variation in the total sample

101

sizes is observed as well, from which pooled correlation coefficients are calculated. These samples range from 191 (for the correlation of communication and participation) to 8553 (for the correlation of autonomy and supervisor support).

Looking at the cells in Table 3.8 for the number of studies and total sample sizes for job attitude variables, work environment characteristics have been consistently studied for their impact on job attitudes. Similarly, job attitudes have been consistently used to predict turnover behaviour. The relationship of job satisfaction and organization commitment has also attracted a lot of attention (62 studies). However, a similar trend is not evident in turnover research (Table 3.8). Only three studies, with a total sample size of 2204, are available to calculate the pooled correlation for autonomy and turnover. But either no or fewer than two studies were available for the relationship of seven other workplace environment characteristics and actual turnover, thus making it impossible to compute pooled correlations for the correlation matrix. This situation further stresses the need for future research on the workplace environment characteristics and their impact on actual turnover behaviour.

Thus Table 3.8 not only indicates the gaps in the existing literature, but also highlights future research tasks. Also, none of the studies included in the meta-analysis have assessed all the eleven variables in the proposed model (Figure 2.2) necessitating the use of the pair-wise deletion strategy. The following section discusses the preparation of the pooled correlation matrix (Table 3.8) for hypothesis testing using SEM.

Table 3.8: Pooled correlation matrix

	1	2	3	4	5	6	7	8	9	10
1. Trust	1									
2. Flexibility	-	1								
3. Autonomy	0.3803* 1012 (3)	0.333* 864 (3)	1							
4. Communication	0.3088* 690 (4)	0.3654* 2043 (2)	0.495** 261 (2)	1						
5. Participation	.6109* 540 (2)	-	.4744* 341 (2)	0.35 191 (1)	1					
6. Family Support	-	.2381* 3802 (4)	.24 1938 (1)	-	-	1				
7. Supervisor Support	.671* 786 (3)	.1614* 3347 (4)	.335* 8553 (19)	.575* 890 (4)	.4926* 639 (3)	.3216* 4742 (4)	1			
8. Stress	-	-.12 2248 (1)	-.239** 4675 (8)	-.2293* 569 (3)	-.2071* 745 (3)	-	-.246* 4939 (8)	1		
9. Job Satisfaction	.3838* 2527 (10)	.1935* 32713 (6)	.423* 11269 (26)	.3995* 1490 (6)	.3851* 1256 (6)	.2186* 4258 (5)	.437* 10166 (22)	-.311* 15212 (25)	1	
10. Organization Commitment	.4816* 4678 (14)	.2558* 6763 (6)	.331* 7749 (13)	.3936* 4805 (13)	.4281* 1740 (7)	.2090* 2177 (4)	.404* 8315 (22)	-.277* 5697 (16)	.593* 26070 (62)	1
11. Turnover	-	-.08 3570 (1)	-.0815* 2204 (3)	-	-	-	-.11 493 (1)	.22 221 (1)	-.1759* 5178 (9)	-.1934* 12573 (14)

Note: * significant at 5%, ** significant at 10%, Italics represent no pooled correlation for only one study reported relationship. Random effect correlation (upper row) and total sample size (mid row) and number of studies (lower row) for each relationship.

3.4 Structural equation modeling analysis

The third objective of this review is to test if the relationship of perceived work environment characteristics and turnover is mediated by job attitudes (Figure 2.2). Meta-analysis has revealed that perceived work environment characteristics are more consistently related to job attitudes, where job attitudes are related to turnover behaviour. However, it does not confirm that the relationship of work environment characteristics and turnover is mediated by job attitudes. To achieve this objective, structural equation modeling analysis has to be used (Viswesvaran and One, 1995).

In the presence of missing values, the above correlation matrix cannot be analyzed using SEM. Viswesvaran and One (1995) proposed some strategies for this problem: (1) subject matter experts can be used to estimate the missing correlation, if no study reported them, (2) data can be collected with a sufficiently large sample size, to obtain correlations not reported in the literature, (3) the average correlation in the empty cells can be used, (4) patterns can be looked for and values inserted in the missing cells of matrix, and (5) the test of the theory can be modified to include only the constructs for which a full matrix of estimated correlations is available in the literature.

Following the advice of Viswesvaran and One (1995), two variables were dropped, including trust and family support benefits, from the proposed model to modify the test of the theory. Also, the correlation between flexibility and participation was computed using data from the Workplace Employment Relations Survey (WERS) 2004 and substituted in the pooled correlation matrix (Table 3.9). Correlations between communication and turnover, and participation and turnover were substituted from an earlier meta-analysis by Griffeth et al (2000) (e.g. Bamberg and Moser, 2007). The resulting correlation matrix (Table 3.9) is subjected to SEM for testing the hypothesized mediating role of job attitude variables in the perceived workplace environment characteristics-turnover relationship. Following Viswesvaran and One (1995), the harmonic mean of sample size (N= 1206) across the correlation matrix (Table 3.9) is used as the sample size for SEM analysis.

Table 3.9: Correlation matrix subjected to SEM analysis

| Relationships	1	2	3	4	5'	6	7	8
1. Flexibility	1							
2. Autonomy	0.333* 864 (3)	1						
3. Communication	0.3654* 2043 (2)	0.495** 261 (2)	1					
4. Participation	0.288* 7368 (1)	.4744* 341 (2)	0.35 191 (1)	1				
5. Supervisor Support	.1614* 3347 (4)	.335* 8553 (19)	.575* 890 (4)	.4926* 639 (3)	1			
6. Stress	-.12 2248 (1)	-.239** 4675 (8)	-.2293* 569 (3)	-.2071* 745 (3)	-.246* 4939 (8)	1		
7. Job Satisfaction	.1935* 32713 (6)	.423* 11269 (26)	.3995* 1490 (6)	.3851* 1256 (6)	.437* 10166 (22)	-.311* 15212 (25)	1	
8. Organization Commitment	.2558* 6763 (6)	.331* 7749 (13)	.3936* 4805 (13)	.4281* 1740 (7)	.404* 8315 (22)	-.277* 5697 (16)	.593* 26070 (62)	1
9. Turnover	-.08 3570 (1)	-.0815* 2204 (3)	-0.11* 5185 (8)	-0.08* 4825 (10)	-.11 493 (1)	.22 221 (1)	-.1759* 5178 (9)	-.1934* 12573 (14)

Note: * significant at 5%, ** significant at 10%,
Italics represent only one study for the reported relationship.
N (harmonic mean of all samples) = 1206.

105

Path analysis on the resulting correlation matrix (Table 3.9) is performed using AMOS version 6.0. The Chi-square (χ^2), Bentler's (1990) comparative fit index (CFI), and goodness of fit index (GFI) are used as fit indices in the present study. A cut-off point of 0.90 or above, for both CFI and GFI, indicates the goodness of the fitted model.

SEM analysis is performed in two steps. To examine the effects of perceived work environment characteristics on job attitudes and turnover, a measurement model is first tested. The objective is to test whether the model can describe the relationship of work environment characteristics with other constructs such as job attitudes and turnover. To specify the model, each of the five work environment characteristics (flexibility, autonomy, communication, participation and supervisor support) is allowed to load onto a single latent construct, namely 'work environment perceptions'. 'Work environment perceptions' is then allowed to correlate with each of the other two constructs (job attitudes and turnover) in the model. Job attitude is also specified as a latent construct. Job satisfaction and organization commitment are allowed to load onto a single construct - job attitude. Here 'turnover' is specified as a single item construct (Figure 3.2).

Table 3.10 shows that the five factor 'work environment perceptions' fits the data adequately, as indicated by both the CFI (0.91) and GFI (0.946) index. Path coefficients (Figure 3.2) relating each of the five work environment characteristics to 'work environment perceptions' are statistically significant and range from 0.57 (for flexibility) to 0.96 (for supervisor support). Thus, 'work environment perceptions' explains a reasonable proportion of covariance among five work environment perceptions. All three constructs (work environment perceptions, job attitude and turnover) are significantly correlated with each other in the expected direction, indicating that 'work environment perceptions' may be used to model the effects of work environment characteristics on job attitude and turnover. Thus the modified model with five work environment characteristics is tested. The model is specified in Figure 3.3, and the results of the hypotheses are discussed in the next section.

Figure 3.2: Measurement model for WEP, Job Attitude and Turnover constructs
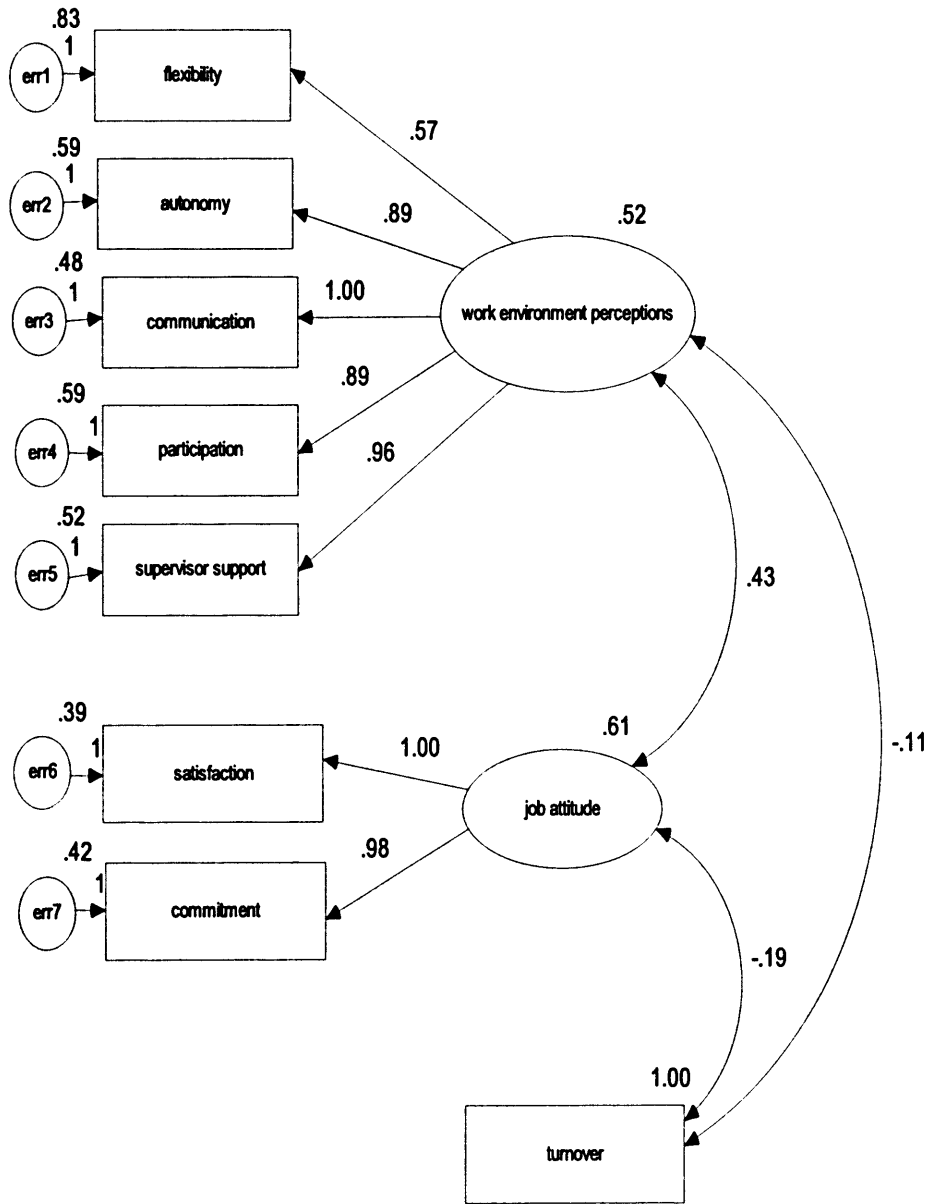
Note: All estimates are statistically significant.

Figure 3.3: Structural model linking WEP, Job Attitude, and Turnover
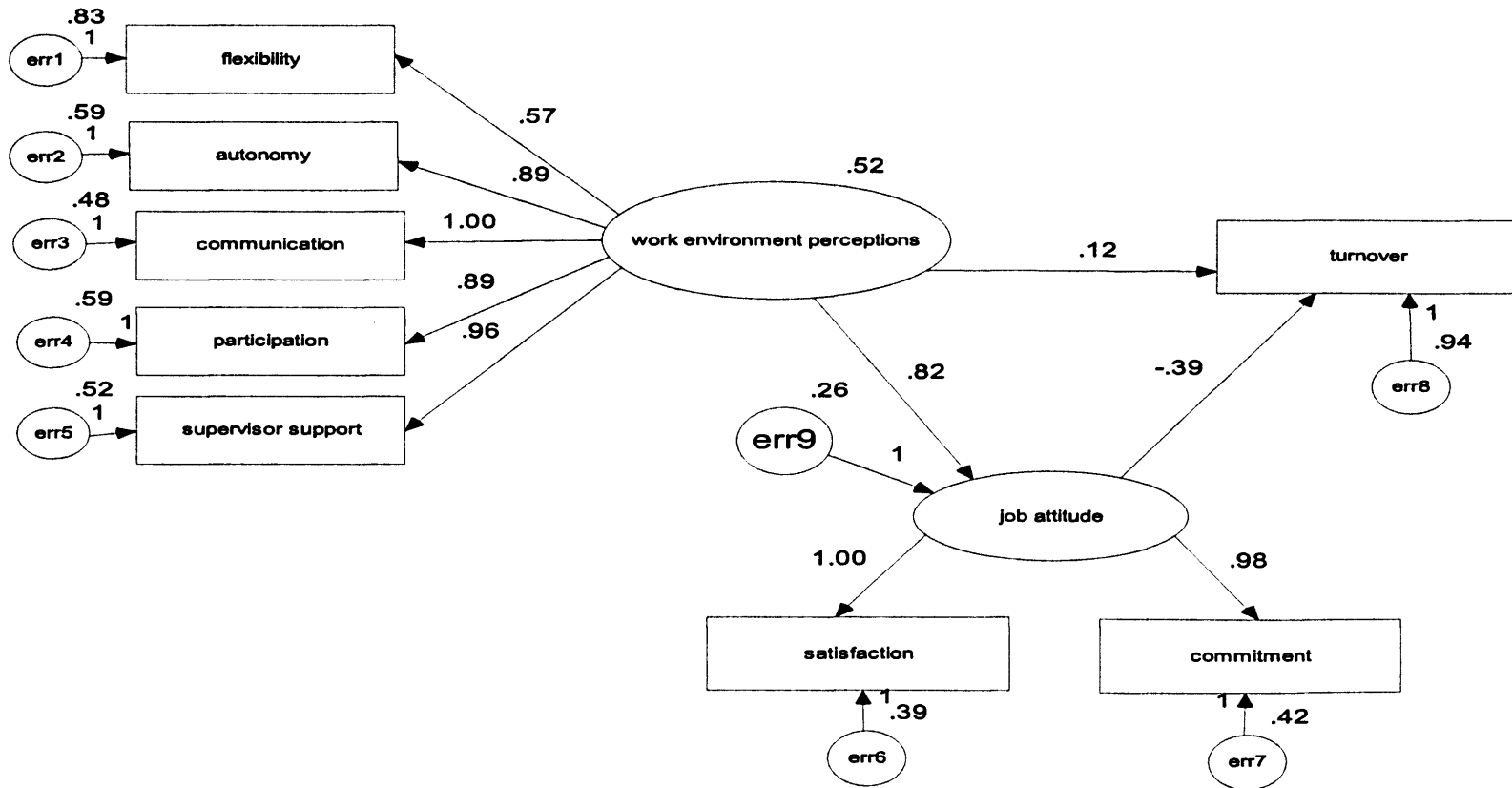
3.4.1 Testing the proposed mediating relationship

In order to determine whether the relationship between 'work environment perceptions' and turnover is mediated by job attitudes, three alternative models are derived from Figure 2.2 to test for mediation. The first model, model 1, hypothesizes a direct relationship between 'work environment perceptions' and turnover. Model 1 is derived by eliminating path (b) from Figure 2.2 for a direct relationship. The second model, model 2, hypothesizes that 'work environment perceptions' has a positive impact on job attitudes; and job attitudes in turn reduce turnover. Model 2 is derived by deleting path (a) from Figure 2.2 and retaining only path (b). The third model, Model 3, analyses the full model in Figure 2.2 i.e. both path (a) and (b) are retained in the model. These three models estimate three different hypotheses.

> **Hypothesis 1:** 'work environment perceptions' has a negative influence on turnover (model 1).
>
> **Hypothesis 2:** 'work environment perceptions' has a positive influence on job attitudes and, in turn, job attitudes have a negative influence on turnover (model 2).
>
> **Hypothesis 3:** Job attitudes mediate the 'work environment perceptions'-turnover relationship (model 3).

The full structural model is given in Figure 3.3. Estimates of path coefficients and model fit indices for three models are presented in Table 3.10. Hypothesis 1 is supported (model 1, Table 3.10), since 'work environment perceptions' has a significant negative impact on turnover. Hypothesis 2 is also supported, as there is a significant positive relationship between 'work environment perceptions' and job attitude and a significant negative relationship between job attitudes and turnover (model 2, Table 3.10). For estimating hypothesis 3, both hypotheses 1 and 2 are estimated together (model 3, Table 3.10). The results show that the path coefficient for the direct effect of 'work environment perceptions' on turnover becomes insignificant when job attitudes are added as a mediator. However, 'work environment perceptions' has a significant positive relation with job attitudes and, in turn, job attitudes have a significant negative relation with turnover. Thus,

hypothesis 3 is supported. It is, thus, concluded that job attitudes fully mediate the perceived work environment characteristics-turnover relationship.

Table 3.10: Estimates of Structural Models

Hypothesized relationships	Model 1 Estimate	CR	Model 2 Estimate	CR	Model 3 Estimate	CR
WEP—Turnover	-0.193	-4.493*	---	---	0.119	1.329
WEP— Job Attitude	---	---	0.818	17.957*	0.820	17.998*
Job Attitude ——Turnover	---	---	-0.292	-7.040*	-0.391	-4.563*
Flexibility—WEP	0.566	12.974*	0.574	12.847*	0.573	12.835*
Autonomy—WEP	0.847	18.775*	0.887	19.380*	0.888	19.380*
Communication—WEP	1.00	---	1.000	---	1.000	---
Participation—WEP	0.809	18.072*	0.887	19.370*	0.889	19.383*
Supervisor support—WEP	0.904	19.683*	0.956	20.641*	0.956	20.630*
Commitment—Job Attitude	---	---	0.973	20.316*	0.975	20.485*
Satisfaction— Job Attitude	---	---	1.000	---	1.000	---
χ^2 (df)	262.842* (9)		323.248* (19)		321.441* (18)	
CFI	0.843		0.90		0.90	
GFI	0.942		0.946		0.946	

* Significant at 5%

Of the three models fitted to the data, model 3 appears to fit the data most adequately. Table 3.10 (model 1) shows that, though χ^2 value is a minimum, reductions in CFI and GFI are also observed, indicating that the model has not achieved a good fit. Fit indices have improved for model 2 (Table 3.10), depicting an indirect relationship between 'work environment perceptions' and turnover through job attitudes. Fit indices have not changed when both direct and indirect effects are analyzed simultaneously (model 3); however, the χ^2 value reduces slightly.

3.5 Conclusion

Although there have been two large scale quantitative reviews of the turnover literature (e.g. Cotton and Tuttle, 1986; Griffeth et al, 2000) assessing the direct

antecedent-turnover relationship, no study has attempted to summarize the findings regarding the mediating role of job attitudes in the relationship of work environment characteristics and actual turnover. Meta-analytic techniques are used to summarize findings for the relationship between perceived work environment characteristics, job attitudes, and actual turnover behaviour. In addition, structural equation modeling is used to test the model (Figure 2.2) describing the direct and indirect relationships between work environment characteristics, job attitudes and turnover. For the discussion of results, first a brief review of the findings of the Meta and SEM analyses are presented.

Where the present meta-analysis has shown consistent findings with some earlier meta-analyses, it has generated some new findings as well. Consistent with the earlier findings, job attitudes (job satisfaction and organization commitment) are immediate predictors of turnover behaviour. In general, the results for the relationship of job satisfaction and organization commitment with turnover are consistent with earlier meta-analysis (e.g. Griffeth et al, 2000).

Of the seven work environment characteristics considered in the present meta-analysis, autonomy, participation, communication and supervisor support were included in earlier meta-analyses of job satisfaction (e.g. Brown and Peterson, 1993) and organization commitment (e.g. Mathieu and Zajac, 1990) literature. The present meta-analysis has not only improved those findings by including a larger sample of studies, but has also found that trust, flexibility and family care benefits are consistent antecedents of work outcomes. Thus these variables should be included in the future studies of work outcome variables. A detailed comparison of the current findings and earlier meta-analyses is provided in Table 3.12.

The results for perceived work environment characteristics are different from the results reported in earlier meta-analyses on organization commitment (e.g. Mathieu and Zajac, 1990) and job satisfaction (e.g. Brown and Peterson, 1993). This difference in findings may be because we were able to include studies published after Mathieu and Zajac (1990) and Brown and Peterson (1993). Also, the meta-analysis on the antecedents, correlates and consequences of job satisfaction was limited to only sales force population (e.g. Brown and Peterson, 1993).

Perceived work environment characteristics related to managerial supportiveness such as trust, participation, communication and supervisor support have the strongest relationships with job attitudes. Though 'trust' was not included in earlier meta-analyses, in this study it was found to have the strongest inter-relationships with 'employee participation', 'supervisor support' and 'communication'. This finding suggests that these four aspects can be used to measure overall managerial supportiveness. The findings, therefore, suggest that a work environment that is characterized by mutual trust between employees and their superiors, employee participation in decision-making, communication of company-related information to employees, and strong support by superiors will foster positive attitudes among employees.

Perceived work environment characteristics related to one's job such as autonomy and perceived work overload have a moderate relationship with job attitudes. The findings, therefore, suggest that a work environment that places fewer work demands on employees and gives them more control over their work will foster positive attitudes among employees.

This meta-analysis is the first attempt to include family-friendly characteristics of the work environment as an antecedent of job attitudes and turnover behaviour. Variables relating to the family-friendliness of the work environment (flexibility and family care benefits) have demonstrated moderate positive relationships with both job satisfaction and organization commitment. However, there are currently not enough studies assessing the relationship of a perceived family-friendly work environment with turnover. Thus, the impact of perceived family supportiveness of workplaces on employees' behaviour warrants further research.

Also, the results of the meta-analysis clearly indicate that the characteristics of a supportive work environment have stronger and more reliable relationships with employee job attitudes (job satisfaction and organization commitment) than turnover. All the work environment variables are positively related with job attitudes and, on the other hand, job attitudes have a negative relationship with turnover.

Table 3.12: Comparison of findings with earlier published Meta-Analysis

Relationship	Organization commitment				Job satisfaction				Turnover			
	Mathieu and Zajac (1990)		Present study		Brown and Peterson (1993)		Present study		Griffeth et al (2000)		Present study	
	k	r	k	r	k	r	k	r	k	r	k	r
Autonomy	3	0.083	13	0.331	3	0.27	26	0.423	-	-	3	-0.082
Communication	4	0.454	13	0.394	-	-	6	0.399	10	-0.10	-	-
Participation	3	0.386	7	0.428	3	0.43	6	0.385	8	-0.11	-	-
Supervisor support/ consideration	12	0.335	22	0.404	4	0.47	22	0.437			1	-0.11
Trust	-	-	14	0.482	-	-	10	0.384	-	-	-	-
Flexibility	-	-	6	0.256	-	-	6	0.194			1	-0.08
Family care benefits	-	-	4	0.209	-	-	5	0.219	-	-	-	-
Organization commitment	-	-	-	-	11	0.60	62	0.593	67	-0.22	14	-0.193
Job satisfaction	43	0.533	62	0.593	-	-	-	-	67	-0.17	9	-0.176
Turnover	26	-0.277	14	-0.193	7	-0.26	9	-0.176				

This pattern of correlations suggests that the effect of work environment perceptions on turnover may be mediated by job attitudes. The results of the structural equation modelling analysis supported the hypothesis that the effects of perceived work environment characteristics on turnover are mediated by employee effective job attitudes. The latent variable 'work environment perceptions' can account for the effects of work environment characteristics on both attitudinal and behavioural outcomes, whereas the latent variable on job attitudes can account for the effects of attitudinal variables on behavioural variables. In this study, the latent variable 'work environment perceptions' has a strong positive association with job attitudes and job attitudes, which in turn, have a moderate negative association with turnover.

Overall, this meta-analysis is the first step towards summarizing the empirical literature related to perceived work environment characteristics and their impact on job attitudes and turnover behaviour. It indicates several consistent relationships between perceived work environment characteristics, job attitudes and turnover. It also highlights the areas requiring further research.

Firstly, the relationship of family-friendly characteristics of work environment (flexibility and family care benefits) and turnover is not clear. Meta-analysis has revealed that family-friendly characteristics of work environment are positively related to job attitudes and job attitudes are, in turn, related to turnover. But in the absence of correlations between the family-friendly characteristics of the work environment and turnover, these direct and indirect paths could not be tested. Thus further study of these relationships is necessary to draw firm conclusions.

Secondly, future research should consider including variables for which we found either a small sample of studies or no studies at all. Interestingly, the number of studies on work environment characteristics and their impact on job satisfaction and organization commitment has increased. However, there is a dearth of research on the impact of these characteristics on turnover behaviour. This may be partly due to the difficulty associated with measuring actual turnover behaviour.

Concluding remarks

Based on social exchange theory, the direct effects of the perceived work environment characteristics on employees' job attitudes and voluntary turnover have been examined using a meta-analysis. In addition, mediating mechanisms (i.e. the indirect effects through job satisfaction and organization commitment) that may explain these relationships have also been tested using structural equation modelling. The results of MASEM showed that the effects of perceived work environment characteristics on turnover are mediated by job attitudes (job satisfaction and organization commitment).

It was argued in Chapter 2 that an integration of social exchange theory and JDCS theory may be used to explain the turnover process. These theories together create a comprehensive framework that describes the context (i.e. work environments) and its influence on employees general wellbeing, job related attitudes, and turnover. The research model based on these two theories is presented in the next chapter.

Chapter 4

The Research Model

4.1 Introduction

This chapter presents the theoretical base supporting this research. These theories provide a general framework for developing and testing a workplace level model of voluntary turnover. There are very few studies that have examined turnover in British workplaces from a socio-psychological perspective. This study, therefore, is an attempt to fill in the gap in the existing literature by examining turnover in a different context and also to investigate interrelationships among some of the constructs that have been overlooked by previous studies. To achieve these objectives, a conceptual model has been developed to explain the turnover process. The proposed model of voluntary turnover is based on demand-control-support theory and social exchange theory. The model explains the turnover process by postulating four direct determinants (work demands, autonomy, managerial support and family support) and three mediators (wellbeing, job satisfaction, and organization commitment). Employees' gender and sector of employment are also proposed as moderators. From this model, a number of research hypotheses have been identified in order to test the relationships specified among the variables of interest.

The chapter consists of three sections. The first section presents the theoretical perspectives employed in the current study. The second section presents and explains the research model developed for the current study, while the third section presents the research hypotheses so formulated to answer the research questions.

4.2 Theoretical foundation of proposed model

Theories explaining turnover behaviour are primarily rooted in the disciplines of sociology, psychology and economics. Sociological theories stress the importance of

116

work-related factors in explaining turnover behaviour more than individual factors (MorBarak et al, 2001). Contributing sociological theories include social comparison theory (Geurts et al. 1998) and social exchange theory (Miller 1996). Psychological explanations of turnover behaviour rest on the individual perceptions of their work environments which lead to behavioural outcomes. Various contributing theories are stress theories (Wright and Corpanzano 1998), job strain model (Karasek, 1979; Karasek and Theorell, 1990), person-environment fit theory (Jansen and Kristof-Brown, 2006), and organizational turnover theory (Hom et al, 1992). Economic explanations of turnover behaviour posit that employees respond to various economic (and/or organizational) conditions with rational actions. The contributing economic theories are human capital theory (Becker, 1993) and the utility maximization theory (Flinn, 1986). Though all of the three disciplines have strong proponents in the turnover literature, researchers have widely recognized the importance of multi-disciplinary theories to explain the turnover process (Mor Barak et al, 2001). While most of the research on turnover behaviour in British workplaces is based on economic theories (Jones et al, 2009; Brown et al, 2009; Martin, 2003; Wilson et al, 1990), little attention has been paid to the underlying psychological or sociological processes to explain turnover. The present study draws on this gap by combining sociological and psychological theories to explain turnover in British workplaces.

In this study, wellbeing (low anxiety), job satisfaction, organization commitment and turnover are selected as focal dependent variables. The consideration of context is essential to understanding employee wellbeing, attitudes and behaviours. Context includes work environment and job characteristics, which are central to traditional models of work motivation (Perry, 2000). The model defining the relationships between work context, employee wellbeing, attitudes, and behaviour is derived mainly from two theoretical perspectives: job demand-control-support (JDCS) theory, and social exchange theory.

Job demand-control-support (JDCS) theory (Karasek and Theorell, 1990) predicts that the work environment and job characteristics predict employees' general and job-related

117

wellbeing (Figure 3.1). Social exchange theory (Blau, 1964) explains the relationship between work context, job attitudes and turnover. In the context of exchange relationships, employees may reciprocate their employer's favourable treatment by enhancing their positive attitudes, behaviours, or both (Figure 2.2). Earlier turnover theories, based on a social exchange framework, posit job attitudes as antecedents of turnover (March and Simon, 1958; Price, 1977; Price and Mueller, 1981; 1986). Integrating these theories together provides a framework for analyzing employee turnover in British workplaces (Figure 4.1). The proposed framework (Figure 4.1) makes a contribution by adding another construct to JDCS theory to improve the explanatory power of the present framework - the family support. The measure of 'managerial support' has also been refined.

4.3 The research model

This research takes socio-psychological approach to explain turnover in British workplaces. The two theories discussed earlier (social exchange and JDCS) along with earlier turnover theories have been used to propose a framework for the present research. The proposed framework is developed to investigate the factors that influence employees' decision to leave a workplace voluntarily. The model proposed here represents the inter-relationships of various variables and constructs that exist independently of the researcher. In order to test the model, hypotheses are derived to see if the predicted behaviour (turnover) evolves from the stated conditions of work environment, employees' attitudes and perceived wellbeing. The proposed model is given in Figure 4.1.

The variables used in the model have been derived from theoretical and empirical research examining turnover. Some of the aspects, however, are quiet unique. First, social support is studied with respect to work and family supportiveness as they constitute two important domains of an individuals' life. Secondly, family support has been recognized as an important antecedent of employees' perceived wellbeing.
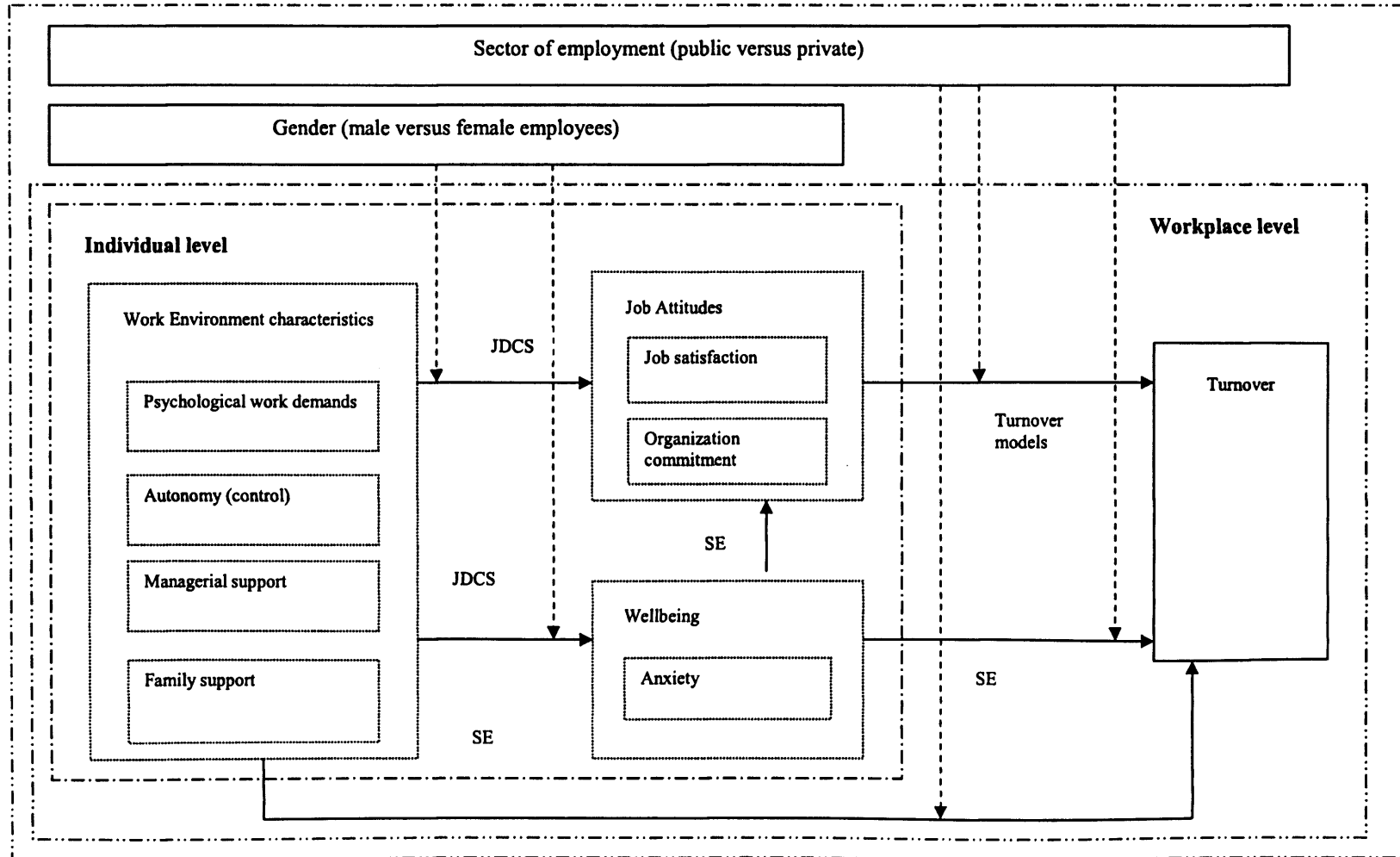
Figure 4.1: Proposed model for the current study

Thirdly, the impact of employees' perceived wellbeing on their attitudes and behaviour is recognized. Fourthly, the mediating role of job attitudes (unlike earlier turnover models) and perceived wellbeing in the relationship of work environment characteristics and turnover is examined. Furthermore, employees' perceptions of their work environments, wellbeing, and attitudes are analysed both at the individual and at workplace level. Finally, the impact of sector of employment and employee gender on specific pathways in the withdrawal process is recognized. The assumed relationships between the variables are formulated more clearly by the hypotheses given in the next section. The relationships of the constructs (Figure 4.1) and proposed hypotheses are explained in three parts. The first part explains the direct paths in the model, the second part explains the indirect (mediating) paths, and the third part explains the moderators of the paths.

4.4 Research hypotheses for direct paths

Estimating the environment of a workplace is a difficult task, but it is crucial for developing a better understanding of organizations. Individuals' perceptions about their work environments include four key aspects: Psychological work demands, job control (autonomy), managerial support, and family support. Based on the proposed framework (Figure 4.1), this section presents a set of hypotheses for all the direct relationships derived from the earlier literature.

4.4.1 Work environment characteristics, job attitudes and behaviour

Social exchange theory explains the impact of the perceived work environment characteristics on employee attitudes and behaviour. Psychological work demands (i.e. perceived work overload) are identified as sources of stress (Perrons, 2001; Voydanoff, 2004). Work overload refers to the amount of work to complete which is either too difficult, or of which there is too much to carry out in the available time (Warr and Wall, 1975; Cooper et al, 2001). The UK has the highest working hours in the European Union and average usual working hours have been increasing over the years (Hogarth et al, 2001) for households. Many employers frequently expect employees and professionals to work longer hours. Considerable number of

employees, in order to keep their job or for career development, perceive these demands as necessary, which increases their work-family conflict (Higgins et al, 1992). The stress associated with role overload reduces interpersonal availability and limits effective participation in the family role (Voydanoff, 2004). The long hours culture in British workplaces poses problems for individuals with dependant care responsibilities, where these individuals are often forced to choose between jobs with career development opportunities and those that can be combined with caring activities (Perrons, 2001). Consistent with the social exchange perspective, employees who perceive higher work demands will feel neglected by their respective organizations and are likely to reciprocate with decreased job satisfaction, organization commitment and increased turnover.

Hang-Yue et al, (2005) examined the effect of stressors on turnover intentions. Using data from 877 protestant clergy in Hong Kong, the findings revealed that role stressors were significantly positively related with turnover intentions and significantly negatively related with job satisfaction. The earlier literature also suggests that stress due to work overload is inversely related to job satisfaction (Babin and Boles, 1998; Kinicki et al, 2002) and organization commitment (Lyne et al, 2000; Mathieu and Zajac, 1990). The meta-analysis results in chapter 3 also exhibited a negative relationship between psychological work demands (work overload) and both job attitudes (job satisfaction, organization commitment) and a positive relationship between psychological work demands and turnover. Therefore, I hypothesize:

Hypothesis 4.1: high job demands will be negatively associated with job
attitudes.
Hypothesis 4.1a: high job demands will result in lower job satisfaction.
Hypothesis 4.1b: high job demands will result in lower organization
commitment.
Hypothesis 4.2: high job demands will result in higher turnover.

Job control or autonomy has long been considered as a resource that helps employees to effectively manage work demands (Karasek, 1979). Job control or autonomy is defined as 'The degree to which employees experience freedom,

independence and discretional decision making in terms of scheduling their work, select the equipment they will use, and deciding on the procedure to follow' (Weber and Weber, 2001). The belief is that autonomy decreases turnover by its positive impact on job satisfaction and organization commitment (Price, 2001). It is reasonable to expect that employees who have discretion in their jobs would consider autonomy as a support, signalling the organization's intention to establish a social exchange relationship with its employees. Thus, based on the social exchange perspective, job autonomy would lead to positive reactions from employees resulting in increased job satisfaction, organization commitment and a reduced turnover rate. Meta-analytic results have also exhibited a significant positive relationship between autonomy and both the job attitudes, and a significant negative relationship between autonomy and turnover. Thus, it is hypothesized that:

Hypothesis 4.3: Autonomy will have a positive association with job attitudes

Hypothesis 4.3a Autonomy will have a positive association with job
satisfaction.

Hypothesis 4.3b Autonomy will have a positive association with organization
commitment.

Hypothesis 4.4: Autonomy will have a negative association with turnover.

Social exchange theory can explain the relationship between perceived work-and-family supportiveness and positive job attitudes (Eisenberger et al, 1986; 1997; 2001; 2004). The perceived organizational support theory (e.g., Rhoades & Eisenberger, 2002), which is based on the social exchange theory, argues that employees who feel that the organization is involved in a positive social exchange will, in turn, have more positive attitudes toward it, such as increased job satisfaction and commitment (e.g., Judge et al, 1994). The availability of support by workplaces has been found to increase job satisfaction (Scandura and Lankau, 1997; Bond et al, 2002) and organization commitment (Grover and Crooker, 1995; Scandura and Lankau, 1997; Bond et al, 2002). Grover and Crooker (1995) found that employees who had access to family support benefits showed significantly higher organization commitment and lower quit intentions than employees who did not. Similar findings have been reported by Scandura and Lankau (1997) in a sample of women. They found that women perceiving their organizations were supportive of their family, showed

122

higher levels of organization commitment and job satisfaction than women who did not (Scandura and Lankau, 1997). Meta-analysis results have also supported a significant positive association between managerial and family support measures and both job satisfaction and organization commitment. Thus, I derive the following hypotheses:

Hypothesis 4.5: perceived high social support will be positively associated with job satisfaction.

Hypothesis 4.5a: perceived high managerial support will be positively associated with job satisfaction.

Hypothesis 4.5b: perceived lack of family support will be negatively associated with job satisfaction.

Hypothesis 4.6: perceived high social support will be positively associated with organization commitment.

Hypothesis 4.6a: perceived high managerial support will be positively associated with organization commitment.

Hypothesis 4.6b: perceived lack of family support will be negatively associated with organization commitment.

The relationship between perceived work and family support and turnover can be explained with the help of social exchange theory. According to social exchange theory, organizational support (work and family) is perceived as the organization's commitment to the employee, which in turn creates an obligation within employees to reciprocate with increased commitment towards the employing organization (Eisenberger et al, 1990; Rhoades & Eisenberger, 2002). On the other hand, lack of support might make employees feel that organizational resources are inadequate to deal with work and family issues, leading to possible negative consequences on their decision to stay with the organization (Eisenberger et al, 2001; Dolcos, 2006). Friedlander and Greenberg (1971), examining a sample of 478 hard-core unemployed workers, found that perceived supportiveness of work environments by these unemployed workers predicted their work effectiveness and ability to retain jobs. Previous studies have found a negative relationship between supervisor/managerial support and turnover (e.g. Eisenberger et al, 2002; Griffith et al, 2000). Vandenberg et al, (1999), examining a sample of 3570 employees, found that flexibility was

negatively correlated with turnover rates at organizational level. Though, the impact of employees' perceived family supportiveness on actual turnover has not been empirically tested, it is assumed that these policies can reduce turnover since family support policies can influence whether working mothers remain at their jobs after childbirth (Aryee et al, 1998; Scandura and Lankau, 1997). Thus, I hypothesize:

Hypothesis 4.7: perceived social support will be negatively associated with the turnover.

Hypothesis 4.7a: perceived lack of family support will be positively associated with the turnover.

Hypothesis 4.7b: perceived high managerial support will be negatively associated with the turnover.

4.4.2 Work environment characteristics and wellbeing

Work environment characteristics and their relationship with general wellbeing have been explained by JDCS theory. JDCS studies have examined the impact of demand-control and support on both general (anxiety and depression) and job-related (job satisfaction) wellbeing. The studies have generally supported that psychological work demands have a positive impact on anxiety/psychological distress while job control and support have a negative influence on anxiety/psychological distress (Karasek et al, 1982; Landsbergis et al, 1992; Fletcher and Jones, 1993; Stansfeld et al, 1995; Cahill and Landsbergis, 1996; Roxburgh, 1997).

The WERS linked surveys have allowed study of general (anxiety) or job-related wellbeing (job satisfaction) using nationally representative surveys. Gazioglu and Tansel's (2004) study has been the most comprehensive analysis of the WERS 98 data on the determinants of job satisfaction (job-related employee wellbeing). Gazioglu and Tansel (2004) have included three sets of work environment variables in their study. The first set included individual autonomy (job control) related to range of tasks and pace of work; the second set of variables relate to the availability of a number of flexible work environments such as flexi-time, job sharing, parental leave

124

and working from home; and the third set of variables include the employees' relationship with their superiors.

Gazioglu and Tansel (2004) found that autonomy was significantly and positively related to four measures of job satisfaction. The coefficient estimates on all flexible work environment variables were statistically insignificant except for the availability of the flexible working hours, which was found to reduce various measures of job satisfaction. Both sets of work environment variables, however, were statistically significant jointly. The quality of employee relations with their managers was assessed by including several sets of variables namely: employee consultation (views on staffing issues, pay issues, and health and safety at work), discussion on issues with managers (job progress, promotion, training needs and pay), and fair treatment by managers. An important point to be noted here is that the variable 'employee relations with the managers' in Gazioglu and Tansel's (2004) was called managerial support (as in JDCS model) in subsequent research (e.g. Wood, 2008) and is measured using similar items in WERS 2004. The coefficient estimates for employee consultation were all positive and statistically significant in the four job satisfaction regressions. The coefficient estimates for discussions with managers were all statistically insignificant. Furthermore, in these regressions, the coefficient estimates on the variables relating to the managers treating employees fairly are all positive and statistically significant. They concluded that the weak employee-manager relationships may be a major source of observed lower levels of job satisfaction in larger establishments.

Despite the omission of work demands, the Gazioglu and Tansel (2004) study is important as it has focused on flexible work arrangements and managerial support (worker-manager relationship) as a measure of social support for workers. A more comprehensive study using the JDCS model and examining wellbeing was carried out by Wood (2008). Additional variables included in the employee survey in 2004 enabled Wood (2008) to go beyond Gazioglu and Tansel's (2004) analysis of the impact of job control, flexibility, and managerial support on wellbeing in two main ways. First, an additional psychology-based measure of well-being (anxiety-contentment) is included along with job satisfaction. Secondly, the measures of psychological work demand and social support have been consistent with the JDCS

model. Social support in this study was measured using two variables: 'perceived managerial support' and 'employee voice'.

The results showed a strong association between job demands-control-support and both anxiety–contentment and job satisfaction. Having a union voice was not significant. The results conform to the Karasek (1979) model that predicts that the highest levels of strain are in jobs with high demands and low controls. In addition, it supported the Karasek and Theorell (1990) hypothesis that wellbeing (anxiety–contentment) is higher when managers support, inform and consult with employees. There are no studies examining the effects of family support on employees' perceived wellbeing. Since family support enables employees to balance their work and family responsibilities more effectively, they may be expected to increase employees' perceived wellbeing and desire to stay with the organization. Thus, following the additive hypothesis of the JDCS model, it is hypothesized that:

> Hypothesis 4.8: high job demands will lead to high anxiety.
>
> Hypothesis 4.9: high autonomy will result in low anxiety.
>
> Hypothesis 4.10: high managerial support will result in low anxiety.
>
> Hypothesis 4.11: lack of family support will be positively associated with anxiety.

4.4.3 Wellbeing, job attitudes and turnover

Anxiety has been studied as an affective reaction to a stressful situation in the job stress literature. Job stress theory suggests that intrinsic job characteristics, such as role overload and role conflict, lead to psychological strain (Cooper et al, 2001; Jex 1998) resulting in greater anxiety, tension, and job dissatisfaction (Rizzo et al, 1970). The relationship of workplace anxiety and employees' affective attitudes and behaviours is based on social exchange theory. Just as employees give positive value to social support and respond to it with positive attitudes and behaviours, they give negative value to anxiety or stress at work and respond to these situations with negative attitudes and behaviours.

Numerous studies have demonstrated a consistent relationship between job attitudes and turnover (Cotton and Tuttle, 1986; Griffith et al, 2000). However, little attention has been paid to the relationship between job-related anxiety and actual turnover. Earlier research has argued that individuals who experience higher levels of job-related anxiety are more likely to withdraw from the organization (Parasuraman, 1982; Keller, 1984). There is, however, little empirical evidence supporting this argument. Hochwarter et al (1999) have found a significant positive association between job tension/anxiety and turnover intentions. In another study, Batlis (1980) found that anxiety was positively associated with propensity to leave (desire to quit) and negatively associated with job satisfaction. Fox and Spector (1999) found that anxiety was negatively related with job satisfaction and organization commitment. Thus, I hypothesize that:

Hypothesis 4.12: anxiety is negatively associated with job satisfaction.

Hypothesis 4.13: anxiety is negatively associated with organization commitment.

Hypothesis 4.14: anxiety is positively associated with turnover.

4.4.4 Job attitudes and turnover

A great deal of research has been conducted that has linked job attitudes with turnover behaviour. Though earlier research has identified job satisfaction (Locke, 1976) as an important antecedent of employee behaviour, Porter et al (1974) argued that attitudes towards the organization have a greater impact on the decision to remain than more specific attitudes with the job. Similar argument was advocated by Jackofsky and Peters (1983), that organization commitment may have a stronger relationship with organizational turnover. Recent research (e.g. Griffith et al, 2000) has found that organization commitment is a strong and consistent predictor of turnover (Cotton and Tuttle, 1986; Shore and Martin, 1989; Griffith et al, 2000). Furthermore, the meta-analytic findings in chapter 3 reveal that job satisfaction and organization commitment reduce turnover in organizations, and that organization commitment is more consistent predictor of actual turnover than job satisfaction. Thus we hypothesize:

Hypothesis 4.15: Job attitudes are negatively associated with turnover.

Hypothesis 4.15a: Job satisfaction is negatively associated with turnover.

Hypothesis 4.15b: Organization commitment is negatively associated with turnover.

4.5 Research hypotheses for indirect effects

The second part of the model explains the mediating role of wellbeing and job attitudes in the work environment-turnover relationship. Previous studies have shown direct relationships between the work environment characteristics included in the present study and individual and organizational outcomes. However, it is posited that insufficient attention has been given to the mechanisms that may explain these relationships. Many studies do not include mediators, and those that do only consider one mediator in their models.

The consideration of anxiety as a mediator is based on expectancy theory. According to expectancy theory, employees expect an environment that supports them in their work and family roles and, therefore, positively value work and family support provided by their organization. Also, employees give a negative value to anxiety and expect their organization to take measures to reduce it. When employees' expectations and values are met, they respond by increasing positive job attitudes (job satisfaction and organization commitment) and reducing negative behaviours (turnover). It is, therefore hypothesized that:

Hypothesis 4.16: Anxiety will mediate the relationship between work environment characteristics and job satisfaction.

Hypothesis 4.16a: Anxiety will mediate the relationship between work demands and job satisfaction.

Hypothesis 4.16b: Anxiety will mediate the relationship between autonomy and job satisfaction.

Hypothesis 4.16c: Anxiety will mediate the relationship between managerial support and job satisfaction.

128

Hypothesis 4.16d: Anxiety will mediate the relationship between family support and job satisfaction.

Hypothesis 4.17: Anxiety will mediate the relationship between work environment characteristics and organization commitment.

Hypothesis 4.17a: Anxiety will mediate the relationship between work demands and organization commitment.

Hypothesis 4.17b: Anxiety will mediate the relationship between autonomy and organization commitment.

Hypothesis 4.17c: Anxiety will mediate the relationship between managerial support and organization commitment.

Hypothesis 4.17d: Anxiety will mediate the relationship between family support and organization commitment.

Hypothesis 4.18: Anxiety will mediate the relationship between work environment characteristics and turnover.

Hypothesis 4.18a: Anxiety will mediate the relationship between work demands and turnover.

Hypothesis 4.18b: Anxiety will mediate the relationship between autonomy and turnover.

Hypothesis 4.18c: Anxiety will mediate the relationship between managerial support and turnover.

Hypothesis 4.18d: Anxiety will mediate the relationship between family support and turnover.

The consideration of job attitudes as mediators is based on social exchange theory. Social exchange theory provides the basis to believe that, by reducing work demands on employees, and by offering job control, work and family support policies, organizations commit themselves to the wellbeing of their employees. The norms of reciprocity, thus creates a feeling of commitment to organizational objectives which, in turn, will compel employees to lower undesirable behaviours (turnover). Therefore, I propose:

Hypothesis 4.19: Job satisfaction will mediate the relationship between work environment characteristics and turnover.

Hypothesis 4.19a: Job satisfaction will mediate the relationship between work demands and turnover.

Hypothesis 4.19b: Job satisfaction will mediate the relationship between autonomy and turnover.

Hypothesis 4.19c: Job satisfaction will mediate the relationship between managerial support and turnover.

Hypothesis 4.19d: Job satisfaction will mediate the relationship between family support and turnover.

Hypothesis 4.20: Organization commitment will mediate the relationship between work environment characteristics and turnover.

Hypothesis 4.20a: Organization commitment will mediate the relationship between work demands and turnover.

Hypothesis 4.20b: Organization commitment will mediate the relationship between autonomy and turnover.

Hypothesis 4.20c: Organization commitment will mediate the relationship between managerial support and turnover.

Hypothesis 4.20d: Organization commitment will mediate the relationship between family support and turnover.

4.6 Research hypotheses for moderators

It was argued in chapter 2 that, in order to correctly model turnover behaviour, gender differences at the individual level and sectoral differences at the workplace level must be taken into account. These differences may help to understand how individuals perceive their work environments and the role these perceptions play in forming employee attitudes, general wellbeing, and behaviour.

Positive employee attitudes depend on their perception of how committed their organizations are to their wellbeing (Wayne et al, 1997). Organizations, on the other hand, seek to develop committed workforces by making efforts to improve employee performance and job attitudes, and to reduce turnover (Gould-Williams and Davies, 2005). However, the provision of support for work and family in these organizations

is influenced by social and political factors, the visibility of organizations, and the demographic mix of employees in organizations (Goodstein, 1994).

Since public sector establishments have high visibility (Goodstein, 1994; Dex and Smith, 2002; Bond et al, 2002), they are more likely to adopt policies that treat employees fairly and equitably to promote growth and personal development (Kelleberg et al, 2006). In addition, positive managerial characteristics are more compatible with the humanistic approach (e.g. Maslow, 1954; McGregor, 1960; Likert, 1967) which is commonly practiced in the public sector. The essence of the humanistic approach is that managers must lead by motivation, behaving in a way that employees see as desirable, beneficial and legitimate (Whicker and Areson, 1990). Since, these characteristics are more common in the public sector, therefore, I hypothesize:

Hypothesis 4.22: perceived managerial support may be higher in public
sector establishments compared to private sector.

Work and family support provisions are influenced by whether the employer organization is a public sector organization or a private sector one. Dex and Smith (2002) have argued that organizations are more likely to adopt family support policies when they experience institutional pressures from statutory legal enforcements. Local government have made great efforts to promote childcare and flexible workplace options in the public sector. The government uses its power to develop and implement socially responsible policies that organizations in the public sector will adopt (Goodstein, 1994). Since, public organizations are more visible and are more likely to be evaluated according to governmental standards and norms, they are sometimes required to implement government policies especially when the government wants to set an example for other organizations to follow (den Dulk, 2001). Using WERS 98 data Dex and Smith (2002) found that public sector workplaces had a greater number of family support policies compared to private sector workplaces. They concluded that larger establishments, gender composition of workforce, and public sector establishments were important determinants of family friendly policies. Thus, I hypothesize:

Hypothesis 4.23: Public sector workplaces are perceived as more family supportive than the private sector establishments.

Greater performance pressures on private sector organizations may make them more likely to give their employees higher levels of autonomy (Dolcos, 2006). In addition, private sector employers may expect their employees to work for longer hours. Thus, I hypothesize that:

Hypothesis 4.24: Private sector establishments are more likely to provide work autonomy than public sector establishments.

Hypothesis 4.25: Perceptions of high work demands will be lower in public sector establishments than in the private sector.

With a change in the demography of the workforce, organizations have been facing increased pressures to acknowledge that work and family life is not separable (Cook, 1989). An increase in the number of working mothers and dual-earner families has not only increased the spill-over of work and family spheres but has also intensified work-family conflict (Cook, 1989; Goodstein, 1994). Since women face increased work-family pressures, organizational involvement in work-family support is more desired by them.

Hypothesis 4.26: The relationship between perceived family supportiveness and employee wellbeing, job attitudes, and turnover will be stronger for women.

In addition, moderator analysis by gender, summarised in chapter 3, has shown that gender moderated the relationships between autonomy and job attitudes, supervisor support and job attitudes, perceived work overload and job attitudes, and organization commitment and turnover. This indicates that women may perceive their work environments differently from men. The difference in perceptions may influence their perceived wellbeing, job attitudes and behaviour. Based on the results of meta-analysis, I hypothesize:

Hypothesis 4.27: The relationship between autonomy and employee wellbeing, job attitudes, and turnover will be weaker for women.

Hypothesis 4.28: The relationship between managerial support and employee wellbeing, job attitudes, and turnover will be stronger for women.

Hypothesis 4.29: The relationship between work demands (work overload) and employee wellbeing, job attitudes, and turnover will be stronger for women.

4.7 Applicability of the proposed model

The present study tries to present a turnover model based on those environmental variables that directly influence the attitudes, wellbeing and behaviours of organizational members. Understanding the work environment is important for management as it allows managers to know how different policies and procedures are interpreted by employees, and how these perceptions (positive or negative) influence employees' attitudes, perceived wellbeing and behaviour as a whole. To gain this understanding, four aspects of work environment have been studied to uncover the causal relationships between perceived work environments and outcome variables. Using a diverse sample (WERS 2004 data set) to test the model will allow for the generalizability of the model to various contexts. Furthermore, I will be able to analyze the ways in which work environment perceptions differ from one employment setting to another.

Concluding remarks

The current study examines and compares employee perceptions of their work environment and particularly perceived family support between organizations from the public and private sectors. The study seeks to determine how these perceptions influence employee wellbeing, job satisfaction, organization commitment and

133

turnover. Four aspects of work environments are assessed: psychological work demands, autonomy, managerial support and family support. The direct effects of perceived work environments on the outcomes of wellbeing, job attitudes, and turnover are examined. Furthermore, the indirect effects of perceived work environments on turnover, through wellbeing and job attitudes, are also explored. An integration of job demand-control-support (JDCS) theory and social exchange theory is used to explain the turnover process.

Both public and private sector organizations in Britain are seeking to help their employees balance their work and family lives in an attempt to increase individual performance (Bond et al, 2002). Prior research on family policies has largely focused on developing a profile of organizations offering family-friendly benefits to their employees (Dex and Smith, 2002; Bond et al, 2002). Little research has focused exclusively on employees' experiences of family support in both the public and private sectors. Furthermore, the effects of these supports on employee wellbeing, attitudes and behaviour are largely unknown.

The present study seeks to extend the current knowledge of employee turnover theory by undertaking a large scale study of employee turnover using data from British workplaces and through the study of organizationally relevant turnover predictors. WERS 2004 includes employees' responses on various work environment characteristics, employees' affective attitudes, and subjective wellbeing; and workplace level data on voluntary turnover. Emphasis will be placed on employees' perceptions of their work environments and linking these perceptions to their affective attitudes, wellbeing and behaviour at workplace level. The next chapter (chapter 5) outlines the methodological approach taken by this research to answer the key research objectives.

Chapter 5

Research Design

5.1 Introduction

This chapter outlines the methodology adopted and procedures applied at various stages of the research process. The chapter includes the following five sections: (1) research paradigm; (2) description of data set, sample subjects, and measures; (3) data screening methods; (4) data preparation procedure for establishment level analysis; (5) description of specific analytic tools for testing the hypotheses so formulated. This chapter, therefore, serves as a link between the conceptual framework developed for this research (chapter 4) and the analysis chapter (chapter 6).

5.2 Research paradigm

This study takes the ontological position that reality is external to the individuals who inhabit it. It simply exists beyond our description or influence but can be understood by identifying the structures that compose the phenomenon of interest. By introducing changes in the identified structure of phenomena, one can transform the status quo (Bryman, 2004). Real life systems are too complicated to allow for mathematical treatment directly. So, in these cases, models are created embodying simplified but specific assumptions about the structure of the processes to be modelled. These models not only simplify real systems but also make theories applicable or can be used to correct theories. All of this can be accomplished by using theory as a guide for constructing models of real life systems which also takes into account what we know about the structure of the system independently from the theory (Griesmaier, 2006). These models are then tested in the real social world.

The epistemological position of this study is situated between positivist and critical realist paradigms. Positivism is an epistemological position that applies a natural

science, hypothetico-deductive, pluralistic, objective and outcome oriented approach to phenomena of interest (Cook and Reichardt, 1979). Critical realism departs from positivism for believing that conceptualizing reality is a way to know the reality and not reflect actual reality. So under critical realism, models offer the prospect of introducing changes (Bryman and Bell, 2003). The researcher remains an independent observer of the object of study and does not impose self concepts on reality but creates models by observing reality in order to better understand what that reality is. Here, the study will attempt to understand employees' perceptions of their workplace environment and how that influences their wellbeing, job attitudes and voluntary turnover; thus, investigating the existing reality.

The methodological position of this research rests on the assumption of quantitative methods. Among various epistemological positions, positivism allows researchers to use methods to quantify observations and duplicate procedures to find rules or patterns of social life (Ambert et al., 1995). The social survey is used as a preferred research instrument and experimental designs and secondary analysis of pre-collected data are also recognized as confirming to the positivist philosophy (Bryman, 1984). Usually researchers have to decide whether to start from theory (deductive approach) or data (inductive approach). However, positivism may involve elements of both a deductive and inductive strategy (Bryman and Bell, 2003). This research will benefit from both inductive and deductive approaches of design, called an abductive approach, as this research is placed in a positivist-realist paradigm. An abductive strategy seems appropriate to pursue for two reasons; firstly, the researcher has a well developed conceptual model to start with which signifies a deductive approach. Secondly, the researcher cannot ignore the possibility of observing significant relationships between certain variables during data analysis that should be included in the model, signifying an inductive approach.

5.3 Data set, sample subjects, and measures

The meta-analysis outlined in Chapter 3 revealed that most of the empirical research has

been conducted in North America; hence, conclusions drawn from these studies pertain specifically to the American culture (Addae, 2003). Therefore, the findings from these studies may not be applicable to British organizations having work values and workplace cultures which are very different from those prevalent in American organizations. In addition, research on turnover in British workplaces, particularly from a socio-psychological perspective, is limited.

In order to test the viability of the proposed model, a large and representative sample involving a representation of the organizations of various sizes and from different industrial sectors was also desired, allowing the results to be generalized. In this regard, use of the nationally-representative 2004 Workplace Employment Relations Survey (WERS 2004) became the choice of the present study.

5.3.1 WERS 2004

WERS 2004 is a cross section survey and is based on a random sample of 2295 establishments. Data from these establishments was collected in 2004. The survey consists of five components, namely employee profile questionnaire, main management interview, interviews with employee representatives, survey of employees and financial performance questionnaire. So WERS 2004 captures the view-point of both employees and management in each of the sampled workplaces. WERS 2004 data provides both individual level and workplace level data, thus allowing multi-level analysis of variables' as proposed in the model (Figure 4.1). The scope of WERS 2004 is broad, covering a wide range of issues in management interviews, with the employee survey and employee profile questionnaire providing information on the key variables which form the basis of this project.

5.3.2 Reliability and validity of data

WERS 2004 pertains to a cross sectional design by collecting data on more than one case to establish variation by making fine distinctions between cases. Cross sectional designs

only allow for examining relationships between variables, because there is no time ordering to the variables and data is collected simultaneously. This creates a problem in establishing the direction of causal relationships between variables. So, internal validity is low. However, external validity is strong as the sample from which data is collected is randomly drawn, making the sample representative of the entire population.

The high response rate, 64% for the management interview and 61% for employee survey questionnaire, suggest the perceived reliability of the data. Manager and worker representatives in 2300 workplaces were interviewed about all aspects of employment relations, and almost 22,500 employees completed a questionnaire about their work life. This enables the researcher to develop a picture of employees' and managers' views in the same workplace. Replicability is assured in cross sectional design in terms of sample selection procedures, measures of concepts, the research instrument used and the analysis of the gathered data.

5.3.3 Sample characteristics from WERS 2004

As stated earlier, to test the generalizabilty of the proposed model, a large scale data set that is diverse in terms of size, business, location, sector and industry of the sampled establishments is needed. Furthermore, the proposed model does not require us to focus on specific industries or any particular type of organization. Thus, WERS 2004 dataset serves the purpose fully.

As described earlier, the WERS 2004 survey consists of five components, but data on the main variables of the study are derived from two components only: the Management Questionnaire, consisting establishment level data on sampled establishments, and the Employee Survey Questionnaire, consisting individual level data from 22451 employees in the sampled establishments. The Employee Survey Questionnaire includes measures of variables comprising the work environment characteristics, employee job attitudes, wellbeing and the employee profile. The management questionnaire includes measures

of voluntary turnover and establishment characteristics. A description of establishment and employee characteristics is given in the following sections.

5.3.3.1 Establishment characteristics

Table 5.1 gives a breakdown of establishments on the basis of size, age, and sector of employment. Our sample consists of 2295 establishments from both the public and private sectors. 1706 establishments belong to the private sector, whereas, 589 are drawn from the public sector. In the private sector, the sample consists of establishments from seven types of private companies: 576 establishments are Public limited companies, 794 Private limited companies, 132 Partnership (inc. Limited Liability Partnership)/Self-proprietorship, 92 Trust/Charity, 55 Company limited by guarantee, 33 Body established by Royal Charter, and 24 establishments are Co-operative/Mutual/Friendly societies. In the public sector, five types of establishments are included in all: 457 Local/Central Government (inc. NHS and Local Education Authorities) establishments, 62 Public service agencies, 51 Government-owned limited companies/nationalized industries/Trading public corporations, 13 other non-trading public corporations, and 6 establishments are Quasi Autonomous National Government Organizations (Table 5.1).

Table 5.1 presents the size (number of employees), age, private/public breakdown of the sample establishments. As can be seen, the majority of the establishments in the sample employ between 50 and 5000 employees, with an overall mean of 414 and a standard deviation of 950. The age of the establishments in the sample range from less than a year to over 200 years, with a mean of 43 years and a standard deviation of 64.

Table 5.1: Size, age and private/ public classification of sample by establishment status

Establishment status	Less than 50	50-99	100-149	150-249	250-499	500-999	1000-1999	2000-4999	5000-9999	10000-49999	Total no. of Estab.	Average age in years (No. of establishments)
Private												
Public Limited Company (PLC)	199	61	41	60	97	61	33	21	2	1	576	38 (554)
Private limited company	410	119	54	71	61	48	21	10	0	0	794	32 (784)
Company limited by guarantee	27	12	5	5	1	3	1	1	0	0	55	32 (54)
Partnership (inc. Limited Liability Partnership) / Self-prop	107	9	2	3	2	2	5	2	0	0	132	34 (129)
Trust / Charity	39	17	11	6	4	8	2	3	2	0	92	64 (89)
Body established by Royal Charter	4	1	1	4	4	1	3	14	1	0	33	120 (33)
Co-operative / Mutual / Friendly society	14	5	2	0	1	1	1	0	0	0	24	53 (24)
Private total											1706	
Public												
Government-owned limited company / Nationalised industry / T	10	8	7	9	5	4	6	2	0	0	51	65 (47)
Public service agency	14	10	4	7	11	9	2	3	2	0	62	80 (56)
Other non-trading public corporation	1	1	1	2	3	1	3	1	0	0	13	71 (13)
Quasi Autonomous National Government Organisation (QUANGO)	1	1	0	2	1	1	0	0	0	0	6	34 (5)
Local/Central Government (inc. NHS and Local Education Autho	155	64	39	30	34	29	26	68	12	0	457	56 (437)
Public total											589	
Total	981	308	167	199	224	168	103	125	19	1	2295	43 (2225)

Table 5.2: Types of the establishments in the sample by status

	One of a number of different workplaces in the UK belonging to the same organization	Single independent establishment not belonging to another body	Sole UK establishment of a foreign organisation	Total
Private				
Public Limited Company (PLC)	545	26	5	576
Private limited company	464	300	30	794
Company limited by guarantee	27	23	5	55
Partnership (inc. Limited Liability Partnership) / Self-prop	49	80	3	132
Trust / Charity	62	29	1	92
Body established by Royal Charter	16	16	1	33
Co-operative / Mutual / Friendly society	20	3	1	24
Total Private	**1183**	**477**	**46**	**1706**
Public				
Government-owned limited company / Nationalised industry / T	47	3	1	51
Public service agency	56	6	0	62
Other non-trading public corporation	9	4	0	13
Quasi Autonomous National Government Organisation (QUANGO)	5	1	0	6
Local/Central Government (inc. NHS and Local Education Authority	426	31	0	457
Total Public	**543**	**45**	**1**	**589**
Total	**1726**	**522**	**47**	**2295**

Table 5.3: Demographic profile of the respondents of the 'Employee Survey'

	Frequency	Valid % age
Sex		
Male	10383	46.5
Female	11962	53.5
Unknown	106	
Total	22451	100
Age (years)		
16-17	245	1.1
18-19	495	2.2
20-21	587	2.6
22-29	3461	15.5
30-39	5606	25.1
40-49	5985	26.8
50-59	4938	22.1
60-64	860	3.8
65 or more	185	0.8
Unknown	89	
Total	22451	100
Academic Qualification		
No academic qualification	3515	16.0
Academic qualification	18476	84.0
Unknown	460	
Total	22451	100
Professional Training		
No professional training received	7461	35.5
Received some professional training	13561	64.5
Unknown	1429	
Total	22451	100
Tenure (years)		
Less than a year	3535	15.8
1 to less than 2 years	2871	12.8
2 to less than 5 years	5987	26.8
5 to less than 10 years	4159	18.6
10 years or more	5815	26.0
Unknown	84	
Total	22451	100.0
Job contract		
Permanent	20591	92.1
Temporary - with no agreed end date	1006	4.5
Fixed period - with agreed end date	750	3.4
Unknown	104	
Total	22451	100
Union/association membership		
Yes	8220	36.8
No, but have been in the past	3707	16.6
No, have never been a member	10402	46.6
Unknown	122	
Total	22451	100

Table 5.2 provides a breakdown of establishments by their ownership status. The majority of the establishments in the sample belong to the number of different workplaces in the UK belonging to the same organization (1726), with a remainder of establishments being either single independent establishments not belonging to another body (522), or sole UK establishment of a foreign organization (47). About 71.7% of the establishments in the sample are UK owned/controlled, 6.1% are predominantly UK owned (51% or more), 4.8% UK and foreign owned, 5% are predominantly foreign owned (51% or more), and 12.4% are foreign owned/controlled.

5.3.3.2 Characteristics of respondents

Table 5.3 shows the overall characteristics of the respondents (employees) in terms of their age, sex, education, tenure, pay, and union/association membership. The information in Table 5.3 reveals that a majority of respondents are: females, between 30 to 50 years of age, academically qualified, have received some professional training, have been working in the current workplace for an average of 5 years and have a permanent job contract. Also, large proportions of respondents are non-unionized.

5.3.4 Measurement of key variables

Using data from the WERS 2004 survey, this study examines the effect of employees' perceptions of their work environments on employee wellbeing (anxiety), attitudes (job satisfaction and organization commitment) and turnover.

5.3.4.1 Turnover

Turnover is the dependent variable in the current research. In WERS 2004, turnover is measured at the establishment level. Turnover may be classified as voluntary or involuntary. However, researchers usually do not report whether they have used voluntary or involuntary turnover in their studies and report overall turnover

numbers which makes it difficult to make a comparison across studies. Also voluntary turnover will have different underlying reasons from involuntary turnover. Voluntary turnover (resignation) is used here. The particular questions included in management questionnaire for turnover are:

> *"In total, how many employees were on the payroll at this establishment 12 months ago?"*

and

> *"Of these employees how many stopped working here because they resigned voluntarily?"*

Here, actual number of turnover is obtained from the management respondent. The turnover rate is calculated by dividing number of resignations in the last 12 month period (voluntary turnover) by the total number of employees at the end of same 12 month period for each establishment. Calculating the turnover rate in this manner is consistent with earlier work in the same area (Mobley, 1982; Terborg and Lee, 1984; George and Bettenhausen, 1990).

5.3.4.2 Job satisfaction

Job satisfaction reflects an emotional state that results from the assessment of various aspects of one's work situation. Job satisfaction is measured using seven items including: (i) *The sense of achievement you get from your work;* (ii) *The scope for using your own initiative;* (iii) *The amount of influence you have over your job;* (iv) *The training you receive;* (v) *The amount of pay you receive;* (vi) *Job security; and* (vii) *The work itself.* The response for these facets of job satisfaction is received on a five-point scale from 'very satisfied' (scoring 1) to 'very dis-satisfied' (scoring 5). The scale was reversed before adding the scores of all the seven items to compute overall job satisfaction. The job satisfaction score has a mean of 24.62 and a standard deviation of 4.862. Individual employee scores on the scale are averaged within establishments to create a job satisfaction score for each establishment.

5.3.4.3 Organization commitment

Organization commitment is a positive emotional state which reflects an individual's attachment to the entire organization (Harrison et al, 2006). Organization commitment in WERS 2004 is measured by seeking responses to three questions from employees on a five-point scale from 'strongly agree' (scoring 1) to 'strongly disagree' (scoring 5). These three items include: *(i) "I share many of the values of my organization"; (ii) "I feel loyal to my organization"; and (iii) "I am proud to tell people who I work for".* The total score on commitment is computed by adding the scores of all three items after reversing the scale. The organization commitment score has a mean of 10.98 and a standard deviation of 2.5. Individual employee scores on the scale are then averaged within establishments to measure organization commitment within each establishment.

5.3.4.4 Anxiety

Anxiety is measured using a five point scale ranging from 'never' (scoring 5) to 'all the time' (scoring 1) for three items. These items include: In past few weeks how much of the time has your job made you feel (i) tense, (ii) worried, and (iii) uneasy. For these items a high score indicated less anxiety and a low score indicated high anxiety. The scale was, therefore, reversed so that a high score means high anxiety and a low score means low anxiety. The total measure of perceived work overload is computed by adding the score of all three reverse coded items. The mean score of anxiety is 7.36 and standard deviation is 2.608. Individual employee scores on the anxiety scale are averaged within establishments to measure anxiety level at each establishment.

5.3.4.5 Perceived work demands

Perceived work demands reflect employees' perceptions of too much work to do in a given time. Perceived work demands (PWD) is measured using five point scale ranging from 'strongly agree' (scoring 1) to 'strongly disagree' (scoring 2) for three statements. These items include: *(i) "My job requires that I work very hard"; (ii) "I never*

seem to have enough time to get my work done"; and (iii) "I worry a lot about my work outside working hours". For these items, a high score indicates less PWD and low score indicates high PWD. Thus the scale is reversed so that a high score means high PWD and vice versa. The total measure of perceived work demands is computed by adding the score of all the three items. The mean score of perceived work demands is 9.9 and standard deviation is 2.408. Individual employee scores on the scale are averaged within establishments to measure perceived work demands for each establishment.

5.3.4.6 Autonomy

Autonomy means 'allowing individuals some control over processes and decisions directly related to their jobs' (Kanter, 1977). Autonomy is measured on a four point scale ranging from 'a lot' (scoring 1) to 'none' (scoring 5). The measure used consists of five items: (i) "In general how much influence you have over the tasks you do in your job?"; (ii) "In general how much influence you have over the pace at which you work?"; (iii) "In general how much influence you have over how you do your work?"; (iv) "In general how much influence you have over the order in which you carry out tasks?"; and (v) "In general how much influence you have over the time you start and finish your working day?". It is clearly evident from the scale that a high score indicates less autonomy and a low score indicates high autonomy, so the scale was reversed before computing the total score on autonomy. A high score means high autonomy and a low score means low autonomy. The total measure of autonomy was computed by adding the score of all the five items. This had a mean of 14.93 and a standard deviation of 3.70. Individual employee scores on the scale are averaged within establishments to create an autonomy score for each establishment.

5.3.4.7 Managerial support

Overall managerial support is measured using four dimensions: trust, communication, participation and support for skill development.

5.3.4.7.1 Trust

Trust exists between employees and their managers when employees believe that the actions of mangers will be consistent with their promises, and managers believe that the actions of employees will be consistent with expectations from them (Ganesan, 1994). Trust among management and employees is important for harmony in the workplace. To measure employees' trust in their management, the following four items are included in the employee survey questionnaire: (i) "Now thinking about the managers of this workplace, managers here can be relied upon to keep their promises"; (ii) "Now thinking about the managers of this workplace, managers here are sincere in attempting to understand employees' views"; (iii) "Now thinking about the managers of this workplace, managers here deal with employees' honestly"; and (iv) "Now thinking about the managers of this workplace, managers here treat employees fairly". These items are measured on a five point scale ranging from strongly agree (scoring 1) to strongly disagree (scoring 5). The scale was reversed before calculating the total score measuring trust so that a higher score means higher trust of managers and a low score means low trust of managers. Then the total measure was computed by adding the score on all four items. The total trust score had a mean of 13.46 and a standard deviation of 3.879. Individual employee scores on the scale are then averaged within establishments to create a score on trust for each establishment.

5.3.4.7.2 Communication

Communication refers to the flow of information between management and employees and the effectiveness of that information (Carmeli, 2005). Two aspects of communication are included in WERS 2004: content of information and means of information. To measure the content of information for its effectiveness, four questions are included in WERS 2004: (i) "In general how good would you say managers at this workplace are at keeping the employees informed about the changes to the way the organization is being run?"; (ii) "In general how good would you say managers at this workplace are at keeping the employees informed about the changes in staffing?"; (iii) "In general how good would you say managers at this workplace are at keeping the employees informed about the changes in the way you do your work?"; and (iv) "In general how good would you say managers at this workplace are at keeping the employees informed about the financial matters including budgets or profits". All these items are measured on a five

147

point scale ranging from very good (scoring 1) to very poor (scoring 5). Thus the scale was reversed before calculating the total score. Communication had an average score of 12.91, a standard deviation of 3.974. Individual employee scores on the scale are averaged within establishments to create communication score for each establishment.

5.3.4.7.3 Participation:

This variable refers to the extent to which employees believe that managers allow them to make decisions about their work by seeking their view and responding to their suggestions (Weber and Weber, 2001). The measure used consists of three items referring to: *(i)* *"Overall how good would you say managers are at seeking the views of employees or employee representatives"; (ii) "Overall how good would you say managers are at responding to the suggestions from employees or employee representatives"; and (iii) "overall how good would you say managers are at allowing employees or employee representatives to influence final decisions"*. All the items are measured on five-point scales. For the first three items, the scale ranges from 'very good' (scoring 1) to 'very poor' (scoring 5). For the fourth item, the scale ranges from 'very satisfied' (scoring 1) to 'very dissatisfied' (score 5). The scale was reversed first and then total score on 'Participation' was computed by adding the scores of all four items. Participation has a mean score of 9.18 and standard deviation is 3.18. Individual employee scores on the scale are averaged within establishments to create a score on employee participation for each establishment.

5.3.4.7.4 Supervisor support

This variable refers to employees' perception of their relationship with and supportiveness of their supervisors or managers and how well they can depend on the supervisor to attend to their individual concerns (Lynch et al, 1999). Supervisor/manager support is measured using two items in WERS 2004 including: *(i)* *"To what extent you agree or disagree that managers at this workplace understand about employees having to meet responsibilities outside work"; and (ii) "To what extent you agree or disagree that managers at this workplace encourage people to develop their skills"*. All the three items are measure on five-point scales. The scale ranges from 'strongly agree'

(scoring 1) to 'strongly disagree' (scoring 5) for both items in the scale. Again the actual scores on scale were reversed before computing the total score for 'Supervisor support'. The total score was computed by adding the score on all the three items. Mean score for supervisor support is 6.98 and standard deviation is 1.86. Individual employee scores on the scale are then averaged within establishments to create a score on supervisor's support for each establishment.

5.3.4.8 Family support

Perceived family support is measured using two dimensions: flexible work arrangements and family care benefits.

5.3.4.8.1 Flexibility

There has been great interest in flexible work arrangements, which is a form of discretionary time systems. Different forms of work scheduling are being studied as a means of enhancing the quality of working life. These work schedules include compressing the work week into fewer hours and/or days, part-time employment and flexi-time in which employee defines the actual starting and quitting time, break and lunch times and their durations as well (Pierce and Newstrom, 1980).

In WERS 2004, flexibility is captured by asking employees if any of the seven flexible work arrangements were available to them. These include: *(i) " Flexi-time; (ii) Job sharing; (iii) chance to reduce working hours; (iv) chance to increase working hours; (v) working at or from home; (vi) change shift time; and (vii) Workings same number of hours across fewer days.* The responses to these flexible arrangements were measured on a two-point scale 'yes' (scoring 1) and 'no' (scoring 2).

The response scale is recoded ('yes' as 2 and 'no' as 1) so a high score indicates more flexibility and low score indicates less flexibility. The total score on flexibility is computed by adding the response on each of the seven items. Individual employee scores on the scale are then averaged within establishments to create a score on flexibility provided in each establishment.

5.3.4.8.2 Family care benefits

Employee perceptions of the availability of family care benefits are tapped in WERS 2004 employee survey questionnaire using three questions on a dichotomous scale 'yes' (scoring 1) and 'no' (scoring 2): *If you personally needed any of the following, would they be available to you?(i) "Working only during school term time"; (ii) "Paid parental leave"; and (iii) "Workplace nursery or help with child care costs".* The response scale is recoded as: 'yes' = 2 and 'no' = 1 to measure family support benefits available in workplaces. The individual employee scores on the scale are then averaged within establishments to create a score on family support benefits provided in each establishment. A high score indicates more family support benefits and a low score indicates less family support benefits.

5.3.5 Levels of measurement

Data can be continuous, categorical, ordinal or a mix of these types. In social science research, some of the variables are clearly categorical such as gender, race or ethnicity; while, others are clearly continuous such as age, tenure, and income etc. Using Likert type response options is also quite common in research instruments in social sciences. WERS 2004 is no exception to it. The WERS instrument has included both categorical and Likert type scales to tap responses to items. Harrington (2008) has argued that when there are few response-options, treating variables as continuous can result in biased results. However, it is possible to treat variables as continuous when there are at least five response categories, sample size is sufficiently large, and data are approximately normally distributed (Cohen et al, 2003; Harrington, 2008). Labovitz (1967) has argued that by treating variables measured on an interval scale as ordinal (although they lie somewhere in between), we are losing the knowledge of at least an approximation to equal distances between adjacent scores. Some idea of the difference between two scores is much more useful than just knowledge that one is greater than the other (Labovitz, 1967).

Since all items measuring managerial support, psychological work demands, job satisfaction, organization commitment and anxiety are measured on a five point Likert type scale, they will be treated as continuous variables. Although, autonomy is

measured on a four point Likert type scale, consistent with extant literature (e.g. Sims et al, 1976; Parker and DeCotiis, 1983; Acorn et al, 1997; Behson, 2005; Thompson and Prottas, 2006), it is also treated as a continuous variable. The items measuring family support are measured on a binary scale, hence, are treated as categorical variables. Therefore, family support is considered a categorical latent variable.

5.4 Data analysis

This section introduces the data analytic tools used to test the proposed model. First, the given data is explored using mosaic plots to give a better visualization of the large data set. Then the data are analysed using several statistical procedures at individual and workplace level. These procedures are discussed in the following subsections.

5.4.1 Exploratory data analysis

Mosaic plots are developed as a graphical alternative for qualitative, or categorical, data (Hartigan and Kleiner, 1984), and their purpose is to find interesting patterns of association between variables (Meyer and Cook, 2000). These plots offer good support for the visualization of independence structures in multi-dimensional contingency tables. Mosaic plots are based on the fact that when the row and column variables are independent, the expected frequencies are the products of the row and column totals divided by the grand total. Each cell in the contingency table can be represented by a rectangle or tile, in the mosaic plot, whose area is proportional to the cell frequencies (Friendly, 1994). Where the goodness-of-fit statistics provide an overall summary of how well a model fits the data, the mosaic plot reveals the pattern of lack of fit, and helps suggest an alternative model that may fit better (Friendly, 1992). The current implementations of mosaic plots can be found in R-software in the 'vcd' package (Meyer et al. 2006). The 'strucplot' framework in the R package 'vcd' is used for visualizing multi-way contingency tables as mosaic plots. The results of exploratory data analysis are reported in chapter 6.

5.4.2 Data screening

Before the data file was subjected to analysis, the data was carefully screened for missing values, outliers, normality, and multi-collinearity. Each of these problems is considered in the following subsections, whereas the results are reported and discussed in the analysis chapter (Chapter 7).

5.4.2.1 Missing data

Analysis of missing data is carried out to avoid two main problems associated with data analysis, decreased statistical power and biased estimates of parameters (Hair et al, 1998). The significance of missing data depends on the pattern and amount of missing data. However, the pattern of missing data is more important than the amount of missing values (Tabachnick and Fidell, 2001).

If the missing values are not distributed randomly across the data matrix, there are serious problems. No matter how few they are, they affect the generalizability of the results (Hair et al, 1998; Tabachnick and Fidell, 2001). On the other hand, if only a few data points are missing at random from a large data set, the problem is less serious and any procedure for handling missing values yields similar results (Tabachnick and Fidell, 2001). Where there is no consensus over how much incomplete data is permitted in the analysis of data, Cohen and Cohen (1983) established that a 5 to 10% missing data level is not large.

There are three basic options available when dealing with missing data: list-wise deletion; pair-wise deletion; and imputation (Kline, 1998; Tabachnick and Fidell, 2001).

In the present study, pair-wise deletion is used for treating missing values for the following reasons. Firstly, the list-wise deletion method would result in an inadequate sample size or loss of meaningful data. Secondly, the number of missing values is typically small for most of the items. Thirdly, pair-wise deletion is useful when missing values are large (as is the case here with a few items), so there is no reason to omit even more with list-wise deletion. Also, we create composite variables

from individual items by averaging them together into new variables, and these composite variables will not have missing values because these will be an average of the existing data.

5.4.2.2 Outliers

Outliers are the cases with scores that are distinctly different from other observations in the same data set (Hair et al, 1998). Individual items are screened for outliers. Two different methods are used to identify outliers. First, normal probability plots are used to visually identify the outliers and, secondly, cases falling outside the limits (Q1 - 1.5 IQR, Q1 + 1.5 IQR) are identified as outliers. A number of cases in the data set are spotted as outliers. As outliers usually indicate an important range of the data, therefore, we decided to keep them a part of final analysis.

5.4.2.3 Normality

Most of the variables included in the study are continuous or dichotomous. Normality of continuous variables is the most important assumption in multivariate analysis (Hair et al, 1998); therefore, it is important to check the normality of the variables included in the model to be tested. Two statistical characteristics are used to describe non-normality i.e. skewness and kurtosis (Hair et al, 1998; Tabachnick and Fidell, 2001). Skewness concerns the symmetry of the distribution. If the mean value of a variable does not fall in the centre of the distribution, it is called a skewed variable. If there is positive skewness, there is a pileup of cases to the left and right tail is too long and is otherwise for negative skewness (Kline, 1998; Hair et al, 1998; Tabachnick and Fidell, 2001). Kurtosis has to do with the peakedness of the distribution; the distribution is either too peaked or flat. Tabachnick and Fidell (2001) suggest that value of skewness and kurtosis should be within the range of -2 to 2 when the data is normally distributed. On the other hand, Kline (2005) suggested an absolute value for the skew index larger than 3 and absolute value of kurtosis larger than 8 is non normal.

For dichotomous variables, a different assessment procedure is applied to determine whether or not they are normal. Literature on methodology (Tabachnick and Fidell, 2001) suggests deleting dichotomous variables with an extremely uneven split (i.e. 90-10 split, 90% say yes and 10% say no) from the correlation and/or regression analyses because the correlation coefficients between these and other variables are truncated, and scores for cases in the smaller category are more influential than scores in the category with the majority of cases.

5.4.3 Preparing data for model testing

After the data from the employee survey questionnaire is screened for missing data, outliers and normality; the data are prepared for establishment level analysis. This task involves, firstly, doing an exploratory factor analysis for items intending to measure work environment characteristics to check whether they load onto prescribed factors or not. Secondly, the scale consistency for each variable of interest is assessed at the individual level. Thirdly, support for aggregating individual level data to the establishment level is obtained using recommended statistical techniques (ANOVA, ICC's, and $R_{wg(j)}$). These measures (ICC's and $R_{wg\ (j)}$) provide reliability of measures at the workplace level, which is appropriate level of analysis for present study. Each of the three steps is discussed in the following subsections separately, whereas the results are reported and discussed in the analysis chapter (Chapter 7).

5.4.3.1 Exploratory Factor Analysis at individual level

Exploratory factor analysis is the most common method for reducing the given number of variables into a smaller number of higher order factors by determining the most suitable variables for each higher order construct.

The methodology of factor analysis involves performing three steps: assessing the suitability of data for factor analysis, factor extraction, and factor rotation. Data are suitable for factor analysis when the sample size is large and the variables to be factor analysed exhibit reasonable relationships with one another (Stevens, 1996). Nunnally (1978) has recommended 10 cases at least for each item to be factor

analysed, i.e. if there are 15 items to be factor analysed then a sample of at least 150 is required. For a reasonable relationship between variables, Tabachnick and Fidell (1996) have recommended a correlation of 0.3. If fewer correlations are above 0.3, the data are not suitable for factor analysis. Tabachnick and Fidell (1996) have also recommended the use of Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy. They recommended that the Bartlett test of sphericity should be significant and the Kaiser-Meyer-Olkin index to be 0.6 or above for the factor analysis to be conducted.

The second step, factor extraction, involves determining the smallest number of possible factors for data reduction. The Principal Component Analysis (PCA) technique is used here to conduct exploratory factor analysis. Principal component analysis is preferred for a number of reasons, including: it is the most commonly used technique, psychometrically-sound, mathematically simple to understand, and avoids the potential problems with factor indeterminacy associated with other techniques (Stevens, 1996). Kaiser's criterion and the scree plot are two techniques to decide the number of factors to be retained. Under Kaiser's criterion only those factors with an eigenvalue of 1.0 or more are retained, where the eigenvalue is the amount of variance explained by that factor.

The third step involves factor rotation to identify which variables clump together. There are two approaches to rotate factors to determine factor loadings: oblique rotation and orthogonal rotation. Orthogonal rotation is used as it is more common. Under the orthogonal approach, the varimax rotation method is used to minimize the number of variables having high loadings on each factor. Churchill (1991) has recommended a cut-off of 0.3 loadings, while Hair et al (1998) considered 0.3 levels as a minimum requirement, 0.4 more important and 0.5 or higher loadings as practically more significant.

5.4.3.2 Scale reliability at individual level

Internal consistency is the most popular of all methods for assessing scale reliability. Churchill (1979) advocated the use of Cronbach alpha (α) for assessing the quality of

scale. Cronbach alpha reflects how well various items in a scale measuring the same construct yield similar results. A low Cronbach alpha score indicates that some items do not share the similarity and, therefore, the poor performing items should be identified and discarded before proceeding further. Where there is no absolute guideline on the acceptable level of Cronbach alpha, Nunnally (1967) has suggested a reliability of 0.5 – 0.6 for basic research and Gerbing and Anderson (1988) have suggested an alpha value of 0.70 and above as reliable.

Item-total correlation is yet another measure suggested by Churchill (1979) to ascertain the unidimensionality of scale. If the items measure a single construct, then they should be reasonably correlated. Thus item-total correlation helps in deciding which items to retain and which ones to discard. For retaining the items, Steenkamp and Van Trijp (1991) have suggested item-total correlations ranging from 0.3 to 0.6. The internal consistency of all the scales is determined through the Cronbach alpha. Both the values of Cronbach alpha and item-total correlation are reported in the results chapter and all values are well above their recommended cut-offs.

5.4.3.3 Scale reliability at workplace level

Multi-level analyses have been frequently used in organizational climate (employees' perceptions of their work environments) research and justification for aggregation is provided in the earlier work on climate (e.g. Jones and James, 1979; Schneider, 1983; Schneider and Bowen, 1985). Individuals in groups, when exposed to similar work settings, interpret and respond to their environment in a somewhat similar manner as the other members of the group (Schneider, 1990), and tend to agree with each other rather than disagree (Schneider and Reichers, 1983). This dependence, of individual employees on others in the group, in the interpretation and response to environment can be measured and it affects the analysis of data and interpretation of results (Bliese and Jex, 1999). Bliese and Jex (1999) have further argued that this dependence biases individual-level results if not controlled for, and also contribute to non-equivalence between individual-level and aggregate-level results. This means that the relationships in the variables of interest may be found at workplace level, which cannot be detected at individual level of analysis (Bliese and Jex, 1999).

Klein et al (1994) have argued that no construct is level free as each construct is related to one or more levels within the organization, such as individuals, dyads, groups, and workplaces. They argued that levels issues create problems when the level of proposed theory, level of measurement, and level of statistical analysis are not similar. Level of theory explains the target to which one intends to make generalizations, level of measurement describes the unit from which data is collected, and level of analysis describes the treatment of data during statistical procedures (Rousseau, 1985; Klein et al, 1994). Thus, a critical step in addressing the level issue is the specification of the level of theory.

Here, the proposed level of theory for the present research is the workplace level. The first condition in specifying a level of theory beyond the individual is to establish that group members' values on a given construct are similar (Klein et al, 1994). Thus, in specifying workplace as a level of theory, we predict that the employees within a workplace have similar perceptions of the work environment so that they may be considered as a whole. Homogeneity in the individual perceptions of the employees of a workplace is a pre-requisite for assessing the shared perceptions in a workplace by aggregating individual responses. Another necessary condition is that between-group differences on one construct of the theory are related to the between-group differences on other constructs of the theory (Klein et al, 1994). Thus it is predicted that differences in between-workplaces climates are related to differences in the attitudes, wellbeing and behaviour of employees in workplaces.

To ensure the conformity of data to the level of theory, Burstein (1980) suggested that data may be collected at a level below the level of theory which may then be aggregated to the level of theory given homogeneity with-in data. Following this advice, individual responses from the employee survey questionnaire are aggregated at workplace level to measure shared perceptions of work environments, job attitudes, and wellbeing. However, data on actual turnover is available at workplace level in the employee profile questionnaire. Therefore, the overall data to be used in analysis pertained to two different levels of analysis. Before using data for testing the model, the individual level data is aggregated to workplace level.

Three statistical techniques are used to determine whether individual level responses can be aggregated to represent workplace level responses. The data should reflect non-independence (between-workplace differences), acceptable group mean reliability, and sufficient within-group agreement (Bliese, 2000; Castro, 2002), as this will confirm that an workplace level effect exists. Each of these methods, their application, results and interpretation of results is discussed below.

5.4.3.3.1 Non Independence

Non independence is checked using ANOVA and the Intra-class Correlation Coefficient (ICC). Kenny and Judd (1986) suggested one-way ANOVA to assess the non-independence for workplaces and individual responses on scales of interest. In the ANOVA model, the variable of interest is predicted from a group membership factor in which individual perceptions on variables of interest are the dependent variable and group membership is the independent variable (Bliese and Halverson, 1998). Here, workplace membership serves as an independent variable and individual responses on scale items are considered as the dependent variable. A significant F-value indicates greater between-workplace differences in responses than within-workplace responses (Kenny and Judd, 1986). However, the F test will not indicate the magnitude of the differences among workplaces (i.e. the workplace level properties of the data) which is of interest in this situation. Frequently used measures of the magnitude of the group (i.e. workplace) level properties of the data are intra-class correlations and within group agreement measure. Shrout and Fleiss (1979) have presented six types of Intra-class Correlation Coefficients. Here, I will use only two types ICC (1) and ICC (2).

5.4.3.3.2 Magnitude of group level properties

ICC (1) indicates the proportion of variance in individual level responses explained by workplace membership and is not affected by workplace size or the number of workplaces in the sample (Bliese, 2000; Castro, 2002; Griffith, 2003). ICC (1) is based on one-way random effect ANOVA and the formula (Bliese and Halverson, 1998) is given as:

$$ICC\ (1) = [MS_b - MS_w] / [MS_b + \{(N_g - 1) * MS_w\}]$$

In the equation, MS_b is the between group mean square, MS_w is the within group mean square, and N_g is the group size. In the case of unequal group sizes, the arithmetic mean of group sizes is used for N_g in ICC (1) equation (Blalock, 1972 in Bliese and Halverson, 1998). The acceptable range is from 0 to 0.5 with a median value of 0.12 (e.g. James, 1982; Griffith, 2003).

5.4.3.3.3 Group-mean reliability

ICC (2) indicates the proportion of variance in individual responses explained by both, the workplace membership and by respondents themselves. ICC (2) is used as a common method for assessing group means reliability (James et al, 1984) and is calculated by using the following formula (Castro, 2002):

$$ICC\ (2) = [MS_b - MS_w] / MS_b$$

This method is also based on ANOVA. A value of 0.60 or higher for ICC (2), indicates mean score reliability (e.g. Ostroff, 1993).

5.4.3.3.4 With-in group agreement

The within-group agreement index ($r_{wg(j)}$) is a measure of interrater agreement, and is typically used to determine the appropriateness of aggregating data to higher levels of analysis (James et al, 1984; Castro, 2002). James et al. (1984) suggested r_{wg} statistics to assess within-group agreement which is the ratio of 'observed variation in responses to the responses distributed evenly across the response categories' (Griffith, 2003). The $r_{wg(j)}$ index is calculated separately for each workplace (Castro, 2002) using R software. Each workplace in the sample has seven $r_{wg(j)}$ coefficients, one for each variable (perceived work demands, autonomy, managerial support, family support, organization commitment, job satisfaction and anxiety). The measures for each variable are averaged across workplaces and then interpreted. A cut-off point of at least 0.7 is considered adequate to justify workplace level aggregation (e.g. Griffith, 2003).

5.4.4 Structural equation modelling

Structural Equation Modeling is used as the data analytic technique. This technique is preferred over multiple regressions for the benefit of testing models with mediating variables. Though the multiple regression technique is employed in various academic disciplines for theory testing (Hair et al, 1998), it is not robust to measurement error and model mis-specification (Nusair and Hua, 2010). It usually assumes perfect measurement of variables; however, perfect measurement is seldom obtained in the social sciences (Musil et al, 1998; Schumacher and Lomax, 2004; Nusair and Hua, 2009). SEM is different from multivariate regressions in that, firstly, it takes a confirmatory approach to data analysis. Secondly, it provides explicit estimates for error variance parameters (Williams et al, 2001).

Here, the SEM analysis is conducted using a two-step approach (e.g. Hair et al, 1998; Schumacher and Lomax, 2004; Byrne, 2001). In the first step, a measurement model is specified and confirmatory factor analysis is used to determine the adequacy of the measurement model at the individual level of analysis. Both the construct reliability and validity is examined at this stage. The construct validity is examined using both convergent and discriminant validity before the measurement model is tested. In the second step, the structural model is evaluated. The overall model fit in both measurement and structural models is evaluated using goodness-of-fit indices including chi-square/df ratio, CFI, TLI and RMSEA (Hair et al, 1998; Byrne, 2001, Schumacher and Lomax, 2004). After the model is validated at the individual level of analysis, the scales are aggregated at workplace level and the structural model is evaluated at workplace level with turnover as the main outcome variable.

The MPlus program is used for the specification and testing of the hypothesized model. MPlus is statistical modeling software that allows researchers to analyze both cross-sectional and longitudinal data, single-level and multilevel data, or data with either observed or unobserved heterogeneity. It also has special features for handling missing data. MPlus uses the optimal Full Information Maximum Likelihood (FIML) approach to handling missing data that outperforms the list-wise deletion method (Little et al, 2000, p 215). Thus means and intercepts are estimated by the FIML missing data handling procedure.

MPlus differs from other SEM software packages (e.g. AMOS) in its ability to fit latent variable models to databases that contain ordinal or dichotomous outcome variables along with continuous outcomes variables. For continuous latent variables, the linear regression is used for estimating parameters. For binary and ordered categorical variables, probit or logistic regression models are used for parameter estimation.

MPlus reports the chi-square goodness of fit test, CFI, TLI and the RMSEA descriptive model fit statistic. Apart from these indexes of model fit, MPlus also reports the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). These are descriptive indexes of model fit and are used to compare the goodness of model fit of two or more competing models. Smaller values of AIC and BIC indicate better model fit.

5.4.4.1 The measurement model (CFA)

The first step in analysing data using the structural equation modeling technique is to test a measurement model using confirmatory factor analysis (CFA). Confirmatory factor analysis (CFA) is used to study the relationships between a set of observed variables and a set of latent variables (Schumacker and Lomax, 2004). In addition, CFA can identify scale items that cross-load on other constructs in the model (Bollen, 1989). After the measurement model is tested and finalized, it is further evaluated for reliability and validity.

The first step in a CFA is model specification. Based on theoretical or empirical evidence, researchers specify the set of relationships, the relationship between factors and measures, and the correlation between factors. Once, a CFA model is specified, the next step is to determine whether the model is identified. After the model is identified, the next step is to estimate the model parameters. The overall model fit is evaluated by examining the extent to which the theoretical model is supported by the sample data. If the fit of the model is good, then the specified model is supported by

161

the sample data. If the fit of the model is not good then the researcher has to modify the specified model (Schumacker and Lomax, 2004).

For comparing models for better fit, Hatcher (1994) has suggested the following criteria: (a) the p value for the chi-square test should be non-significant; (b) the chi-square/degrees of freedom ratio should be less than 5 (Schumacker and Lomax, 2004); (c) the t values for each of the factor loadings should exceed 1.96; (d) R-square values should be relatively large; and (e) the model should demonstrate high levels of fit as indicated by the fit indices. There are three categories of fit indices: the absolute fit index (chi-square), parsimonious fit index (RMSEA), and incremental fit index (CFI and TLI). After achieving adequate overall fit, the measurement model is further evaluated for its reliability and validity (Byrne, 1994; Schumacker and Lomax, 2004; Nusair and Hua, 2009).

5.4.4.2 Composite reliability

Item reliability indicates "the amount of variance in an item due to underlying construct rather than to error and can be obtained by squaring the factor loadings" (Chau, 1997 p324). Nusair and Hua (2009) have suggested a cut-off value of 0.5 for adequate item reliability (squared factor loadings). After the reliability of items is assessed, construct validity is assessed.

5.4.4.3 Construct validity

Validity is the extent to which a measurement scale represents a construct of interest (Hair et al, 1998). Overall construct validity is assessed by examining that measuring items are moderately correlated with each other (i.e. convergent validity) and each construct differs from all other constructs (i.e. discriminant validity). Convergent validity is attained if factor loadings are high in value (loading> 0.50) and are statistically significant (Anderson and Gerbing, 1988; Koufteros, 1999). In addition, average variance extracted (AVE) is greater than 0.50 (Fornell and Larker, 1981). Discriminant validity is examined by comparing average variance extracted (AVE)

162

with squared correlations (R^2) among latent constructs. Discriminant validity is attained if AVE is greater than R^2 (Nusair and Hua, 2009).

5.4.4.4 The structural model

Once a measurement model is tested and finalized, it is followed by a structural model (also called path model). A structural model is a correlational link between exogenous and endogenous variables. The structural model describes two types of relationships in one set of multivariate regression equations: the relationships among factors (Byrne, 1994; Schumacker and Lomax, 2004) and the relationships between factors and observed variables that are not factor indicators (Byrne, 1994). The relationships between latent or manifest variables are specified by the direction of arrows. Where the measurement model provides an assessment of the convergent and discriminant validity, the structural model provides an assessment of predictive validity (Anderson and Gerbing, 1988). To estimate the structural model, the model needs to be identified (i.e. the number of structural equations should be equal to number of dependent variables). After the model is identified, the maximum likelihood method is used to estimate the structural parameters.

Concluding remarks

The present chapter presents the methods used in the present study for screening and preparing data for statistical analysis. Using these methods the data are analysed and results are presented in the next chapters; chapter 6 and 7.

Chapter 6

Exploratory Data Analysis

6.1 Introduction

This chapter is first of two chapters (Chapter 6 and 7) reporting the analysis of the 2004 Workplace Employment Relations Survey data. The present chapter presents an exploratory analysis of the raw data. The objective is to understand the nature of the association between gender and employees' responses to 'work environment characteristics', 'job attitudes', and 'wellbeing'. The findings are presented with the help of mosaic plots to give a better visualization of the patterns in the data. The measures of the variables are derived using multiple standard indicators from WERS 2004 Employee Survey.

6.2 Mosaic plots

Mosaic is a rectangle tile which is divided first into horizontal tiles whose widths are proportional to the probabilities associated with first categorical variable i.e. gender here. Then each of the two tiles are split vertically into smaller tiles that are proportional to the conditional probabilities of the second categorical variable i.e. observed items on all the exogenous and outcome variables. Column widths show the marginal proportions of gender. The heights of the tiles show the conditional frequency of each question item given gender. The area of each tile is proportional to cell frequency. Mosaic plots, thus, show the standardized residuals of a log linear model of the counts from by the colour and outline of the tiles. To interpret the association between gender and each of the observed items measuring variables of interest, the pattern of positive (Blue colour and solid lines) and negative (Red colour and broken lines) residuals are taken into account. The blue tiles (positive residuals) show cells whose observed frequency is substantially greater than would be expected under independence; the red tiles (negative residuals) indicate cells which occur less often than under independence.

6.3 Fitting models of independence

Mosaic displays for categorical data generalizes readily to multi-way tables. In the two-way case, Mosaic plots show independence when the tiles in each row align vertically, but visual assessment of other (multi-variate) models is more difficult. Therefore, the two-way plots are used to assess the association between gender and variables of interest.

6.3.1 Perceived work demands

In the Employee Survey, psychological work demands are measured using three items: required to work very hard, not enough time to get the work done, and worrying about work outside working hours. The Mosaic plot (Figure 6.1) is used as a graphical display to examine the relationship between gender and responses to items for work demands. Mosaic plots are used to assess that 'gender' and 'work demands' are independent in the population from which this sample was drawn. A majority of employees feel that their jobs require them to work very hard. However, relatively few employees have reported that they never had enough time to get their work done or they worry a lot about their work out side working hours.

The tiles shaded deep blue correspond to the cells, (women, strongly agree to work hard), (men, neutral response to work hard) and (men, strongly disagree for worry about work outside working hours), whose residuals are greater than +4, indicating much greater frequency in these cells than would be found if 'gender' and 'work demands' were independent. The tiles shaded deep red, (females, neutral for hard work), (male, strongly agree for work hard), and (females, strongly disagree for worry about work outside working hours), corresponds to the residuals less than -4, indicating this combination is extremely rare under the hypothesis of independence.

Mosaic plots showed no significant association between gender and 'perceived work demands'. However, more women have strongly agreed that they have to work very hard and more men have strongly disagreed that they worry about their work outside work hours than would be expected (under independence).

Figure 6.1: Mosaic plot for the association between gender and psychological work demands
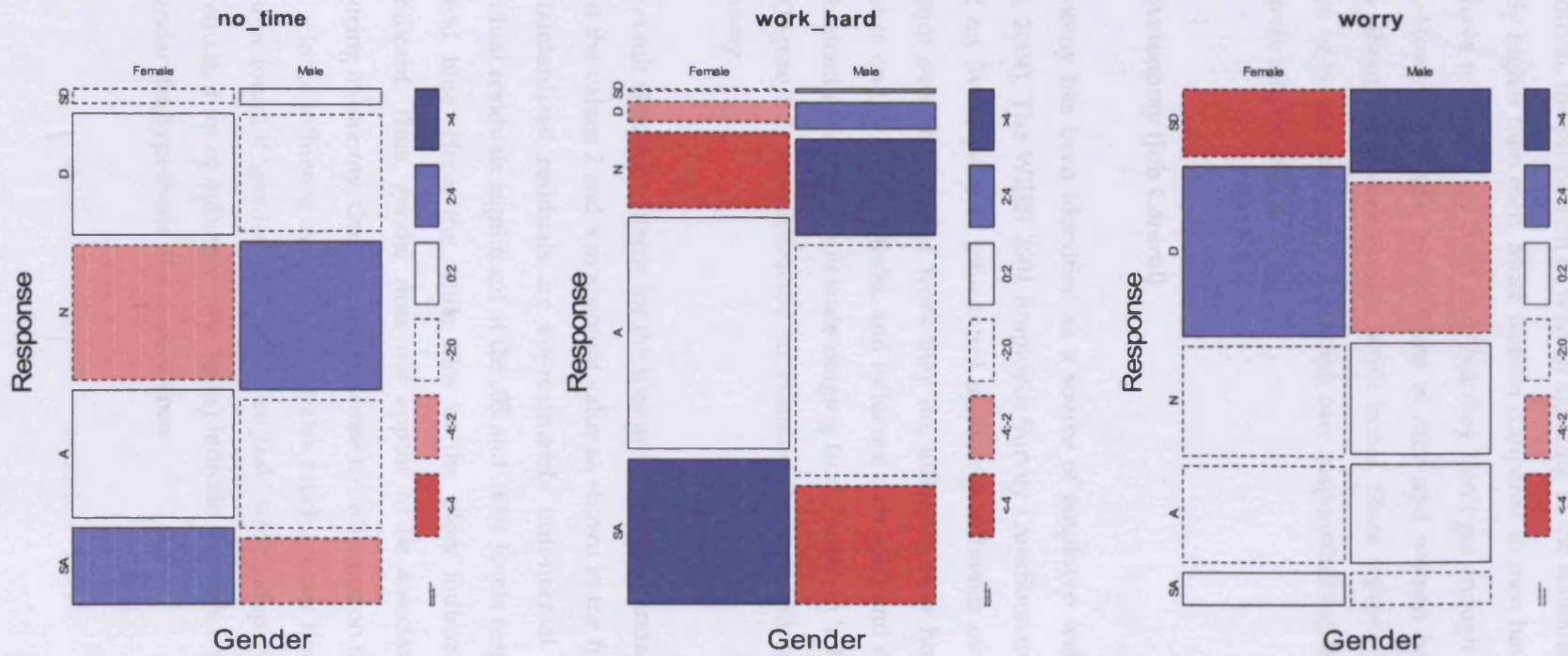
All employees in workplaces with 5 or more employees
Figures are based on responses from 22,091 (work very hard), 21873 (no time), and 21763 (worry a lot) employees.
SD = strongly disagree, D = disagree, N = neutral, A = agree, SA = strongly agree.

In addition, the proportion of women agreeing to the statements of work intensity is slightly higher than men. More women compared to men have strongly agreed that they have to work very hard and that they don't get enough time to get their work done. However, similar proportions of men and women have reported that they worry about their work outside work hours. Since women have to take a greater burden of house work and dependent care responsibilities, they may perceive their jobs more intense and stressful.
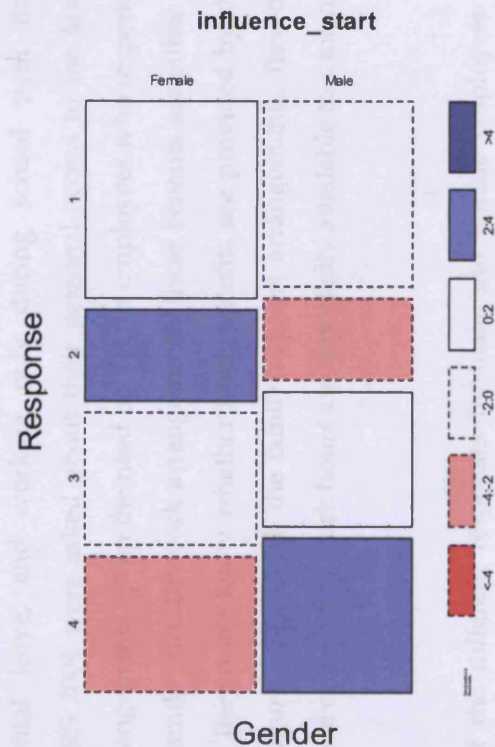
6.3.2 Autonomy (Job Control)

Autonomy has been identified as a source of employee wellbeing (Karasek, 1979; Budd, 2004). The WERS 2004 Employee Survey Questionnaire measures autonomy based on five aspects of job control including: influence over tasks they perform, influence over the pace of work they do, influence over how they perform tasks, influence on the order of tasks, and influence over start and ending time. Responses are obtained on a four point scale ranging from 'none' to 'a lot'. A two-way mosaic plot (Figure 6.2) is constructed to examine the association between gender and autonomy.

The default shading patterns for the tiles are based on standardized residuals which exceed the values 2 and 4 in absolute value as shown in the figure (Figure 6.2). Since the standardized residuals are approximately unit-normal values, the cells with individual residuals significant at the .05 and .0001 levels respectively are shaded in red and blue. Here, the white tiles in the plots indicate residuals which are insignificant. Thus, gender does not appear to be associated with all the items measuring autonomy. Only for the response to 'influence on tasks', the deep blue tile (men, a lot of influence over tasks) indicates much greater frequency in this cell than would be found if 'gender' and 'influence_task' were independent. Similarly, the red tile (female, a lot of influence over tasks) indicate that this combination is extremely rare under the hypothesis of independence.

Figure 6.2: Mosaic plot for the association between gender and autonomy

influence_order   influence_start
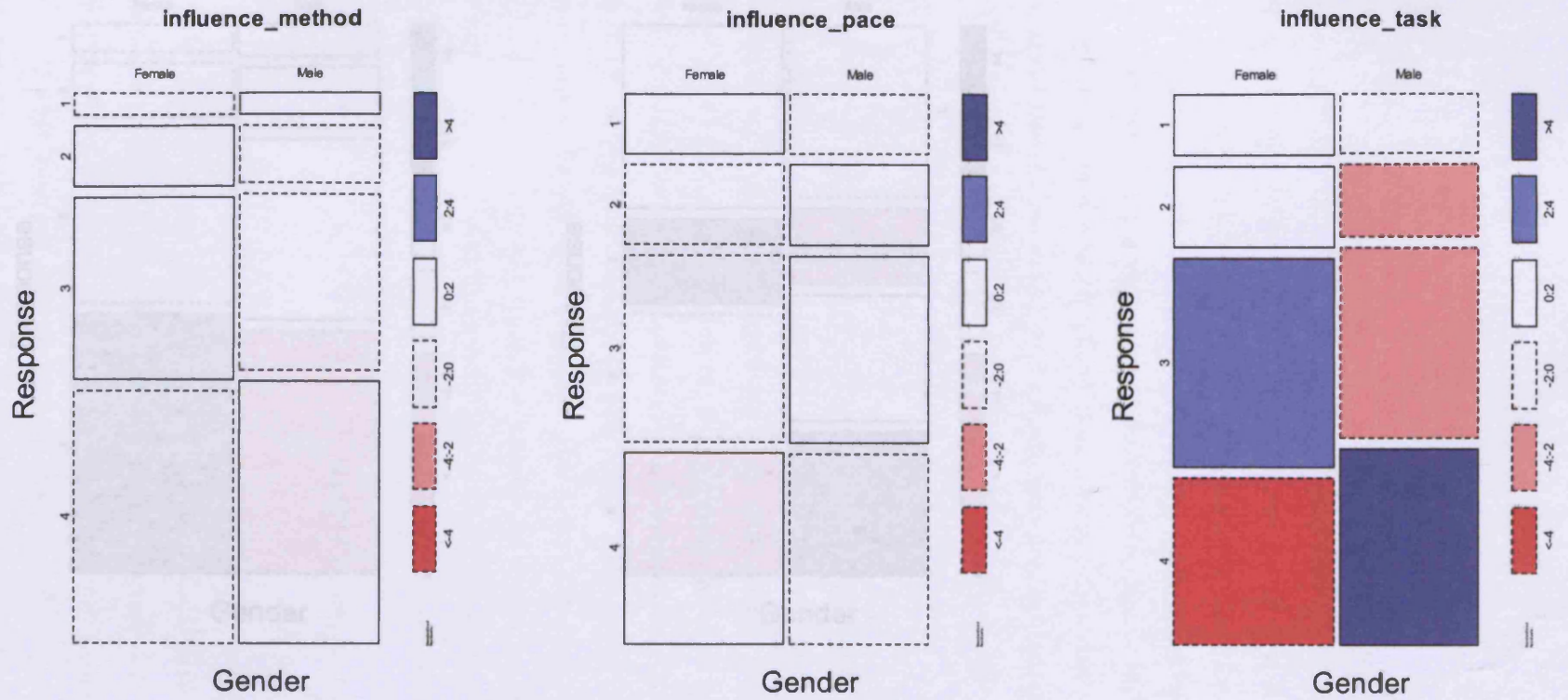
Figures are based on responses from 22087 (influence tasks), 21943 (pace of work), 22006 (how to do work), 21949 (order of tasks), and 21915 (start or finish work) employees.
Note: 1= none, 2 = a little, 3 = some, 4 = a lot.

Summarizing, employees have reported the highest influence on how they do their work (i.e. method) and the order in which they carry out their tasks. Employees have reported a lower influence on the start and finish time for their jobs. Male employees have reported greater influence over the tasks they do and the start and finish time; while women have reported higher influence over the order in which they carry out tasks. Gender is not associated with autonomy.

6.3.3 Perceptions of family support

Ten family supportive provisions are considered including seven flexible arrangements (flexi-time, ability to increase work hours, ability to decrease work hours, ability to work at or from home) and three dependent care benefits (workplace nursery, paid parental leave, and working only during school term time). Respondents in WERS 2004 were asked about their personal access to the family friendly working arrangements, given the need be. Of the employees who responded to the questions of family friendly work arrangements, these benefits are either not available to them or they don't know whether these benefits are provided by their employers or not (Figure 6.3a). Of all the family support arrangements, flexi-time and chances to increase or decrease work hours are reportedly available to a majority of employees.

In order to know if the different responses by male and female employees for perceived family support are statistically significant or not, two-way mosaic plots are constructed. Figure 6.3b, a mosaic plot, shows the association between gender and the availability of family support arrangements. The cells with individual residuals significant at the 0.0001 levels are shaded in deep red and deep blue. The tiles with individual residuals significant at 0.05 levels are shaded in light red and light blue. Here, the white tiles in the plots indicate residuals which are insignificant. Thus, gender appears to be associated with all the items measuring perceived family support except 'paid parental leave'.

Figure 6.3a: Response to 'flexible work' and 'family care' arrangements
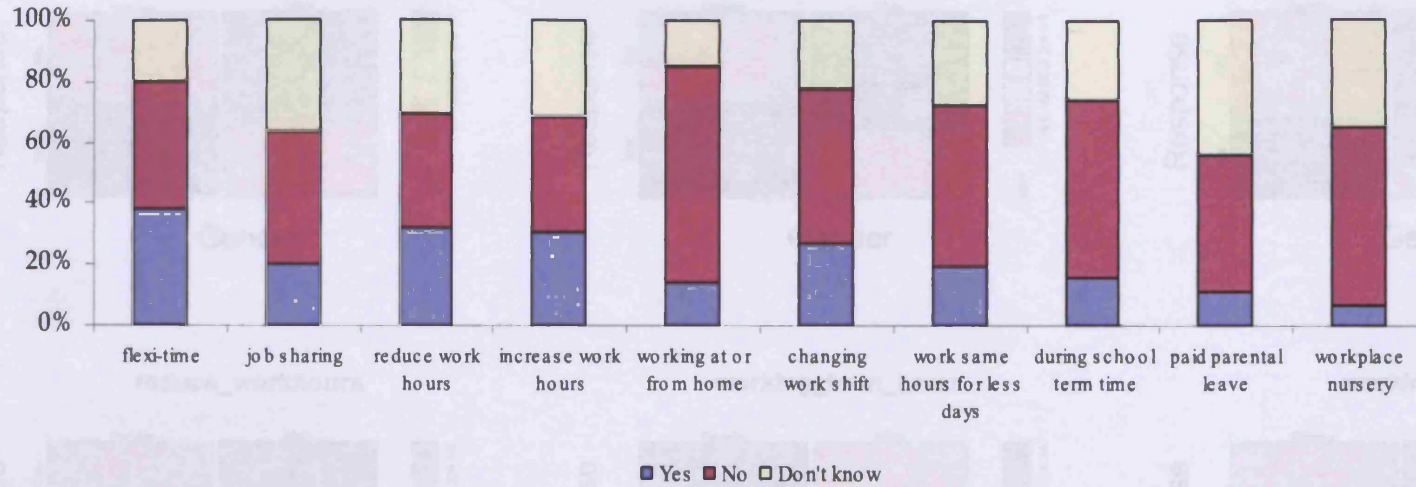
Base: all employees from workplaces with 5 or more employees
Figures (percentages) are based on responses from 22116 (flexi-time), 22079 (job sharing), 22090 (reduce work hours), 21737 (increase work hours), 22127 (working at or from home), 22118 (changing shifts), 22123 (same hours in less days), 21672 (work in school term time), 21399 (paid parental leave) and 21359 (workplace nursery) employees.

Figure 6.3b: Mosaic plot for the association between gender and perceived family support

paid_parental_leave

same_hours_fewdays

school_term_time

workplace_nursery
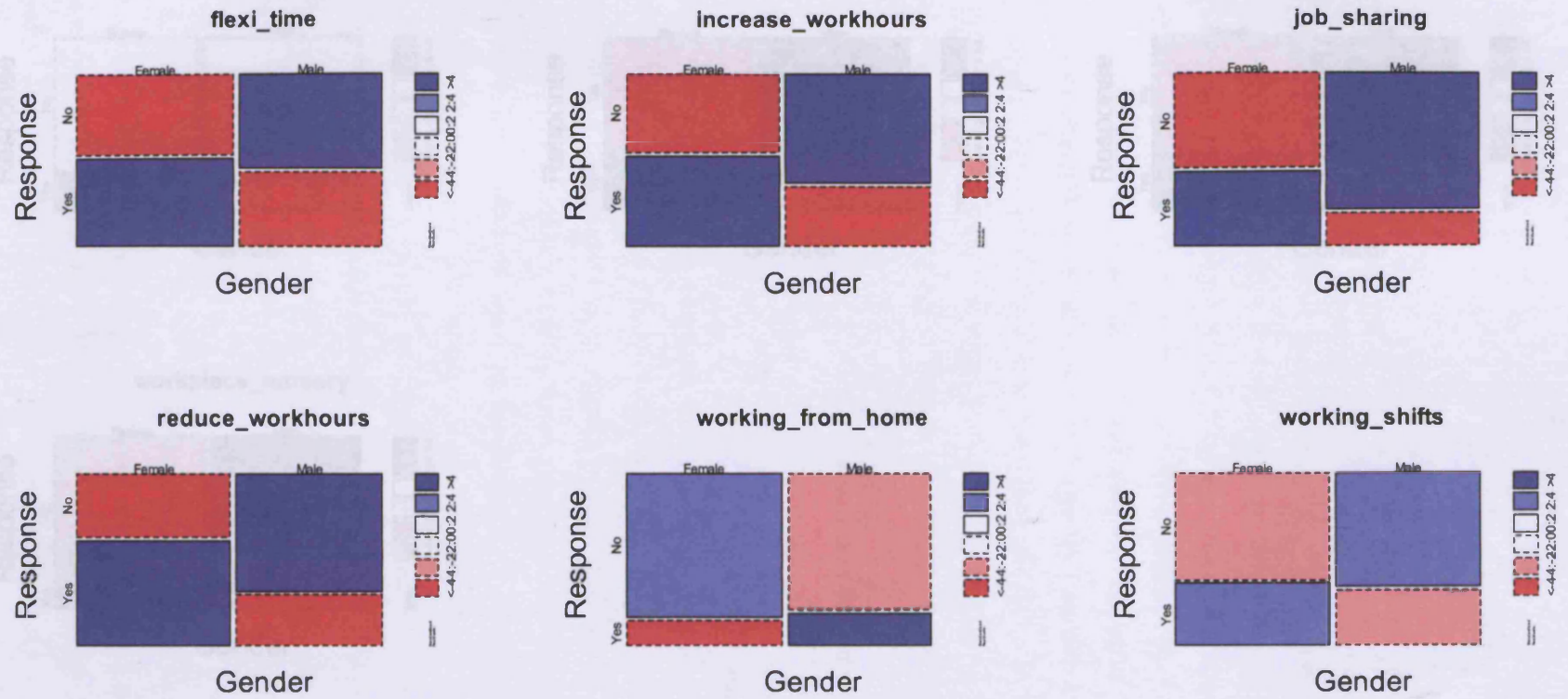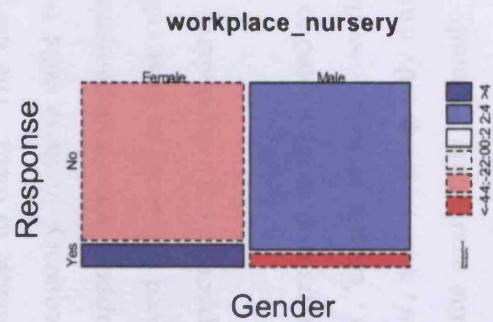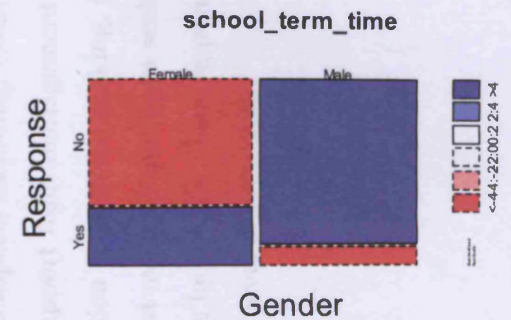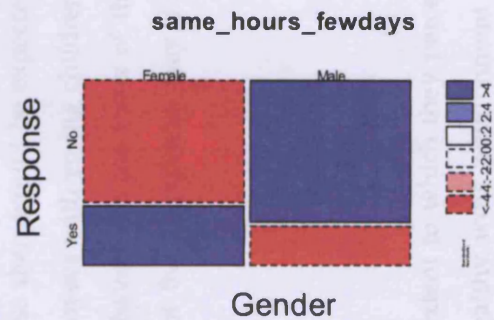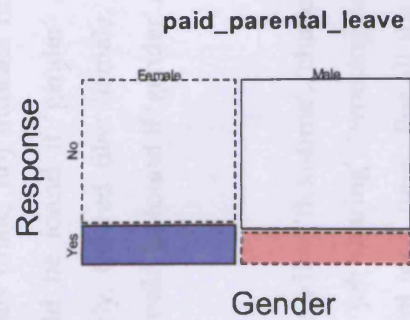
Figures are based on responses from 17550 (flexi-time), 14026 (job sharing), 15304 (reduce work hours), 14854 (increase work hours), 18690 (working at or from home), 17122 (changing shifts), 15880 (same hours in less days), 15917 (work in school term time), 11989 (paid parental leave) and 13745 (workplace nursery) employees.

The size of the tiles indicate that majority of employees have reported that these benefits are not available to them. The deep blue tiles (male, no) indicate much greater observed frequency in these cells than would be found if 'gender' and 'perceived family support' were independent. Similarly, the red tiles (female, no) indicate lower observed frequency in these cells than would be found if 'gender' and 'perceived family support' were independent.

Gender appears to be more strongly related to items including 'flexi-time', 'chance to increase work hours', 'chance to reduce work hours', 'job sharing', 'working same hours for fewer days', and 'working only during school term time'. For all the ten items pertaining to the availability of family support in workplaces, more women have reported the availability of family support than would be expected under independence. However, actual numbers of male employees who reported the availability of family support in their workplaces is less than would be expected if 'gender' and 'family support' were independent. Employees with young children or other caring responsibilities and particularly women have been the focus of these policies. Thus, perceptions of family supportiveness of the workplaces may differ based on employees' gender.

6.3.4 Perceptions of managerial support

This section examines employees' perceptions of the extent to which they perceive that their management is supportive in creating a healthy work environment for employees where they can grow professionally and develop their skills. Employees' views of their management are assessed on four broad aspects including: extent to which employees trust their management, perceive support from management for personal development, perceive support for participation in decision making, and communication by management. Employees were asked multiple questions seeking their views on the management approach on each of the four areas. These responses, therefore, can be examined in relation to the substantive level of provision.

Figure 6.4: Mosaic plot for the association between gender and trust
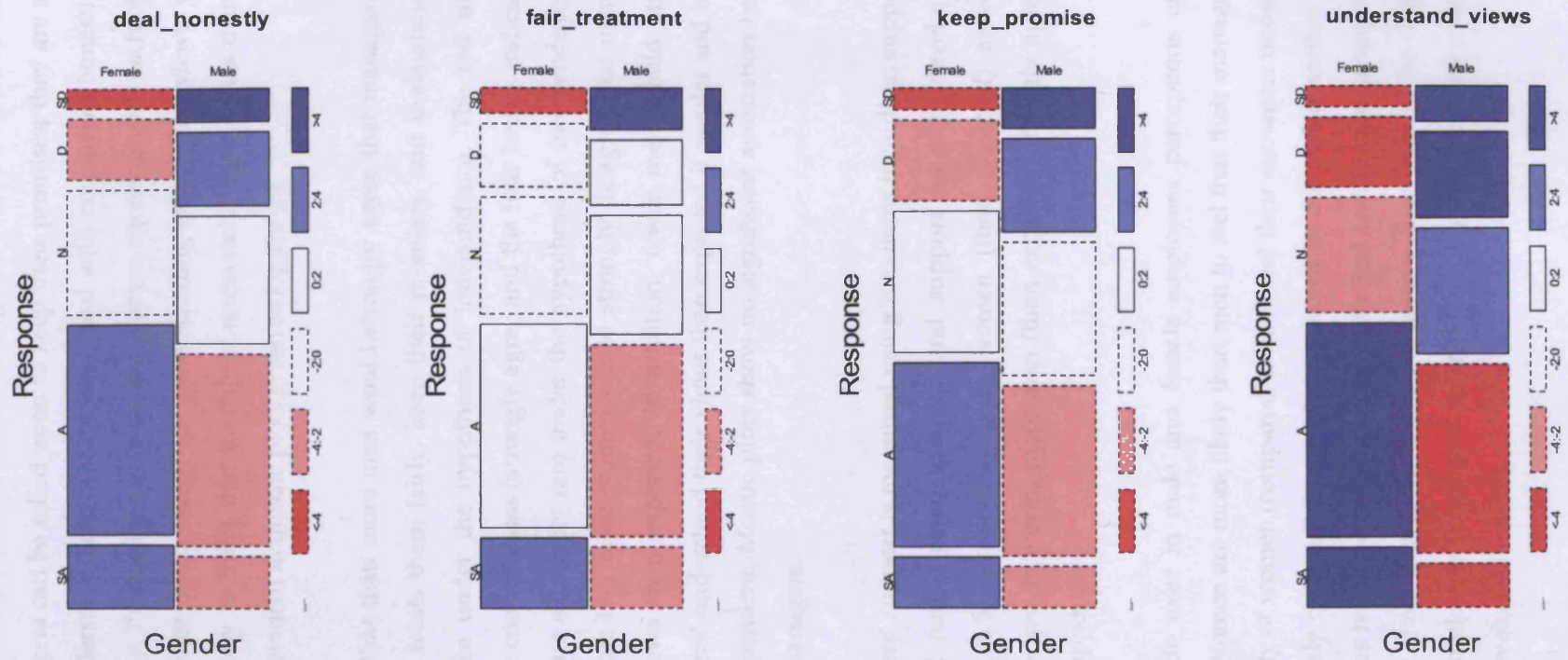
Note: Figures are based on responses from 21516 (keep promises), 21717 (views), 21593 (honestly), and 21788 (treat fairly) employees.

SD= strongly disagree, d = disagree, N= neutral, A= agree, SA= strongly agree.

Employees trust on management is measured using four items in WERS 2004. These items include: managers can be relied upon to keep their promises; they are sincere in attempting to understand employees' views; deal with employees honestly; and treat employees fairly. Proportions of men and women agreeing with each of these statements do not differ much except for understanding employees' views, where, women are more likely to think that managers understand their views than men. This pattern is more evident in mosaic plots given in Figure 6.4.

Figure 6.4 indicates that than more men would strongly agree that managers' deal with them honestly, treats them fairly, keep their promises, and understand their views than would be under the hypothesis of independence. The red tiles for females, for the same combinations (strongly agree and the four items), indicate that these combinations are extremely rare under the hypothesis of independence. It is also interesting to note that more women would strongly disagree that managers' understand their views than expected. In addition, fewer men would strongly disagree that managers' understand their views than expected if gender and trust in managers were independent. Mosaic plots show no significant association between gender and trust in managers.

Managers'/supervisors' support is measured using two items including: support for balancing work and family responsibilities, and support for skill development. Mosaic plot (Figure 6.5) shows that more women (than expected) agree that managers' are supportive; however, more men (than expected) strongly agree that their managers are supportive.

Gender differences do exist in male and female employees perceptions of their managers' support. Women are more likely than men to feel that their managers are supportive. A majority of women (compared to men) feel their managers understand their having the family responsibilities. Also we noted in the earlier section (6.3.3) that female employees had greater access to flexible and family care arrangements, hence, they perceive their managers' more supportive than men. Also a greater number of female employees (compared to male employees) feel their managers encourage them to develop their skills.

Figure 6.5: Mosaic plot for the association between gender and general support
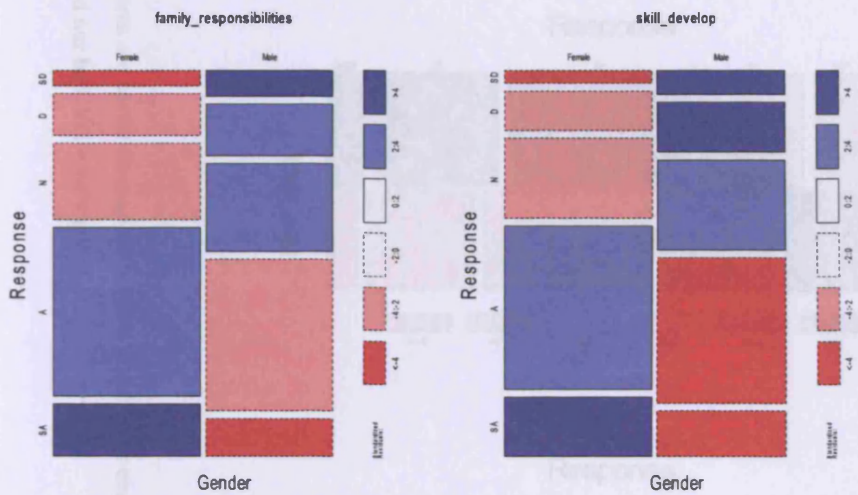
Note: Figures are based on responses from 21440 (family responsibility), 21707 (encourage skills), and 21997 (relations) employees. SD= strongly disagree, D= disagree, N= neither, A= agree, SA= strongly agree.

To determine the employees' perception of their participation in workplace decision making, they are asked to rate how good they think managers are at: seeking employee views; responding to suggestions; and allowing employees to influence final decision. The association between gender and employees involvement in decision making is examined using mosaic plots (Figure 6.6). Once again, in common with two previous areas of trust and support, gender differences do exist here as well. Mosaic plot (Figure 6.6) shows that more women (than expected) reported that managers are good at responding to their suggestions, however more men (than expected) reported that managers are poor in doing so. And these differences are statistically significant. Women generally have better views on management support for participation in decision making.

In order to explore employees views of the nature of communication between managers and employees; employees are asked to rate how good managers are at keeping them informed about changes at workplaces. These changes include: the way organization is being run, staffing changes, changes in the way the job is done, and financial matters of the organization (Figure 6.7).

177

Figure 6.6: Mosaic plot for the association between gender and participation
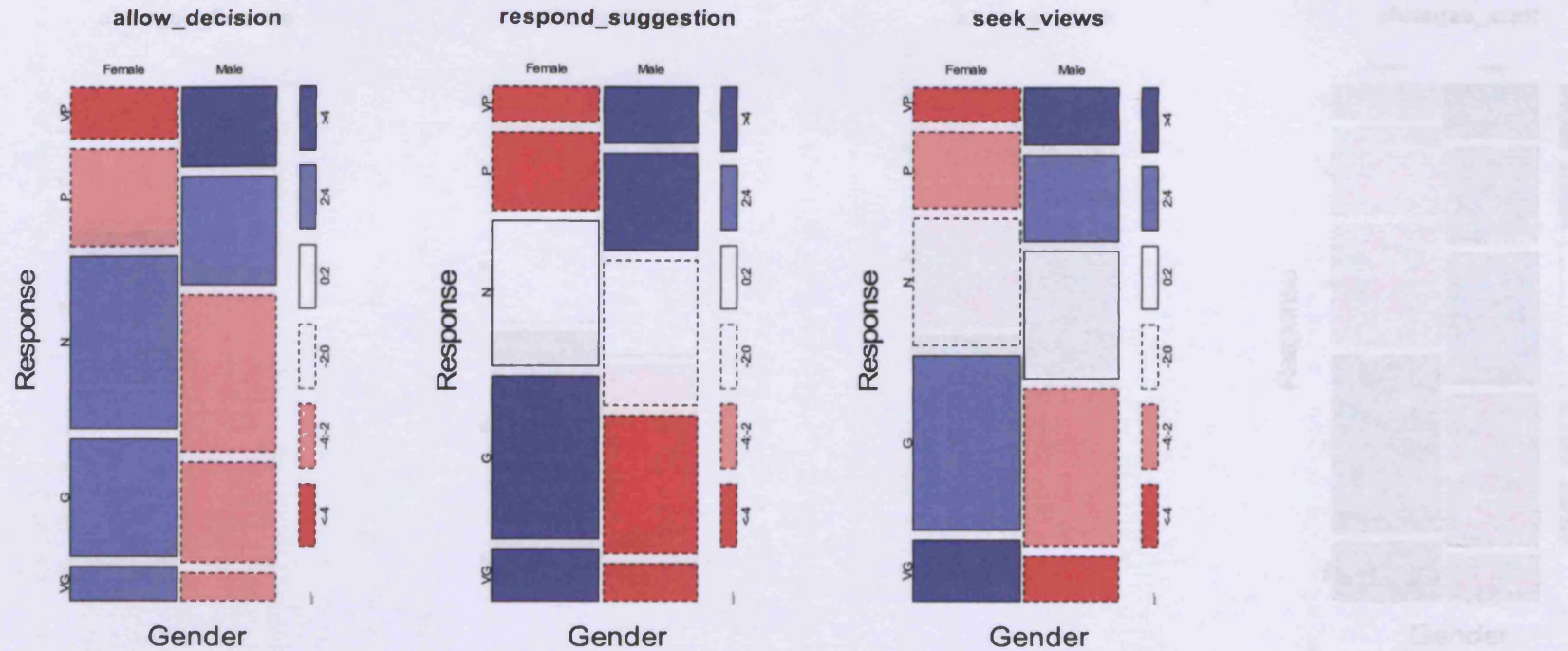
Figures are based on responses from 21687 (seek employee views), 21258 (response to suggestions), and 20065 (influence decisions) employees. VP = very poor, N = neither good nor bad, VG = very good

Figure 6.7: Mosaic plot for the association between gender and communication
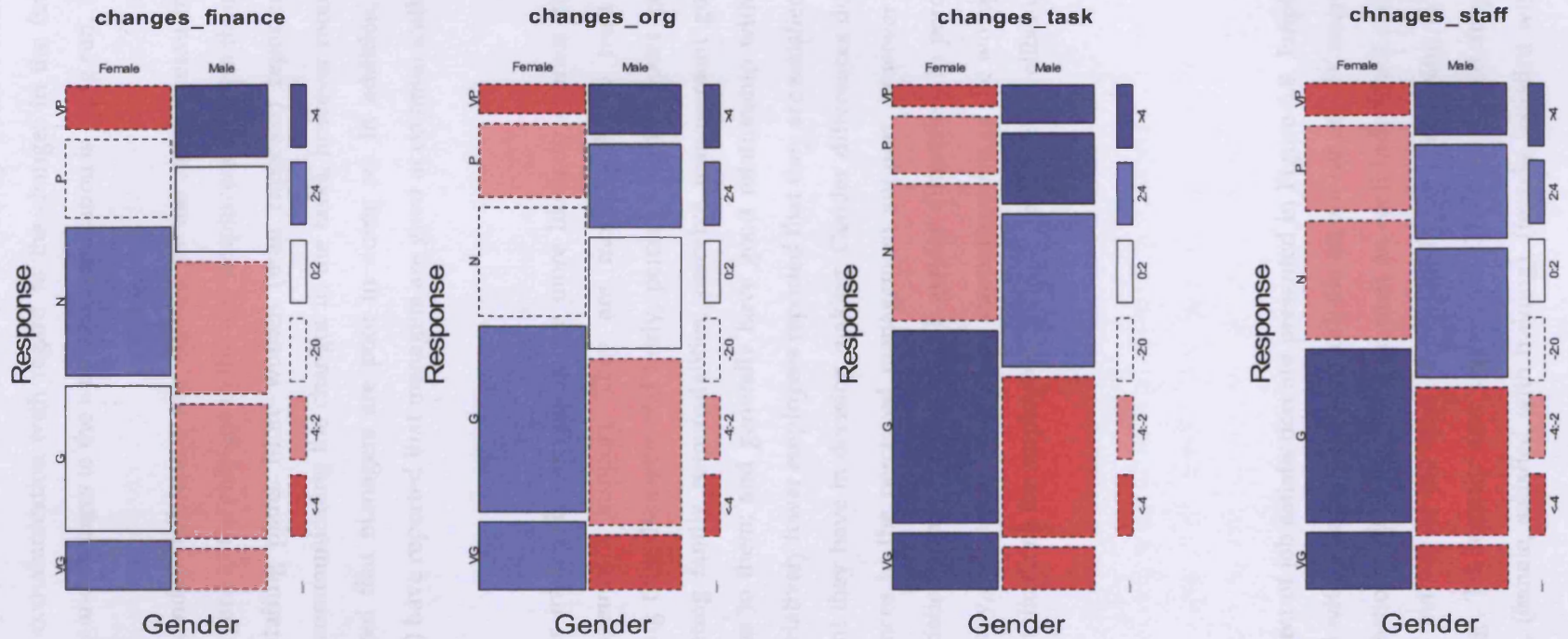
Figures (percentages) are based on responses from 21934 (changes in organization), 21764 (changes in staffing), 21785 (changes in tasks), and 20675 (financial matters) employees. VP = very poor, N = neither good nor poor, VG – very good.

Mosaic plot (Figure 6.7) shows that male and female employees hold somewhat similar perceptions of communication with regard to the changes in the financial matters of the company and changes to the way the organization is being run.

On the other hand, gender differences are evident in the items measuring the communication with regard to the changes in the way employees perform their tasks and changes in the staffing plans. More women (than expected) reported that managers are good at communicating the changes in the tasks, however more men (than expected) reported that managers are poor in doing so. In addition, more women (than expected) have reported that managers are good at communicating the changes in the staffing.

Most of the employees in British workplaces are more likely to express positive views of their management's support. They are more likely to trust their management for treating them honestly and fairly; perceive high support for skill development and meeting family responsibilities; perceive management good at communicating changes to them; and generally have good relationship with their managers. However, relatively fewer employees reported that they are satisfied with the level of involvement they have in decision making. Gender differences do exist with regard to differences in the perceived management support, however these differences are not statistically significant. Overall, gender differences in perceived work demands, autonomy, managerial and family supportiveness of the workplaces may have important implications for employees' attitudes, perceived wellbeing and behaviour.

6.3.5 Job satisfaction

The results of each aspect of job satisfaction are presented in Figure 6.8. Employees seem generally satisfied with all aspect of their work life except for pay. Women have expressed higher satisfaction with their jobs than men on each individual measure. Gender differences are evident in the level of job satisfaction pertaining to three items including 'training', 'job security' and 'work itself'. The tiles shaded deep blue correspond to the cells, (female, satisfied with training), (female, satisfied with job

security), and (female, very satisfied with work itself) whose residuals are greater than +4, indicating much greater frequency in these cells than would be found if 'gender' and 'job satisfaction' were independent. The tiles shaded deep red, (males, satisfied with training), (male, satisfied with job security), and (male, very satisfied with work itself) corresponds to the residuals less than -4, indicating this combination is extremely rare under the hypothesis of independence.

6.3.6 Organization commitment

Employees' commitment with the goals and values of their organization is measured in WERS 2004 by asking them the extent to which they agree or disagree with three statements. These statements are: I share values of my organization; I feel loyal to my organization; and I feel proud to tell people who I work for. Across employees as a whole, majority of them are in agreement with these items. Highest agreements are for 'having a sense of loyalty' followed by 'proud to tell others who I work for' (Figure 6.9).

Though both men and women have shown strong commitment towards their employing organization, women are more likely to express higher loyalty than men towards their employing organization (Figure 6.9). Mosaic plot (Figure 6.9) shows the association between 'gender' and the three items measuring 'organization commitment'. Looking at the area of the tiles, it seems that the majority of employees (both male and female) have agreed that they are loyal to their organization, feel proud to tell other people who they work for, and share the same values with their organization. The actual frequency of women agreeing to three statements is much more than would be expected if 'gender' and 'organization commitment' were independent. However, fewer male employees have agreed to the three statements than expected under independence.

181

Figure 6.8: Mosaic plot for the association between gender and job satisfaction
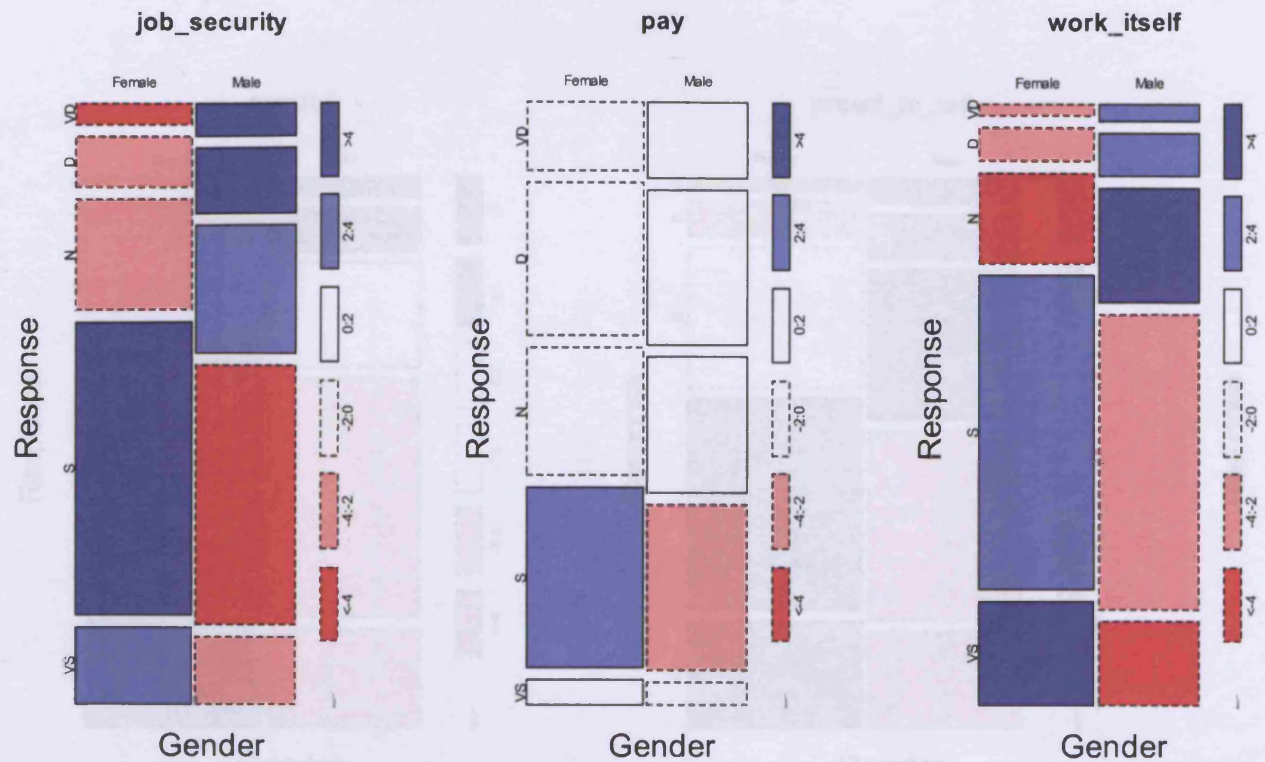
Figures are based on responses from 22223 (achievement), 22145 (initiative), 22020 (influence), 22000 (training), 22146 (pay), 21798 (job security), and 22166 (work itself) employees. VD = very dissatisfied, D = dissatisfied, N = neither , S = satisfied, VS = very satisfied.

Figure 6.9: Mosaic plot for the association between gender and organization commitment
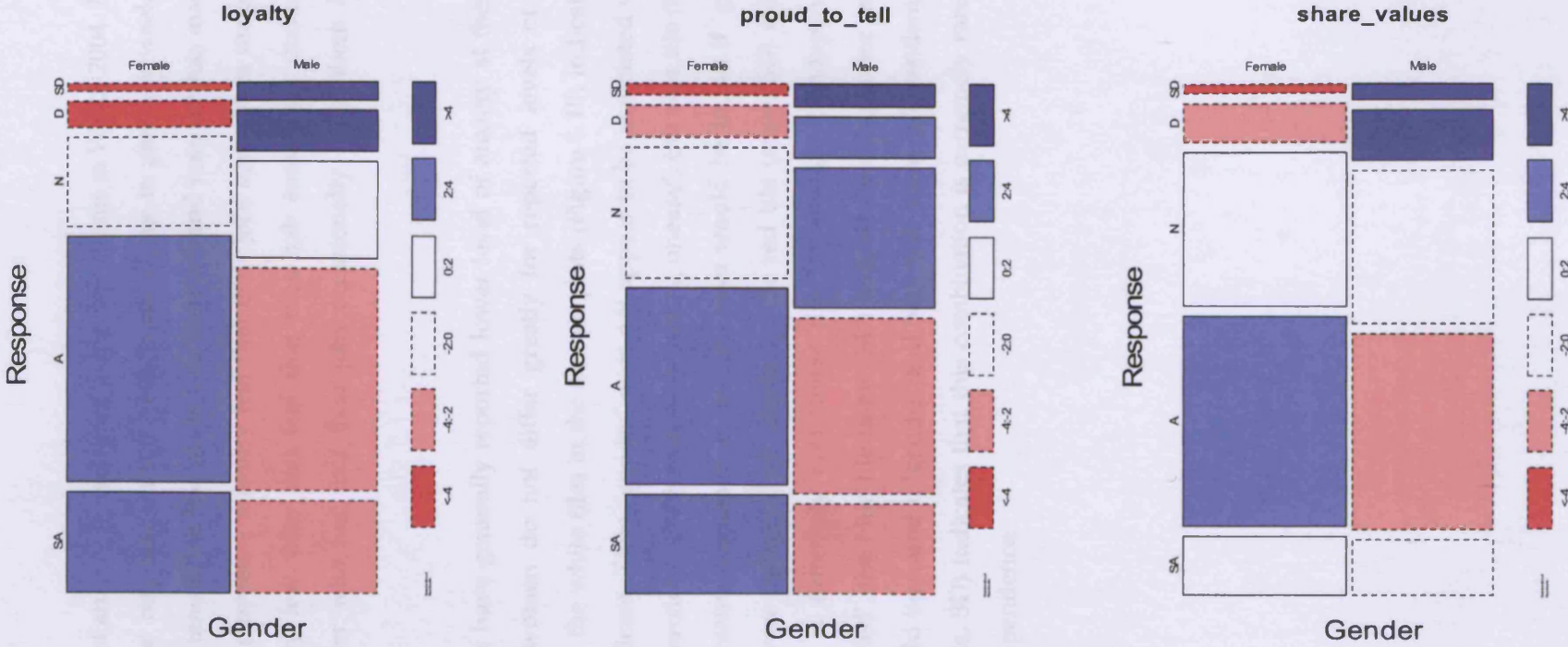
Figures are based on responses from 21452 (share values), 21976 (loyalty), and 21994 (proud) employees. SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree.

6.3.7 Anxiety

Employees' level of anxiety is measured using three items in WERS 2004. These items include employees' response on three emotional states: in past few weeks has your job made you feel tensed; job has made you worried, and your job has made you feel uneasy. Of all employees, a majority feel that their jobs sometimes make them feel tense, followed by few who that feel that their job sometimes make them feel worried, and fewer who feel that their jobs occasionally make them feel uneasy (Figure 6.10).

Where, employees have generally reported lower level of anxiety at their places of work; men and women do not differ greatly for reported levels of anxiety in workplaces. Here, the white tiles in the mosaic plots (Figure 6.10) indicate residuals which are insignificant. Thus, 'gender' does not appear to be associated with all the items measuring 'anxiety'. For response to 'feeling uneasy', the blue tile (female, SD) indicates much greater frequency in this cell than would be found if 'gender' and 'feeling uneasy' were independent. Similarly, the red tile (male, SD) indicates that this combination is extremely rare under the hypothesis of independence. For response to 'worried', the blue tile (male, SD) indicates much greater frequency in this cell than would be found if 'gender' and 'worried' were independent. Similarly, the red tile (female, SD) indicates that this combination is extremely rare under the hypothesis of independence.

Figure 6.10: Mosaic plot for the association between gender and anxiety
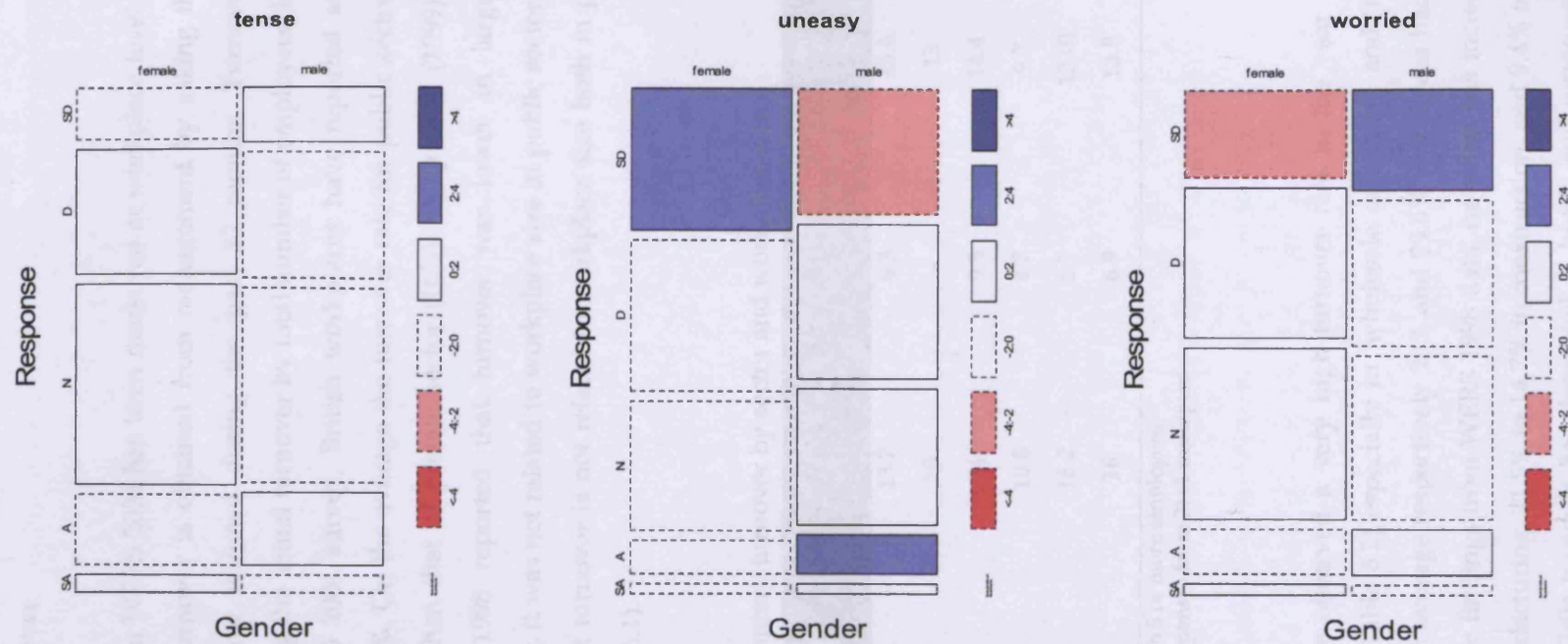
Figures are based on responses from 22121 (tensed), 22064 (worried), and 22027 (uneasy) employees. SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, and SA = strongly agree.

6.3.8 Voluntary turnover

Voluntary turnover in WERS 2004 has been measured at workplace level. Objective data on voluntary turnover is obtained from management by asking them: how many employees have resigned during the past 12 months. Turnover rate is computed by dividing the actual turnover by total number of employees. In the year preceding the WERS 2004 survey, British workplaces have reported an average turnover rate of 13.8%. On the average the turnover rate for public sector (6.9%) is substantially lower than that of private sector (16%). Cully et al (1999) from the findings of WERS 1998 reported that turnover was lower in larger private workplaces; however, it was not related to workplace size in public sector. Contrary to this we found that turnover is not related to workplace size both in public and private sector (Table 6.1).

Table 6.1: Rate of voluntary turnover by sector and workplace size

Workplace size	Private sector	Public sector	Total
less than 50	13.7	6.3	13.4
50 _ 99	13	-	13
100 _ 249	14	9.3	14.4
250 _ 499	10.8	4.7	9.7
500 and more	16.2	6.7	13.01
Total	16	6.9	13.8

Base: all workplaces with 5 or more employees
Figures are based on responses from 2141 managers

Some industries have observed a very high turnover rate in the year preceding WERS 2004 survey (Table 6.2) especially in 'wholesale and retail' and 'hotels and restaurants' where on average respectively 20% and 29.5% employees had left their jobs. Compared to the findings from WERS 1998 data, turnover has increased from 11.4% to 14% in manufacturing, 11.5% to 14.7% in construction, and 9.4% to 11.7% in financial services. While turnover has decreased in hotels and restaurants, public administration, health and other community services.

Table 6.2: Turnover rate by industry and sector of employment

Industry	Private sector	Public sector	All workplaces	WERS 1998*
Manufacturing	14.1	7.4	14	11.4
Electricity, gas and water	4.2	16	5	4.6
Construction	15.7	3.9	14.7	11.5
Wholesale and retail	20.2	-	20.2	19.4
Hotels and restaurants	29.7	17.2	29.5	38.4
Transport and communication	12.3	6.3	10.8	10.6
Financial services	11.7	-	11.7	9.4
Other business services	14	8	13.8	13.4
Public administration	9.5	4.6	4.8	6.9
Education	9.4	6.6	7.4	7.7
Health	16.2	8.9	12.3	16.6
Other community services	17.5	5.7	14.3	18.0

Base: all workplaces with 5 or more employees
Figures are based on responses from 2141 managers
* Findings from Cully et al (1999).

These findings have clearly revealed that workplace size showed no significant impact on turnover; however, turnover varies significantly across sectors of employment and industries. Turnover is significantly lower in public sector workplaces compared to private sector. Also, public sector establishments are female dominant. Family friendly work arrangements are more common in public sector than in private sector workplaces due to more number of women in public sector. Women are more likely to express positive views of the managerial and family supportiveness. Women have also reported higher level of psychological work demands and low autonomy. In addition, women are more likely to report positive job attitudes. Men and women, however, do not differ on the level of perceived anxiety. How high perceived work demands, low autonomy, high managerial and family support as perceived by female employees affect their wellbeing (anxiety), job attitudes, and turnover? Do these relationships differ for male employees or not? To answer these research questions, relationships are tested using structural equation modeling in the following chapter (Chapter 7). Though, findings from exploratory data analysis reported above have demonstrated some support for the relationships

(at individual level) hypothesized in the research model; however, the model will be tested using structural equations modeling technique.

Concluding remarks

Summarizing, EDA has revealed some support for the hypothesized relationships. The responses to all the items do not differ across male and female employees. These results indicate that some of the hypothesized paths in the proposed model may not differ for male and female employees. The results of hypothesis testing are presented in the next chapter.

Chapter 7

Structural Equation Modelling

7.1 Introduction

The objective of the present chapter is to present the multi-variate analysis of data using the structural equation modelling technique both at individual and workplace level. For this purpose, the MPlus software package is used. This chapter is organized into three parts. The first part entails preparation of data for final model testing using SEM. This part includes data screening, an exploratory factor analysis for data reduction, an assessment of the reliability of the research instrument both at individual (Cronbach alpha) and workplace level (intra-class correlations). The second part presents the analysis of data at the individual level. Confirmatory factor analysis is used to determine the validity of the measurements. SEM is used to test hypothesized relationships at individual level of analysis. Multi-group comparisons based on employees' gender have been conducted. The third part of this chapter presents the analysis of data at workplace level. First a baseline model is determined followed by testing the hypothesized links between independent and outcomes variables. Secondly, the indirect effects are examined. Lastly, the moderating effects of sector of employment in the sampled workplaces are examined through multi-group analysis.

Part 1: Preliminary Analysis of Data

Preliminary analysis entails preparing data for individual level analysis. The data preparation is carried out in four phases. In the first phase, individual level data is examined for missing values, outliers and normality. In the second phase, exploratory factor analysis of the items comprising work environment characteristics is done for data reduction. The third phase then deals with establishing the internal consistency of scale items. In the fourth phase, data is tested for the evidence supporting the establishment (aggregate) level analysis. Each of these phases is discussed in the following sections (from section 7.2 through to section 7.5).

7.2 Data screening

Before the data file is subject to analysis, the data is carefully screened for normality, outliers, and missing values. Each of these problems is considered in the following subsections.

7.2.1 Missing data

The amount of missing data for each individual item is given in Table 7.1 and 7.2. Table 7.1 also contain the reasons for, frequency and percentage of missing data for all the included items. The missing data is small (less than 5%) for all the items except for the items measuring the availability of flexible work arrangements (flex1,..., flex7) and family care benefits (fams1,..., fams3) where 16-46% values are missing because employees don't know about them (Table 7.2).

7.2.2 Outliers

A number of cases in the data set are spotted as outliers i.e. fall outside the limits (Q1 - 1.5 IQR, Q1 + 1.5 IQR). As outliers usually indicate an important range of the data, therefore, it is decided to keep them a part of final analysis.

7.2.3 Normality

As discussed in chapter 6, two statistical characteristics are used to describe non-normality i.e. skewness and kurtosis (Hair et al, 1998; Tabachnick and Fidell, 2001). Table 7.1 shows that all the individual scale items for continuous variables have skewness and kurtosis within ± 2 range.

For dichotomous variables a different assessment procedure is applied to determine whether or not they are normal (Table 7.2). All the items measured on a dichotomous scale in this study are within the normal range except for one item measuring family support benefits: 'workplace nursery or help with childcare costs' (Fam3). 'Fam3' has an extremely uneven split (i.e. 90-10 split). Hence 'fam3', measuring family support benefits, is removed from further analysis.

Table 7.1: Descriptive statistics for scale items at individual level

| Scale items | N | Missing (%) | Reason for Missingness | | Response Scale | | Mean | Std. Deviation | Skewness | Kurtosis |
			Don't know	Not answered	Lower	Upper				
PWD1	22091	360 (1.6)	49	305	1	5	3.98	0.84	-0.69	0.35
PWD2	21873	578 (2.6)	100	470	1	5	3.25	1.09	0.04	-0.91
PWD3	21763	688 (3.1)	169	518	1	5	2.68	1.16	0.29	-0.84
Auto1	22173	278 (1.2)	84	190	1	4	2.97	0.98	-0.68	-0.55
Auto2	22028	423 (1.9)	127	290	1	4	2.98	0.99	-0.67	-0.61
Auto3	22092	359 (1.6)	91	261	1	4	3.30	0.83	-1.05	0.40
Auto4	22032	419 (1.9)	128	285	1	4	3.26	0.88	-1.05	0.32
Auto5	21998	453 (2.0)	136	312	1	4	2.41	1.21	0.05	-1.55
Comm1	22018	433 (1.9)	310	118	1	5	3.31	1.15	-0.43	-0.66
Comm2	21846	605 (2.7)	431	167	1	5	3.20	1.14	-0.31	-0.74
Comm3	21867	584 (2.6)	398	184	1	5	3.34	1.04	-0.47	-0.29
Comm4	20749	1702 (7.6)	1493	205	1	5	3.08	1.16	-0.25	-0.78
Part1	21754	697 (3.1)	553	143	1	5	3.22	1.15	-0.35	-0.71
Part2	21323	1128 (5.0)	944	182	1	5	3.14	1.12	-0.27	-0.67
Part3	20126	2325 (10.0)	2090	229	1	5	2.87	1.12	-0.06	-0.73
Trust1	21575	876 (3.9)	640	229	1	5	3.25	1.06	-0.36	-0.56
Trust2	21777	674 (3.0)	421	247	1	5	3.36	1.06	-0.51	-0.43
Trust3	21652	799 (3.6)	530	265	1	5	3.41	1.05	-0.53	-0.30
Trust4	21847	604 (2.7)	290	309	1	5	3.42	1.09	-0.57	-0.34
Sups1	21501	950 (4.2)	667	278	1	5	3.46	1.05	-0.65	-0.18
Sups2	21769	682 (3.0)	382	290	1	5	3.51	1.05	-0.62	-0.17
JS 1	22223	228 (1.0)	70	157	1	5	3.76	0.94	-0.90	0.77
JS 2	22145	306 (1.4)	112	192	1	5	3.80	0.93	-0.88	0.70

JS 3	22020	431 (1.9)	193	235	1	5	3.53	0.95	-0.56	0.02
JS 4	22000	451 (2.0)	183	257	1	5	3.31	1.08	-0.47	-0.48
JS 5	22146	305 (1.4)	70	228	1	5	2.86	1.12	-0.10	-1.03
JS 6	21798	653 (2.9)	444	205	1	5	3.56	1.01	-0.80	0.25
JS7	22166	285 (1.3)	69	214	1	5	3.77	0.90	-0.95	1.05
OC1	21515	936 (4.2)	656	279	1	5	3.53	0.91	-0.49	0.15
OC2	22040	411 (1.8)	178	228	1	5	3.79	0.94	-0.85	0.67
OO3	22059	392 (1.7)	162	224	1	5	3.66	1.00	-0.59	0.07
Anx1	22207	244 ()	0	241	1	5	2.73	0.984	0.079	-0.283
Anx2	22146	305 ()	0	298	1	5	2.42	0.990	0.251	-0.400
Anx3	22109	342 ()	0	323	1	5	2.21	1.015	0.497	-0.354
Valid N (listwise)	4434									

Table 7.2: Descriptive statistics for dichotomous scale items

Scale items	N	Missing (%)	Reason for Missing-ness		Response scale		Response split %	
			Don't know	Not answered	Lower	Upper	No	Yes
flex1	17610	4841 (21.6)	4506	325	1	2	51.9	48.1
flex2	14076	8375 (37.3)	8003	364	1	2	68.5	31.5
flex3	15354	7097 (31.6)	6736	357	1	2	53.4	46.6
flex4	14903	7548 (33.6)	6834	708	1	2	55.2	44.8
flex5	18758	3693 (16.4)	3369	320	1	2	83.4	16.6
flex6	17184	5267 (23.5)	4934	330	1	2	65.4	34.6
flex7	15937	6514 (29.0)	6186	323	1	2	72.6	27.4
fams1	15977	6474 (28.8)	5695	769	1	2	79.2	20.8
fams2	12032	10419 (46.4)	9367	1045	1	2	80.6	19.4
fams3	13798	8653 (38.5)	7561	1089	1	2	90.1	9.9

7.3 Exploratory Factor Analysis

The purpose of exploratory factor analysis (EFA) is to confirm whether the items load onto their respective constructs or not. Thus, EFA also provides a measure of convergent validity of the scale items. The work environment characteristics scale consists of thirty items describing specific aspects of work environment. These items represented four a priori constructs i.e. psychological job demands, autonomy, managerial support (Redding, 1972; Likert, 1967), and family support (Thomas and Ganster, 1995; Allen, 2001). Psychological work demands are measured by three items and autonomy is measured by five items. Managerial support measures include 13 items altogether of which four items measure trust, three for participation, four for communication and two items measure supervisor support. In addition, family support includes items on flexibility (seven items) and family care benefits (two items).

However, to determine if these items load onto their respective subscales or not, all items measuring work environment characteristics are factor analysed in SPSS using principal component analysis and oblique rotation. The suitability of data for factor analysis is assessed before conducting principal component analysis using correlation matrix. Correlation matrix revealed many correlations equal to or larger than 0.3, thus, satisfying the first criteria supporting the use of factor analysis.

Table 7.3: Kaiser-Meyer-Olkin and Bartlett's test for suitability of data

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.944
Bartlett's Test of Sphericity	Approx. Chi-Square	89853.901
	Df	435
	Sig.	.000

Results (Table 7.3) reveals that Kaiser- Meyer-Olkin statistic of sampling adequacy is 0.944, well above the recommended value of 0.6 (Kaiser, 1974) and 0.8 (Sharma, 1996; Hair et al, 1998). Bartlett's test of sphericity is also employed in the study to

determine if variables are correlated or not. Bartlett's test is statistically significant (p< 0.05), thus indicating that data do not produce an identity matrix and is suitable for factor analysis.

Principal component analysis extracted a five factor solution with Eigen values greater than 1 (Table 7.4). These factors together accounted for 61.8% of the total variance explained, where first factor alone accounted for 34%, second factor explained 9%, third factor explained 8%, and fourth and fifth factors explained 6% and 4% of variance respectively. However, an inspection of the component matrix revealed that fifth factor only included cross-loaded items and did not reflect anything meaningful. The items that cross-loaded onto the fifth factor were 'flex5' and 'fams1'.

An inspection of a scree plot (Figure 7.1) revealed that the plot becomes smooth after the third component. The plot shows a steep slope for first three factors and a gentle slope for remaining factors. Thus, Components 1, 2, and 3 explain more variance than the other remaining components. As a rule of thumb, those factors have to be retained which lie before the point at which eigen values seem to level off (i.e. from factor 5 and onwards). This indicates that three factors should be retained for further analysis. However, inspection of the component matrix revealed that most of the items loaded onto four factors. In order to decide whether to retain a three factor solution or a four factor solution; both solutions are compared using MPlus software.

Thus, EFA for a three factor solution, four factor solution, and a five factor solution is compared using MPlus and fit indices are reported (Table 7.5) for a comparison. Fit indices for a four factor solution implied an adequate fit to the data as CFI (> 0.95), TLI (> 0.90) and RMSEA (< 0.08) values are within the acceptable criteria. Thus, a four factor solution is considered appropriate to fit the data.

Table 7.4: Kaiser's selection criterion for retaining factors

Component	Initial Eigen-values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.2	33.9	33.9	10.2	34.0	34.0
2	2.8	9.2	43.1	2.8	9.2	43.1
3	2.5	8.4	51.6	2.5	8.4	51.6
4	1.9	6.4	57.9	1.9	6.4	57.9
5	1.2	3.9	61.9	1.2	3.9	61.9
6	1.0	3.3	65.2			
7	0.9	3.1	68.3			
8	0.8	2.7	71.0			
9	0.7	2.4	73.4			
10	0.7	2.3	75.7			
11	0.6	2.2	77.9			
12	0.6	2.0	79.9			
13	0.6	1.9	81.8			
14	0.5	1.8	83.6			
15	0.5	1.7	85.3			
16	0.5	1.6	86.9			
17	0.4	1.4	88.4			
18	0.4	1.4	89.8			
19	0.4	1.3	91.1			
20	0.4	1.3	92.4			
21	0.3	1.2	93.5			
22	0.3	1.2	94.7			
23	0.3	1.0	95.7			
24	0.2	0.8	96.5			
25	0.2	0.7	97.3			
26	0.2	0.7	97.9			
27	0.2	0.6	98.5			
28	0.2	0.5	99.1			
29	0.1	0.5	99.6			
30	0.1	0.4	100.0			

Extraction Method: Principal Component Analysis.

Figure 7.1: Scree Plot

Scree Plot
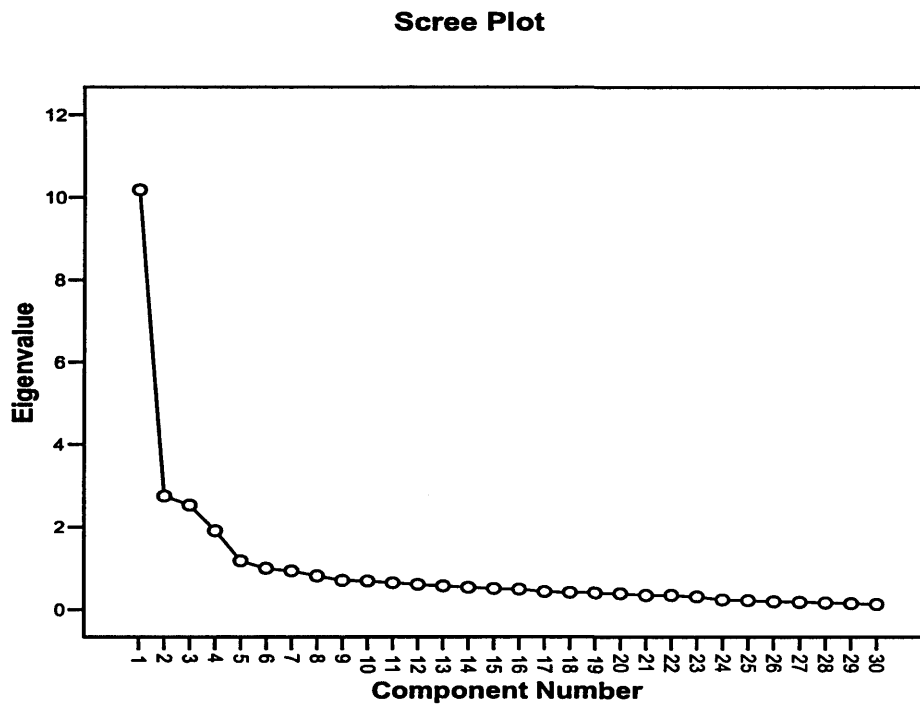
Table 7.5: Comparison of a 3-factor and 4-factor solution

Fit indices	3-factor solution	4-factor solution	5-factor solution
Chi-square (df)	52139.01* (348)	36679.4* (321)	41029.37* (295)
CFI	0.903	0.95	0.916
TLI	0.878	0.933	0.904
RMSEA	0.081	0.061	0.066

* Significant at 0.05 level

Results of GEOMIN rotation are presented in Table 7.6. The default for GEOMIN rotation in MPlus is oblique with an epsilon value of 0.01. GEOMIN rotation is recommended when factor indicators have substantial loadings on more than one factor resulting in a factor complexity greater than 1 (Muthen and Muthen, 2007). The relationship between each variable and a factor is given as a correlation or loading. The results revealed that all of the four components show strong loadings (0.4 and above) and all the items loaded substantially on one of the four factors and did not load substantially on the other construct. The results of this analysis support the proposition that the given thirty indicators of workplace environment characteristics

can be grouped into four constructs namely: 'psychological job demands', 'autonomy' 'managerial support', and 'family' support'. Thus accordingly, factor 1 is named psychological work demands. Factor 2, perceived autonomy; factor 3, perceived managerial support; and factor 4 are named as perceived family support.

Table 7.6: Rotated Loadings

Items	Description	Component 1	2	3	4
PJD1	My job requires that I work very hard	0.536			
PJD2	I never seem to have enough time to get my work done	0.767			
PJD3	I worry a lot about my work outside working hours	0.597			
Auto1	Influence over the tasks you do in your job		0.712		
Auto2	Influence over the pace at which you work		0.696		
Auto3	Influence over the how you do your work		0.778		
Auto4	Influence over the order of tasks		0.746		
Auto5	Influence over the start / finish time		0.485		
Comm1	Changes to the way the organization is being run			0.774	
Comm2	Changes in staffing			0.767	
Comm3	Changes in the way employees do your work			0.781	
Comm4	Financial matters including budgets or profits			0.660	
Part1	Managers are good at seeking the views of employees			0.827	
Part2	Respond to the suggestions from employees			0.838	
Part3	Allow employees or to influence final decisions			0.789	
Trust1	Managers here can be relied upon to keep their promises			0.828	
Trust2	Managers are sincere in understanding employees' views			0.846	
Trust3	Managers here deal with employees' honestly			0.830	
Trust4	Managers here treat employees fairly			0.800	
Sups1	Understand employee have responsibilities outside work			0.653	
Sups2	Managers encourage people to develop their skills			0.716	
Flex1	Flexi-time				0.692
Flex2	Job sharing				0.796
Flex3	chance to reduce working hours				0.918
Flex4	chance to increase working hours				0.719
Flex5	working at or from home				0.427
Flex6	change shift time				0.673
Flex7	Workings same number of hours for fewer days				0.804
Fams1	Working only during school term time				0.400
Fams2	Paid parental leave				0.527

Estimator: WLSM
Rotation: GEOMIN
Type of rotation: Oblique.
Maximum number of iterations: 1000.
Note: only loadings above 0.4 are displayed.

Although, items measuring trust (4 items), participation (3 items), communication (4 items) and supervisor support (2 items) loaded onto one factor named as managerial support, the pattern for sub-factors did not emerge. Furthermore, flexibility (7 items), and family care benefits (2 items) loaded onto second factor named as family support, sub-factors did not emerge. As the pattern for subscales have not emerged thus, managerial support is considered a 13 item scale and family support is considered as 9 item scale. Scale consistency for all the constructs is determined through Cronbach alpha and the results are reported in the next section.

7.4 Internal consistency of scale items

Cronbach alphas are used to check the internal consistency (reliability) of scale items. Although there is no standard cut off criteria specified; 0.70 has been a generally agreed cut off point (Hair et al, 1998). However, a 0.60 level is also acceptable (Hair et al, 1998). The initial reliability measures of 'perceived work environment' scale items are presented in Table 7.7.

Following the suggestions for coefficient alpha and average item-total correlation (Nunnally, 1967; Gerbing and Anderson, 1988), none of the items are deleted from the scale. The results of item-total correlation (Table 7.7) indicate that all scores are in a range of 0.30 to 0.83. Lower inter-item correlations are more evident in 'family support' scale. However, this lower inter-item correlation was expected among family care benefit scale items as a result of high variation in family care benefits provided by different establishments to their employees. The results of coefficient alpha (α) indicate the reliability of scale measures as the value of α is greater than 0.6 for all the scales. Thus, the resulting scales for all variables have demonstrated acceptable reliability and the items for each scale can be averaged together to compute scale composites for aggregation. The reliability measures of outcome variables including 3-item organization commitment scale, 3-item anxiety scale, and 7-item job satisfaction scale are presented in Table 7.7. The item-total correlations are in the range of .40 and 0.75 and the resulting alpha values are larger than the cut-off point of 0.7. Hence, all the three scales have demonstrated acceptable reliability.

Table 7.7: Internal consistency of outcome variables

Construct	Items	Description	Reliability ITC	α
Work demands	PJD1	My job requires that I work very hard	0.44	0.67
	PJD2	I never seem to have enough time to get my work done	0.55	
	PJD3	I worry a lot about my work outside working hours	0.47	
Autonomy	Auto1	Influence over the tasks you do in your job	0.65	0.81
	Auto2	Influence over the pace at which you work	0.63	
	Auto3	Influence over the how you do your work	0.69	
	Auto4	Influence over the order of tasks	0.66	
	Auto5	Influence over the start / finish time	0.42	
Manager support	Comm1	Changes to the way the organization is being run	0.78	0.96
	Comm2	Changes in staffing	0.77	
	Comm3	Changes in the way employees do your work	0.78	
	Comm4	Financial matters including budgets or profits	0.67	
	Part1	Managers are good at seeking the views of employees	0.82	
	Part2	Respond to the suggestions from employees	0.83	
	Part3	Allow employees or to influence final decisions	0.79	
	Trust1	Managers here can be relied upon to keep their promises	0.8	
	Trust2	Managers are sincere in understanding employees' views	0.82	
	Trust3	Managers here deal with employees' honestly	0.81	
	Trust4	Managers here treat employees fairly	0.79	
	Sups1	Understand employee have responsibilities outside work	0.69	
	Sups2	Managers encourage people to develop their skills	0.72	
Family support	Flex1	Flexi-time	0.47	0.76
	Flex2	Job sharing	0.53	
	Flex3	Chance to reduce working hours	0.61	
	Flex4	Chance to increase working hours	0.45	
	Flex5	Working at or from home	0.27	
	Flex6	Change shift time	0.42	
	Flex7	Workings same number of hours for fewer days	0.53	
	Fams1	Working only during school term time	0.3	
	Fams2	Paid parental leave	0.36	
Commitment	OC1	Share many values of the organization	0.67	0.85
	OC2	Feel loyal to my organization	0.75	
	OC3	Proud to tell people who I work for	0.74	
Anxiety	Anx1	Tensed	0.67	0.85
	Anx2	Worried	0.75	
	Anx3	Uneasy	0.72	
Job satisfaction	JS 1	Sense of achievement	0.68	0.83
	JS 2	Scope for using initiative	0.673	
	JS 3	Amount of influence you have in job	0.69	
	JS 4	Training you receive	0.52	
	JS 5	Amount of pay you receive	0.40	
	JS 6	Your job security	0.46	
	JS 7	The work itself	0.65	

ITC= item total correlation, α = Cronbach alpha.

7.5 Justification for data aggregation

Bliese (2000) argued that before aggregation, constructs measured at individual level should be assessed by computing F-statistics, intra class correlation coefficients (ICC1 and ICC2), and within agreement statistics (r_{wg}) to determine if they support aggregation. I assessed the relevant statistics for perceived work demands, autonomy, managerial support, family support, job satisfaction, organization commitment, and anxiety. ANOVA for between-establishments difference is performed using SPSS 12.0, whereas, R2.7.2 software is used to calculate ICC (1), ICC(2) and r_{wg} (see chapter 5). Table 7.8 shows aggregation statistics for establishment level analysis.

The results (Table 7.8) of these tests support that individual employee responses can be aggregated to the establishment level. All scales show greater between-establishment differences than within (significant F values), establishment membership accounts for 19-75% variance in employees' scale scores (ICC 1), scale scores show group mean reliability (ICC 2), and also all scales show adequate within-establishment agreement (r_{wg}).

Table 7.8: Statistics for justifying establishment level aggregation

Scales	F-value[a]	ICC (1) > .12[b]	ICC (2) > 0.6[c]	R_{wg} > 0.7[d]	Lindell > 0.5[e]
Perceived work demands	2.507*	.11	0.601	0.7371	0.5098
Autonomy (control)	2.457*	0.104	0.60	0.6003	0.2965
Managerial support	3.914*	0.226	0.745	0.9415	0.5175
Family support	3.252*	0.36	0.692	0.7471	0.3714
Job satisfaction	2.890*	0.134	0.654	0.8852	0.5697
Organization commitment	3.266*	0.156	0.694	0.7987	0.6093
Anxiety (group size 13)	1.933*	0.11	0.50	0.7456	0.5315

Notes: N= 1731 establishments; N= 22451 employees; [a] Kenny and Judd (1986); [b] James et al (1984); [c] (Ostroff, 1993); [d] Castro (2002); [e] Lindell (2003) and Griffith (2003); * $p < 0.01$.

Also, ICC (2) scores, which take into account the sample size from each workplace, suggest that the small sample from each workplace is sufficient to generate confidence in the aggregate scores. Thus, data are aggregated at establishment level and then merged with data on actual turnover and various contextual variables already available at establishment level.

7.5.1 Assessing data properties at workplace level

After the individual level data were aggregated at workplace level and merged with other data on dependent and contextual variables which was already available at the same level, I checked data properties again at workplace level (Table 7.9).

Usable data for variables measured from employee survey questionnaire was available for 1731 establishments, whereas, usable turnover data measured from management questionnaire was available for 2295 establishments. Thus, usable data was reduced to 1731 establishments. Also, we included establishments into final analysis only if aggregated data was obtained from 3 or more employees per establishment to represent their establishment. Thus, after these necessary restrictions the final usable data pertained to 1647 establishments. Descriptive statistics for all the study variables at workplace level are given in Table 7.9.

The values of skewness and kurtosis in Table 7.9 are within the accepted limits as suggested by Tabachnick and Fidell (2001); and Kline (2005). Thus, data after aggregating at establishment level follows normality.

Table 7.9: Descriptive statistics for included variables at establishment level

	Perceived work demands	Autonomy	Managerial support	Family support	Job Satisfaction	Org commitment	Anxiety	Turnover
N	1647	1647	1646	1592	1646	1647	1647	1523
missing	0	0	1	55	1	0	0	124
missing %	0	0	0.06	3.3	0.06	0	0	7.53
Mean	3.29	2.99	3.34	1.267	3.534	3.671	2.44	2.27
Std. Deviation	0.37	0.326	0.495	0.168	0.332	0.417	0.369	1.71
Skewness	-0.03	-0.309	-0.012	0.800	-0.251	-0.10	-0.118	0.50
Std. Error of Skewness	0.06	0.60	0.060	0.061	0.060	0.060	0.060	0.063
Kurtosis	0.29	0.267	0.141	0.665	0.490	0.348	0.497	-0.513
Std. Error of Kurtosis	0.12	0.121	0.121	0.123	0.121	0.121	0.121	0.125

*turnover = Ln (actual turnover + 1).

204

A common feature in social science research is that we want to make inferences on the workplaces as well as on employees. Examining the effect of employees' perceptions of their work environments and their impact on employees' wellbeing, attitudes and the workplace level turnover rate poses a situation where individual level data (work environment perceptions, wellbeing and attitudes) is used to predict a workplace level behaviour (turnover). This section presents the analysis of data at the individual employee level for the relationship between employees' perceptions of their work environment, wellbeing and attitudes. In doing so, CFA is first used to test the measurement model. After the measurement model is tested and finalized, SEM is used to test the hypothesized relationships at the individual level.

7.6 The measurement model

Confirmatory factor analysis is conducted to identify the poorly fitting items, if any. Each construct in the proposed model (Figure 4.1) and its proposed indicators were analysed to determine the reliability of the measurements. Since it is assumed that observed variables are not perfect indicators of the underlying construct, CFA is conducted in two stages. In the first stage, a CFA is undertaken for each construct to assess the unidimensionality of the parameter estimates, the statistical significance of the parameter estimates, and the overall fit (Byrne, 2001). In the second stage, a CFA is performed on the overall model, including all the constructs and their indicators to test whether the model can describe inter-correlations among latent variables.

7.6.1 CFA for individual constructs

The results of exploratory factor analysis (Section 7.5) have been used as the basis for specifying the measurement models for each construct. The results of confirmatory factor analysis (CFA) for each of the latent variables in the hypothesized model are given in Table 7.10a along with fit indices. Given the sensitivity of the chi-square test for the sample size, several different fit indices (factor loadings, R^2, CFI, and RMSEA) are reported (Kline, 1998; Mueller & Hancock, 2001).

205

The factor loadings represent the direct effects of the scale items on the measurement of the construct (Bollen, 1989), and need to be significant at the 0.05 level (Garson, 2006). The squared multiple correlations are the percent of the variance explained in each item.

Since scales for perceived work demands, organization commitment, and anxiety consisted of three items each, these scales are regarded as 'just identified or saturated models' (Byrne, 2001). A model is saturated when the number of equations is equal to number of parameters being estimated. Thus, the saturated models have zero degrees of freedom, the probability level can not be computed, and CFI and TLI are equal to 1.00; i.e. a perfect fit.

For all other scales, fit indices indicate that all constructs fit the data well. The RMSEA values are less than the cut-off value of 0.08 signifying a reasonable fit (Schumacker and Lomax, 2004), except for job satisfaction and managerial support. All the factor loadings and R^2 values for individual items measuring 'job satisfaction' and 'managerial support' are well above the cut-off values and dropping any items doesn't produce a significant change in the value of RMSEA. Thus, all the items are retained for job satisfaction and managerial support. Also, the incremental fit measures (CFI and TLI) exceed the critical value of 0.90 supporting the measurement models for individual constructs (Schumacher and Lomax, 2004).

The reliability and unidimensionality of measures have already been established using Cronbach alpha and item-to-total correlation respectively (section 7.4). However, composite reliability estimates and AVE's are computed with confirmatory factor analysis results (Fornell and Larcker, 1981). All of the composite reliability estimates exceed the 0.70 cut-off value (Table 7.10a). In addition, all factor loadings are high in value and are statistically significant; thus, satisfying the criteria for convergent validity (Anderson and Gerbing, 1988; Koufteros, 1999). Furthermore, the average variance extracted (referred to as AVE) exceeds the threshold of 0.50 assuring the convergent validity. Discriminant validity can be examined by comparing the AVE's with R^2 values. Table 7.10a reveals that AVE's are greater than their respective R^2 values. This finding supports that all constructs have discriminant validity.

Table 7.10a: CFA results for measurement models of individual constructs

Construct	Factor loadings	R^2	χ^2 (df)	CFI	RMSEA	Composite Reliability	AVE
Psychological work demands							
Wd1	0.550*	0.302*	0 (0)	1.00	0	0.897	0.75
Wd2	0.797*	0.635*					
Wd3	0.576*	0.332*					
Autonomy							
Auto1	0.73*	0.53*	432.3* (5)	0.989	0.062	0.957	0.821
Auto2	0.716*	0.51*					
Auto3	0.815*	0.66*					
Auto4	0.763*	0.58*					
Auto5	0.451*	0.20*					
Family support **							
Flex1	0.708*	0.501*	3983.197*	0.901	0.086	0.957	0.857
Flex2	0.801*	0.641*	(23)				
Flex3	0.902*	0.814*					
Flex4	0.719*	0.517*					
Flex5	0.472*	0.223*					
Flex6	0.683*	0.467*					
Flex7	0.805*	0.648*					
Fams1	0.435*	0.189*					
Fams2	0.557*	0.310*					
Managerial support							
Trust1	0.820*	0.672*	36286*	0.90	0.158	0.994	0.927
Trust2	0.848*	0.718*	(65)				
Trust3	0.828*	0.686*					
Trust4	0.808*	0.652*					
Part1	0.839*	0.704*					
Part2	0.847*	0.718*					
Part3	0.815*	0.663*					
Comm1	0.770*	0.593*					
Comm2	0.762*	0.581*					
Comm3	0.777*	0.604*					
Comm4	0.671*	0.450*					
Sup1	0.701*	0.492*					
Sup2	0.725*	0.526*					
Organization commitment							
Oc1	0.734*	0.539*	0.00 (0)	1.00	0	0.98	0.943
Oc2	0.860*	0.740*					
Oc3	0.833*	0.694*					
Anxiety							
Anx1	0.732*	0.536*	0.00 (0)	1.00	0	0.9790	0.940
Anx2	0.874*	0.765*					
Anx3	0.808*	0.652*					
Job satisfaction							
Js1	0.789*	0.622*	5257.56*	0.911	0.10	0.948	0.736
Js2	0.815*	0.664*	(14)				
Js3	0.805*	0.647*					
Js4	0.513*	0.263*					
Js5	0.388*	0.150*					
Js6	0.450*	0.202*					
Js7	0.727*	0.528*					

* Significant at 5%

** Binary categorical variables.

- Probit regressions are estimated for the categorical factor indicators, and linear regressions are estimated for the continuous factor indicators
- Construct reliability = (Sum of standardized loadings)^2/(Sum of standardized loadings)^2+ (Sum of indicator measurement error).
- Average variance extracted = (Sum of squared standardized loadings) / (Sum of squared standardized loadings) + (Sum of indicator measurement error).

In summary, CFA is used to determine the fit of the proposed model to the data and to establish constructs' reliability and validity. The fit indices for all scales (Table 7.10a) indicate that the proposed constructs fit the data well. Also, the measurement model showed adequate reliability and validity for the proposed constructs.

7.6.2 CFA for overall constructs

Prior to estimating the overall measurement model, the measurement for each construct was examined separately to determine if the data fits the specified indicators and constructs. Based on the results of goodness of fit indices, factor loadings and R square, only reliable indicators are retained (see Table 7.10a). The overall measurement model to be tested consists of psychological work demands (WD), autonomy (AUTO), managerial support (MANS), family support (FAMS), anxiety (ANX), job satisfaction (JS), and organization commitment (OC). The purpose here is to determine if sufficient correlations exist between latent constructs to include them in a structural model. The overall measurement model is presented in Figures 7.2 and 7.3. In this figure, the latent variables are presented by ellipses and indicator variables as rectangles. The results of CFA for overall measurement model are given in Table 7.10b and inter-correlations between latent constructs are given in Table 7.11.

The results (Table 7.10b) show that all the indicators fell onto their posited underlying factors and were statistically significant at the 0.05 level. The factor loadings determine the relative importance of observed variables as indicators of the constructs and all the factor loadings are above 0.5. The R-square values for all indicators range from 0.168 to 0.768. Hence, some R-square values are below the acceptable level of 0.50 (Byrne, 2001). However, the composite reliability measures for all constructs are well above the cut-off value of 0.7. In addition, the AVE values for all constructs are well above the recommended value of 0.5 (Fornell and Larker, 1981). Thus, the variance captured by the construct is greater than the variance due to measurement error (Hair et al, 1998).

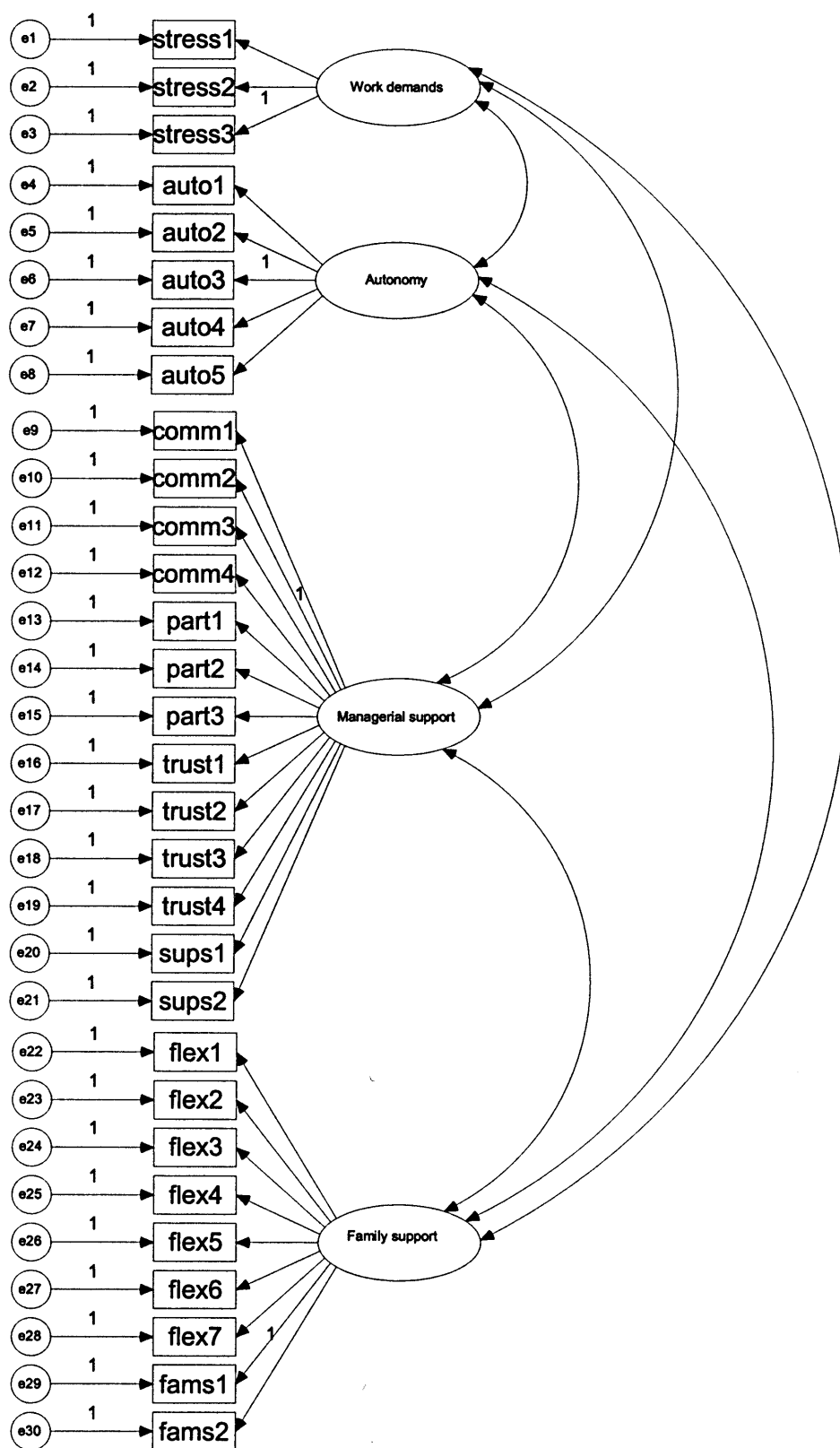Figure 7.2: Measurement model of work environment constructs

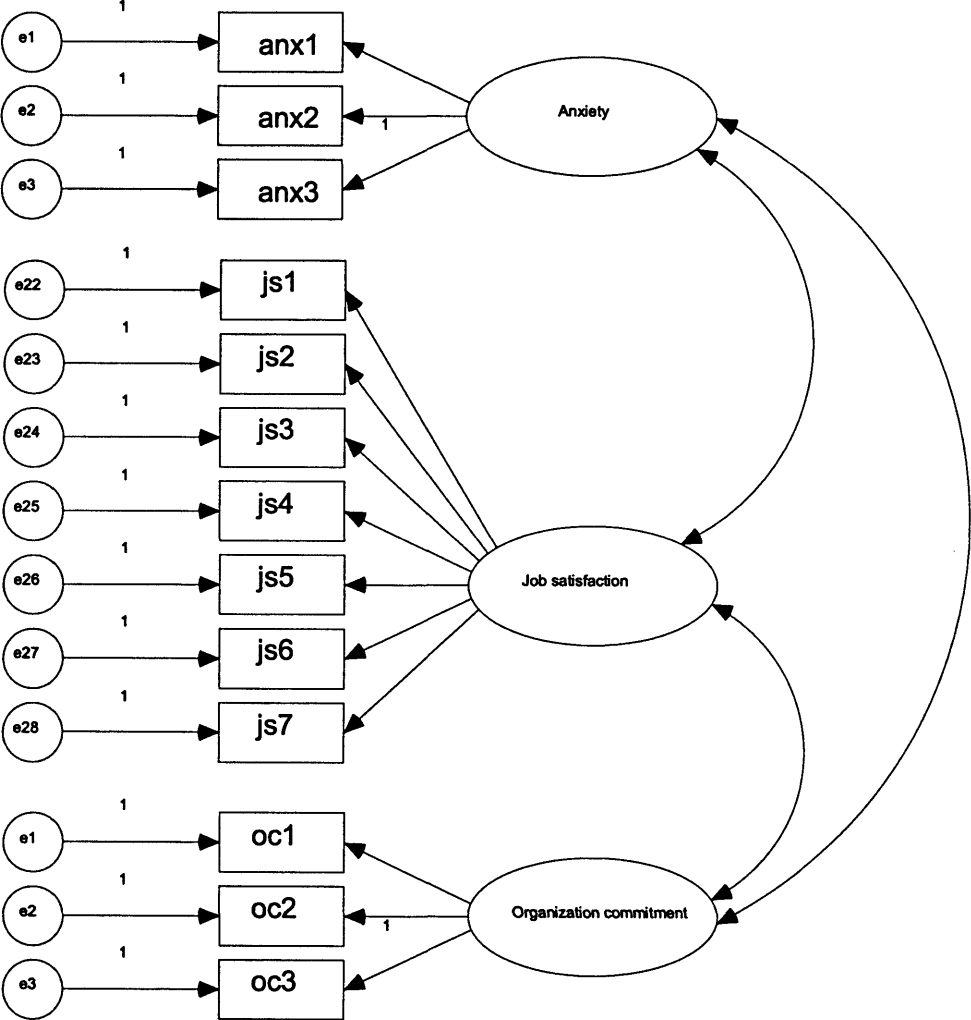Figure 7.3: Measurement model for wellbeing and job attitude constructs

Table 7.10b: CFA results for overall measurement model

Construct	Standardized loadings	R^2	Composite Reliability	AVE
Psychological work demands				
Wd1	0.409*	0.168*	0.881	0.724
Wd2	0.715*	0.511*		
Wd3	0.769*	0.591*		
Autonomy				
Auto1	0.776*	0.602*	0.960	0.831
Auto2	0.713*	0.508*		
Auto3	0.776*	0.602*		
Auto4	0.712*	0.507*		
Auto5	0.512*	0.262*		
Family support**				
Flex1	0.761*	0.579*	0.977	0.831
Flex2	0.806*	0.650*		
Flex3	0.833*	0.693*		
Flex4	0.674*	0.454*		
Flex5	0.637*	0.405*		
Flex6	0.656*	0.430*		
Flex7	0.756*	0.572*		
Fams1	0.537*	0.288*		
Fams2	0.612*	0.375*		
Managerial support				
Trust1	0.809*	0.655*	0.994	0.925
Trust2	0.834*	0.695*		
Trust3	0.815*	0.664*		
Trust4	0.815*	0.664*		
Part1	0.821*	0.674*		
Part2	0.830*	0.690*		
Part3	0.812*	0.659*		
Comm1	0.754*	0.568*		
Comm2	0.747*	0.559*		
Comm3	0.787*	0.620*		
Comm4	0.669*	0.447*		
Sup1	0.716*	0.513*		
Sup2	0.766*	0.586*		
Organization commitment				
Oc1	0.790*	0.623*	0.981	0.946
Oc2	0.795*	0.623*		
Oc3	0.838*	0.702*		
Anxiety				
Anx1	0.813*	0.661*	0.976	0.932
Anx2	0.702*	0.493*		
Anx3	0.876*	0.768*		
Job satisfaction				
Js1	0.702*	0.493*	0.957	0.763
Js2	0.704*	0.496*		
Js3	0.752*	0.565*		
Js4	0.635*	0.403*		
Js5	0.510*	0.260*		
Js6	0.547*	0.300*		
Js7	0.675*	0.456*		

Chi-square (df) = 20818.9 (203), CFI = 0.91, TLI = 0.922, RMSEA = 0.067.

The correlations between latent constructs are presented in Table 7.11. All the correlations are significant and are in the expected direction. Of the work environment characteristics; autonomy, managerial support and family support are positively related with both job satisfaction and organization commitment for men and women. The effect size, however, is larger for men. Psychological work demand is negatively related with job satisfaction in both samples but the effect size is larger for women. Autonomy, managerial support and family support have shown a negative association with anxiety in both samples; however, the associations are stronger in the female sample. Psychological work demands have a strong positive association with anxiety in both samples. The correlations between latent constructs (Table 7.11) are less than 0.8; hence, multi-collinearity is not an issue. Sufficient correlations between construct indicate that these construct can be used in structural model for hypothesis testing. Furthermore, the goodness of fit indices indicate that the overall measurement model yields an acceptable fit. In short, the measurement model has provided the evidence to proceed with the structural modelling.

Table 7.11: Correlations between latent constructs

	1	2	3	4	5	6	7
1. Psychological job demand	1	0.031	-0.103	0.700	-0.121	-0.133	0.038
2. Autonomy	0.065	1	0.533	-0.105	0.268	0.298	0.301
3. Job satisfaction	-0.082	0.599	1	-0.397	0.260	0.694	0.701
4. Anxiety	0.733	-0.058	-0.302	1	-0.133	-0.335	-0.216
5. Family support	-0.049	0.225	0.280	-0.062	1	0.300	0.175
6. Managerial support	-0.070	0.381	0.724	-0.222	0.337	1	0.668
7. Organization commitment	0.070	0.397	0.744	-0.139	0.225	0.690	1

* All correlations are significant at 0.05
Correlations for male sample (lower diagonal) and correlations for female sample (upper diagonal).

7.7 The structural model

As discussed earlier (chapter 5), a structural model specifies the correlational links between or among the theoretical constructs (Byrne, 2001). This section aims to test the hypothesized model describing the relationships between perceived work environment and its influence on employees' job attitudes and general wellbeing. At the individual level, the proposed model has seven constructs of which four are exogenous (perceived work demands, perceived autonomy, perceived managerial support, and perceived family support) and three are endogenous (job satisfaction, organization commitment, and anxiety). The proposed structural model is given in Figure 7.4. However, for simplification the observed indicators and the variances of observed indicators are omitted from the diagram. Here, the hypothesized structural model applies the same indicators as given in the measurement model.

Figure 7.4: Structural model at individual level
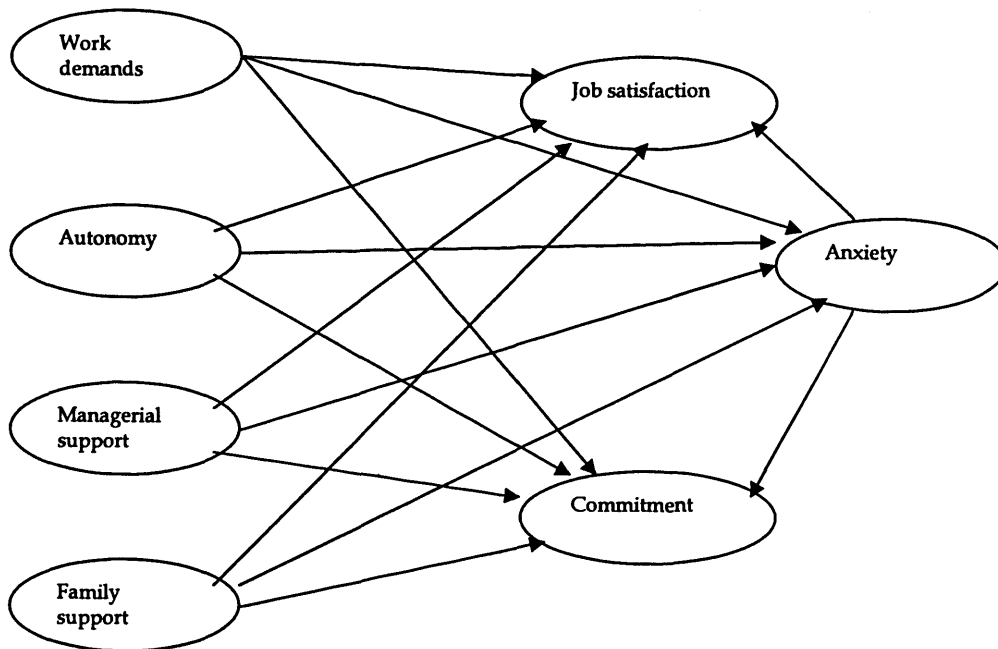
For pooled sample: Chi-square (df) = 20818.9 (203), CFI = 0.91, TLI = 0.922, RMSEA = 0.067.
Male/female sample: Chi-square (df) = 15786.5 (350), CFI = 0.912, TLI = 0.931, RMSEA = 0.063.

Since the model has to be tested for both male and female samples, a baseline model has to be determined first. The creation of the baseline model involved testing all of

213

the hypothesized relationships in the model (Figure 7.4) using the entire "pooled" sample (i.e., both the male and female employees) at individual level. To identify significant differences between male and female employees, multi-group analysis is performed.

Standardized path coefficients and their associated t-values are examined to draw conclusions (Table 7.12). Path coefficients represent the strength of associations among latent variables. The higher the path coefficient, the stronger is the association. Also, if t-values are greater than absolute 1.96, it means the estimated parameter value is different from zero, and the hypothesized relationships are supported. With the help of SEM analysis, the direction and magnitude of the association between work demands, autonomy, managerial support, family support and outcome variables is determined. This section, therefore, verifies whether the empirical results of the structural model support the hypothesized model (chapter 4; Figure 4.1). All indirect effects are also examined.

7.7.1 Analysis of direct hypotheses

Hypotheses 4.1, 4.3, 4.5, 4.6, 4.8, 4.9, 4.10, 4.11, 4.12 and 4.13 tested the direct relationships between perceived work environment characteristics, wellbeing, and employees' job attitudes. Most of the hypothesized relationships are supported (at individual level of analysis) based on structural equation modelling results (Table 7.12).

Hypothesis 4.1 predicted that job demands are negatively related to job satisfaction and organization commitment. This hypothesis is not supported. The direct relationship of job demands with both job satisfaction and organization commitment is positive and significant for both male and female employees. This finding contradicts the results of previous studies (Currivan, 1999; Cuyper and Witte, 2006; Ahuja et al, 2007) and the meta-analytic results (chapter 3) where a significant negative relationship was reported between perceived high work demands and both job attitudes. However, meta-analysis reported a significant positive association between work hours and perceived work demands. Work hours are also positively

associated with both job attitudes. It may be that the positive relationship between perceived high work demands and both job attitudes is due to work hours. Since, the present research has not included work hours, future research may explore these results further.

The hypotheses predicting a significant positive effect of autonomy (hypothesis 4.3) and managerial support (hypothesis 4.5) on job satisfaction and organization commitment are supported. This finding is not only consistent with social exchange theory but is also supported by earlier studies (see meta-analysis Table 3.4). Hypothesis 4.6, predicting a negative association between perceived lack of family support and both job satisfaction and organization commitment is supported. Previous studies (Mauno et al, 2006; Ng et al, 2006; Chen et al, 2006; Thompson et al, 1999; Meta-analysis chapter 3), however, have reported a positive association between the availability of family support and both job attitudes. These findings reveal that employees value the availability of family support. The lack of family support result into lower job satisfaction, organization commitment, and higher work related anxiety. Hence, family support policies are important for improving employees' overall wellbeing (both job-related and general) in workplaces.

Hypothesis 4.8, predicting that job demands are positively associated with perceived work anxiety, is supported in both samples. The magnitude of the relationship, however, is larger in the sample of male employees. Hypothesis 4.9 predicted that autonomy is negatively associated with perceived work anxiety. The path estimates shown in Table 7.4 are consistent with this prediction in both samples. The hypothesis predicting a significant negative effect of managerial support (hypothesis 4.10) on perceived work anxiety is supported. These results are consistent with the empirical findings reported earlier (Warr, 1990; Kushnir and Melamed, 1991; Landsbergis et al, 1992; Fletcher and Jones, 1993; Wall et al, 1996). Hypothesis 4.11, predicting a positive association between lack of family support and perceived high work anxiety, is supported. The hypothesized relationship between lack of family support and anxiety is supported in all the three samples. Hypotheses 4.12 and 4.13 predicted the negative effects of perceived work anxiety on both job attitudes. Both hypotheses are supported. The results show that perceived work anxiety reduces both job satisfaction and organization.

Table 7.12: Standardized path coefficients and indirect (mediating) effects

Relationship	Male employees		Female employees		Pooled sample	
	Standardized path coefficient	Indirect (mediator)	Standardized path coefficient	Indirect (mediator)	Standardized path coefficient	Indirect (mediator)
Work demands – anxiety	0.726*	-	0.675*	-	0.697*	-
Autonomy – anxiety	-0.051*	-	-0.065*	-	-0.052*	-
Managerial support – anxiety	-0.165*	-	-0.236*	-	-0.202*	-
Family support – anxiety	0.040*	-	0.036*	-	0.030*	-
Work demands – job satisfaction (anxiety)	0.108*	-0.355*	0.171*	-0.369*	0.139*	-0.365*
Autonomy – job satisfaction (anxiety)	0.373*	0.011*	0.344*	0.017*	0.355*	0.013*
Managerial support – job satisfaction (anxiety)	0.533*	0.031*	0.512*	0.055*	0.529*	0.042*
Family support – job satisfaction (anxiety)	0.007	-0.009*	-0.006	-0.013*	0.005	-0.007*
Work demands – Commitment (anxiety)	0.212*	-0.245*	0.224*	-0.203*	0.215*	-0.216*
Autonomy – Commitment (anxiety)	0.140*	0.008*	0.102*	0.009*	0.118*	0.007*
Managerial Support – Commitment (anxiety)	0.623*	0.021*	0.625*	0.030*	0.630*	0.025*
Family support – Commitment (anxiety)	-0.016	-0.006*	-0.033*	-0.007*	-0.023*	-0.004*
Anxiety – Organization Commitment	-0.149*	-	-0.158*	-	-0.148*	-
Anxiety – Job satisfaction	-0.242*	-	-0.309*	-	-0.272*	-

* p < 0.05

216

7.7.2 Analysis of indirect (mediating) hypotheses

Besides the direct effects hypothesized in the proposed model (Figure 4.1), several indirect relationships are also hypothesized. Indirect effects, their standard errors and significance values are computed in MPlus and results are given in Table 7.12.

Confirming hypothesis 4.16a, perceived work anxiety mediated the relationship between all four work environment characteristics and job satisfaction in the sample of male employees. The mediation is a partial mediation as both direct and indirect effects are significant. In the sample of female employees, the relationship between perceived family support and job satisfaction was not mediated by anxiety. Except for work demands and job satisfaction, the indirect effects are small compared to the direct effects in both samples. The indirect effects of work demands on job satisfaction through anxiety are not only significant but also are larger in magnitude compared to direct effects. These results show that job demands have a negative impact on employees' job satisfaction through perceived work anxiety.

Supporting hypothesis 4.16b, anxiety partially mediated the relationship between all the four aspects of work environment perceptions and organization commitment in the sample of male employees. The magnitude of the indirect effect of work demands on organization commitment through anxiety was larger than the direct effect. Again, the remaining indirect effects were very small compared to the direct effects (Table 7.12). In the sample of female employees, the indirect effect of family support on organization commitment was not significant.

7.7.3 Summary of results at individual level

The data analysis is carried out using SEM with a two step approach (Anderson and Gerbing, 1988; Byrne, 2001; Schumacker and Lomax, 2004). In the first step, a measurement model is developed and evaluated for each individual construct and then for the entire constructs together. The purpose of testing a measurement model was to establish the unidimensionality, reliability, convergent and discriminant validity of the constructs with confirmatory factor analysis. The measurement model

217

was tested separately for the pooled sample, the sample of male employees and female employees. The parameter estimates of all the three measurement models were within the accepted thresholds for confirmatory factor analysis.

In the second step, the full proposed structural model at the individual level was estimated based on the measurement model. The structural model was also estimated for the pooled sample, the sample of male employees and the sample of female employees. The fit indices for the three models were within the acceptable thresholds. Thus, the model was accepted for hypotheses testing.

The results of the individual level analysis (Table 7.12) indicate both similarities and differences between male and female employees in their perceptions of work environments and their influence on job attitudes and the measure of wellbeing (i.e. anxiety). In summary, of the 14 hypothesized direct paths from the proposed model, 12 were statistically significant for male employees, 13 were significant for female employees, and 13 paths were significant for pooled sample. The paths which are significant in all the three samples are: work demands–Anxiety, Autonomy-Anxiety, Managerial support-Anxiety, Family support-Anxiety, work demands-job satisfaction, Autonomy-Job satisfaction, Managerial support-Job satisfaction, work demands-organization commitment, autonomy-organization commitment, managerial support-organization commitment, anxiety-organization commitment, and anxiety-job satisfaction. The path Family support-organization commitment is only significant in the sample of female employees and pooled sample.

Of the eight hypothesized indirect paths from the hypothesized model, all are statistically significant in the three samples (male, female and pooled). Thus, anxiety partially mediates the effect of perceived work environment characteristics on employees' job attitudes.

Part 3: Workplace Level Analysis

Individual employee analysis has been presented in the beginning (Part 2) of this chapter. In addition, it has already been demonstrated that data allows workplace

level analysis by aggregating individual level employee data (Part 1, section 7.5). This section presents analysis of data at workplace level. For analysing two-level data, individual-level data is aggregated at workplace-level to test workplace level propositions (Snijders and Boskers, 1999). However, it is important to note here that aggregated variables refer to workplace units and not the individual employees. At this level, data consists of a sample of workplaces (N= 1647) drawn from both the public (N= 427) and the private sectors (N= 1220). Public sector workplaces are female dominant (65.5%), whereas, private sector workplaces are male dominant (53.8%).

SEM is used to test the structural model at the workplace level. Since, at this stage all the variables of interest are observed variables; path analysis is performed to test the relationships between exogenous and endogenous variables. These relationships are specified in the structural model given in Figure 7.5.

7.8 Evaluating the proposed model

The method of path analysis is applicable only to those relationships which are linear, additive and causal or correlational (Byrne, 2001). The application of path analysis assumes measurement of variables with interval scale properties; however, dichotomous variables are also allowed in path models (Muthen and Muthen, 2009). In path models, a subset of variables is taken as linearly dependent on the remaining variables which are assumed to be predetermined (exogenous). The exogenous variables may be correlated among themselves. The variables taken as dependent are termed as endogenous and the total variation of the endogenous variable(s) is assumed to be completely determined by some linear combination of the variables in the system. This means that a particular endogenous variable may be dependent on both exogenous and other endogenous variables in the system. Where the variation in an endogenous variable is not completely determined by prior measured variables, a residual variable is introduced to account for the variance of the endogenous variable not explained by measured variables (Wright, 1960). Following these simple conventions, a path model for the study variables at workplace level is drawn (Figure 7.5).

In the path diagram (Figure 7.5), the hypothesized relations among the variables of interest are represented by unidirectional arrows extending from each determining variable to the variable dependent on it. Correlations between exogenous variables are represented by double headed curvilinear arrows. Residual variables are attached to all endogenous variables.

The path model is tested in MPlus to estimate the fit of the hypothesized model to the data. First, a baseline model was determined by specifying the model for both sectors of employment. The model is used to test hypothesized relationships between four work environment characteristics (exogenous variables) and four outcome variables work-related anxiety, job satisfaction, organization commitment and turnover (endogenous variables). Thus, initial analysis of the hypothesized model was performed separately for each of the public and private workplaces (Garson, 2006). Separate testing allows determining the consistency of model results; however, it does not test for significant differences in model parameters across two employment sectors. To test for differences (if any) in the model parameters across sector of employment, multi-group modelling is performed. The results of path analysis are given in Table 7.13.

Figure 7.5: A path model for study variables at workplace level
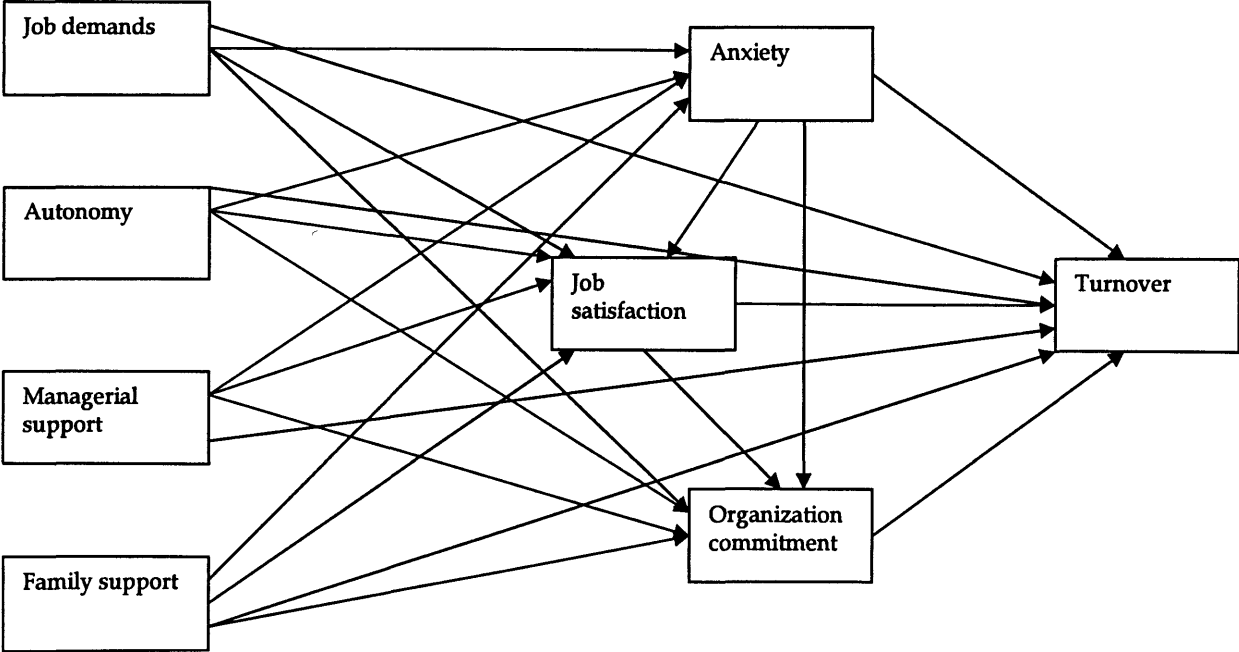
* saturated model
** Chi-square = 0.00, CFI = 1.00, TLI = 1.00, RMSEA = 0.00

221

7.8.1 Hypotheses test for direct paths

Hypotheses 4.1 – 4.15 are tested at workplace level as well to examine the direct relationships between employees' shared perceptions of their work environments, job attitudes, wellbeing and turnover and the results are reported in Table 7.13. Hypothesis 4.8 predicted a positive association between work demands and anxiety, hypothesis 4.9 predicted and negative association between autonomy and anxiety, hypothesis 4.10 predicted a negative association between managerial support and anxiety, and hypothesis 4.11 predicted a positive association between lack of family support and anxiety. Of these hypotheses, hypothesis 4.8 and 4.10 are supported. This means employees shared perceptions of high psychological work demands increases their work related anxiety. Perceived support from managers, however, reduces the feelings of anxiety among employees collectively. Though autonomy is negatively related to anxiety at workplace level as hypothesized but the relationship is insignificant. Family support has no significant impact on anxiety at workplace level.

Hypotheses 4.1a, 4.3a, 4.5a, and 4.5b predicted the relationships between each of the four work environment characteristics and job satisfaction. Hypothesis 4.1a predicted a negative relationship between work demands and job satisfaction, however intriguingly the relationship was positive and significant. Hypotheses 4.3a and 4.5a predicted a positive relationship between autonomy and job satisfaction; and between managerial support and job satisfaction. The relationship between lack of family support and job satisfaction (hypothesis 4.5b) is insignificant.

Hypotheses 4.1b, 4.3b, 4.6a, and 4.6b predicted relationships between employees shared perceptions of their work environments and organization commitment. Hypothesis 4.1b, predicting a negative relationship between work demands and organization commitment, is not supported in private sector workplaces. In public sector sample and pooled sample, work demands have a significant positive relationship with organization commitment. Hypothesis 4.3b and 4.6a have been supported. Thus, employees shared perception of job control (autonomy) and managerial support has a positive impact on their organization commitment.

222

Table 7.13: Parameter estimate of the path model

Relationship	Private sector		Public sector		Pooled sample	
	Standardized path coefficient	Indirect (mediator)	Standardized path coefficient	Indirect (mediator)	Standardized path coefficient	Indirect (mediator)
Work demands – anxiety	0.449*	-	0.392*	-	0.434*	-
Autonomy – anxiety	-0.018	-	-0.052	-	0.027	-
Managerial support – anxiety	-0.188*	-	-0.266*	-	-0.210*	-
Family support – anxiety	0.042	-	0.028	-	0.040	-
Work demands – js (anxiety)	0.073*	-0.085*	0.014	-0.039	0.057*	-0.072*
Autonomy – js (anxiety)	0.160*	-0.005	0.163*	0.008	0.160*	0.006
Managerial support – js (anxiety)	0.396*	0.029*	0.415*	0.021	0.399*	0.028*
Family support – js (anxiety)	0.003	-0.011	0.064	-0.004	0.018	-0.009
Work demands – OC (anxiety)	0.026	-0.020	0.092*	-0.026	0.044*	0.006
Autonomy – OC (anxiety)	0.081*	0.001	0.081*	-0.005	0.079*	0.001
Managerial Support – OC (anxiety)	0.307*	0.007	0.268*	0.014	0.298*	-0.002
Family support – OC (anxiety)	-0.050*	0.002	0.002	-0.002	-0.036	0.001
Anxiety – OC	-0.040	-	-0.058	-	0.013	-
Anxiety – JS	-0.176*	-	-0.094*	-	-0.155*	-
Js – oc	0.362*	-	0.404*	-	0.373*	-
Work demands -turnover (js)	-	-0.018	-	-0.008	-	-0.018
Managerial support – turnover (js)	0.014	-0.080*	0.017	-0.171*	0.014	-0,099*
Autonomy-turnover (js)	-	-0.005	-	-0.132	-	-0.070*
Family support-turnover (js)	-	-0.001	-	-0.044	-	-0.007

Work demands-turnover (oc)	-	0.001	-	0.002	-	0.001
Managerial support – turnover (oc)	-	0.009	-	0.005	-	0.005
Autonomy-turnover (oc)	-	0.004	-	0.003	-	0.002
Family support-turnover (oc)	-	-0.002	-	0.00	-	-0.001
Autonomy–turnover (anx- js – oc)	0.047	-0.057*	0.085	-0.127	0.057*	-0.073*
Work demands – turnover (anx-js-oc)	0.018	-0.115*	-0.051	0.004	-0.004	-0.082
Family support –turnover (anx- js – oc)	0.049	-0.016	0.024	-0.043	0.040	-0.016
Anxiety – turnover	-0.065	-	0.005	-	-0.042	
Js – turnover	-0.074*	-	-0.127*	-	-0.086*	
Oc – turnover	0.011	-	0.006	-	0.006	

Standardized coefficients
* Significant at 0.05 levels

Hypothesis 4.6b predicting a negative association between lack of family support and organization commitment, received support in the private sector workplaces.

Anxiety was hypothesized to have a negative impact on job satisfaction and organization commitment in hypotheses 4.12 and 4.13 respectively. Both hypotheses are supported in the path analysis. Based on social exchange theory, a positive relationship was hypothesized between anxiety and turnover, however this hypothesis is not supported. As hypothesized (hypothesis 4.15a) job satisfaction has a significant negative impact on turnover. However, the relationship between organization commitment and turnover is insignificant.

Hypotheses 4.2, 4.4, 4.7a, and 4.7b predicted relationships between four work environment characteristics and turnover. None of these hypothesized relationships are supported. Thus work demands, autonomy, managerial support, and family support have no direct association with turnover.

7.8.2 Hypotheses test for indirect paths

Anxiety, job satisfaction and organization commitment are considered as mediators in the proposed model. Thus, indirect paths have also been tested for three samples using MPlus. Indirect paths are based on the notion of social exchange theory (see chapter 4). The results for the mediators are presented in Table 7.13 for private workplaces, public workplaces, and pooled sample.

Hypotheses 4.16a, 4.16b, 4.16c, and 4.16d proposed that anxiety mediates the relationship between work demands and job satisfaction; autonomy and job satisfaction; managerial support and job satisfaction; and family support and job satisfaction respectively. Results in Table 7.13 show that anxiety partially mediates the relationship between work demands and job satisfaction. Work demands have a significant negative impact on job satisfaction through anxiety in private sector workplaces and pooled sample of public and private workplaces, however this relationship is not significant in public workplaces. Thus, hypothesis 4.16a is supported for private workplaces and all workplaces. The indirect effect of

autonomy on job satisfaction through anxiety is insignificant in all samples. Hence, hypothesis 4.16b is rejected. Hypothesis 4.16c, anxiety mediates the relationship between managerial support and job satisfaction, is accepted in the private sector sample and pooled sample. Hypothesis 4.16d is rejected in all the three samples, hence, anxiety does not mediate the relationship between family support and job satisfaction.

To test whether job satisfaction mediates the relationship between perceived work environment characteristics and turnover, four propositions were suggested (hypotheses 4.19a, 4.19b, 4.19c, and 4.19d). The results indicate that job satisfaction fully mediated the path from managerial support to turnover in all the three samples (hypothesis 4.19c); and from autonomy to turnover (hypothesis 4.19b) in the pooled sample only. Other indirect effects from work environment characteristics to turnover through job satisfaction are not significant. Organization commitment does not mediate the relationship between any of the four work environment variables and turnover for all three samples. Thus, hypotheses 4.20a, 4.20b, 4.20c, and 4.20d are rejected.

The results for indirect effects presented in Table 7.13 show that work demands have a significant negative impact on turnover in private sector workplaces through anxiety, job satisfaction, and organization commitment. Anxiety, job satisfaction and organization together mediate the relationship between autonomy and turnover. The results indicate that autonomy reduces turnover through its impact on anxiety, job satisfaction and organization commitment. This finding has an empirical value as autonomy increases positive job attitudes and reduces anxiety; hence, employees reciprocate by reducing turnover.

7.8.3 Goodness of fit assessment of path model

To check the consistency of the path model, the Maximum Likelihood method is used for estimation of model parameters. Model fit is assessed using the joint criteria of CFI > 0.90, TLI > 0.90, and RMSEA < 0.08. Since the proposed model is just-identified, i.e. all possible paths between variables have been postulated and the

numbers of free parameters are equal to the number of known values. Thus the model has achieved a perfect fit (CFI = 1.000, TLI = 1.000, RMSEA = 0.000). A just-identified model is also called a saturated model.

Land (1969) has established that in the case of a just-identified path model, there are no conditions imposed on the model that can be used to evaluate its adequacy. Rather, statistically insignificant paths are deleted from the path model to evaluate the adequacy of the model. Thus, only those path coefficients which are statistically significant are retained in a reformulation of the path model. Thus, the path model is modified and revised path model is given in Figure 7.6.

7.9 Evaluating the revised path model

Examination of results in Table 7.13 revealed a number of statistically insignificant paths in both public and private sector models. The paths from autonomy to anxiety, family support to anxiety, family support to job satisfaction, family support to turnover, anxiety to organization commitment, anxiety to turnover, and organization commitment to turnover were deleted. The modified path diagram is given in Figure 7.6. The revised path model was run again for both the public and private sector samples. The new model achieved good fit. Chi-square value (17.025 (12), p = 0.1486) is statistically insignificant, CFI (0.997) and TLI (0.989) are well above the acceptable criteria (> 0.90), and RMSEA (0.023) is within the maximum acceptable criteria (<0.08).

Given that the model provides a good fit to the data for both the public and private sectors, the revised model is retained for further analysis. Path coefficients for the new model are given in Table 7.14.

7.9.1 Hypotheses testing for revised path model

The Maximum likelihood method was used to estimate results of structural model to test the research hypotheses. Standardized path coefficients and their statistical significance were examined thoroughly to draw conclusions about the hypothesized

227

relationships in the model. The results are presented in Table 7.14. The structural model tests the effects of employees' shared perceptions of their work environments on their job satisfaction, organization commitment, work related anxiety, and turnover at workplace level.

Table 7.14 presents the parameter estimates of the structural model for both the public and private sectors. The minimum requirements for the model were satisfied and the model achieved a good fit. The path estimates in Table 7.14 show that perceived high work demands are significantly and positively related with work-related anxiety in both sectors. Though autonomy was negatively related with anxiety in both sectors, the relationship was insignificant. Therefore the path from autonomy to anxiety was removed from the model. Managerial support is negatively related with anxiety in both sectors. The path from family support to anxiety is removed from the analysis in the revised model. Thus, of the four work environment characteristics, only two (work demands and managerial support) are significant predictors of employees' wellbeing at workplace level.

Since the path from family support to anxiety is deleted, only work demands; autonomy and managerial support are included in structural equations to predict anxiety. The results (Table 7.14) show that work demands are significantly and positively related with job satisfaction in the sample of private workplaces and all workplaces. Though the relationship between work demands and job satisfaction for public sector workplaces is positive, it is insignificant.

Figure 7.6: Path diagram for revised model at workplace level
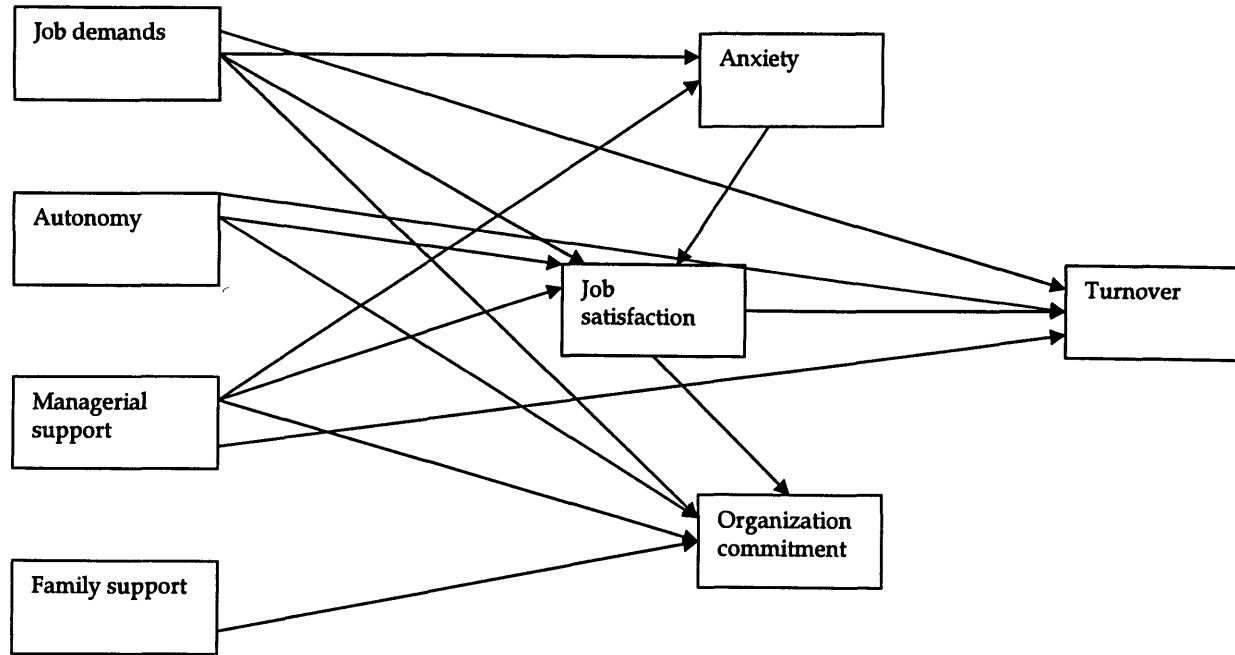
* saturated model
** Chi-square (df) = 17.025 (12), CFI = 0.997, TLI = 0.989, RMSEA = 0.023

Table 7.14: Parameter estimates of the revised path model

Relationship	Private sector		Public sector		Pooled sample	
	Standardized path coefficient	Indirect via ()	Standardized path coefficient	Indirect	Standardized path coefficient	Indirect
Work demands – anxiety	0.450*	-	0.394*	-	0.434*	-
Managerial support – anxiety	-0.178*	-	-0.254*	-	-0.210*	-
Work demands – js (anxiety)	0.073*	-0.079*	0.013	-0.036**	0.057*	-0.072*
Autonomy – js	0.160*	-	0.162*	-	0.160*	0.006
Managerial support – js (anxiety)	0.397*	0.031*	0.422*	0.023**	0.399*	0.028*
Work demands – OC (js)	0.044	0.026*	0.069	0.005	0.044*	0.006
Autonomy – OC (js)	0.083*	0.057*	0.077*	0.066*	0.079*	0.001
Managerial Support – OC (js)	0.302*	0.141*	0.280*	0.173*	0.298*	-0.002
Family support – OC	-0.048*	-	0.000	-	-0.036	0.001
Anxiety – JS	-0.175*	-	-0.092*	-	-0.155*	-
Js - oc	0.355*	-	0.410*	-	0.373*	-
Work demands – turnover (js)	0.010	-0.004	-0.049	-0.002	-0.004	-0.082
Autonomy–turnover (js)	0.047	-0.010**	0.086	-0.020**	0.057	-0.073*
Managerial support – turnover (js)	0.032	-0.024**	0.019	-0.052*	0.014	-0,099*
Js – turnover	-0.060*	-	-0.123*	-	-0.086*	

* Significant at 0.05 level
** Significant at 0.10 level
Pooled sample: chi-square (df) = 9.69 (6), CFI = 0.998, TLI = 0.992, RMSEA = 0.019
Public/private sample: chi-square (df) = 17.025 (12), CFI = 0.997, TLI = 0.989, RMSEA = 0.023

All paths are retained in the revised model for the relationship between employees' shared perceptions of their work environment and organization commitment. Work demands are positively associated with organization commitment in all three samples, but the relationship is statistically significant only for pooled sample. Autonomy and managerial support are positively associated with organization commitment in all three samples, as hypothesized. A significant negative relationship is observed between family support and organization commitment in the private sector sample.

After deleting the path from family support to turnover, work demands, autonomy and managerial support are included in structural equations as predictors of turnover. None of the three work environment variables showed any significant relationship with turnover. Only job satisfaction appeared as a significant predictor of turnover in all three samples, and the effect size is largest for public sector workplaces.

After removing the paths from organization commitment to turnover, and anxiety to turnover; job satisfaction remained the only proposed mediator in the model. The hypothesized indirect effects through job satisfaction are tested as well. The reported results (Table 7.14) show that job satisfaction fully mediates the path from autonomy to turnover and managerial support to turnover. Thus, consistent with the earlier argument (chapter 2) both autonomy and managerial support have a significant negative effect on turnover through their effect on job satisfaction.

7.9.2 Summary of results at the workplace level

The data analysis at the workplace level was carried out by specifying the model for both public and private sector workplaces. The objective was to find a baseline model that fits both public and private sector data well and will allow us to predict the outcome variables. The proposed model (Figure 7.5) was just-identified and showed a perfect fit. However, an alternative model was specified by removing the insignificant paths form the proposed model (Figure 7.6). The fit indices for the revised model were within the accepted thresholds, showing good fit to the data.

Based on the findings reported at the workplace level, it may be concluded that the sector of employment impacts on the strength of predictive pathways in turnover process. A number of differences are observed between public and private sector workplaces. The results (Table 7.14) of this study indicate that autonomy and managerial support are stronger predictors of job satisfaction in the public sector compared to private sector. Also, the predictive relationship between job satisfaction and turnover is stronger in the public sector. On the other hand, the impact of managerial support on organization commitment is stronger in the private sector. Anxiety showed a negative association with job satisfaction in both sectors, however, the magnitude is larger in private sector. Work demands are positively related with anxiety; the effect is stronger in the private sector. These findings indicate that sector of employment impacts on the strength of these relationships.

In summary, of the hypothesized 21 direct relationships, 8 relationships were supported in all the three samples. These relationships are: Work demands-Anxiety, Managerial support-Anxiety, Autonomy-Job satisfaction, Managerial support-Job satisfaction, Autonomy-Organization commitment, Managerial support-Organization commitment, Anxiety-Job satisfaction, and Job satisfaction-Turnover. A summary of the results for all direct and indirect relationships, both at individual and workplace level, is given in Table 7.15 and 7.16 respectively.

Table 7.15: Summary of direct hypotheses both at individual and workplace level

Hypotheses	Path	Individual level			Workplace level		
		Male	Female	Pooled	Private	Public	Pooled
Hypothesis 4.1a	Work demands – job satisfaction	SO	SO	SO	Supported	NS	Supported
Hypothesis 4.1b	Work demands – Organization commitment	SO	SO	SO	NS	SO	SO
Hypothesis 4.2	Work demands – turnover	-	-	-	NS	NS	NS
Hypothesis 4.3a	Autonomy – job satisfaction	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.3b	Autonomy – Organization commitment	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.4	Autonomy –turnover	-	-	-	NS	NS	NS
Hypothesis 4.5a	Managerial support – job satisfaction	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.5b	Managerial support – Organization commitment	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.6a	Family support – job satisfaction	NS	NS	NS	NS	NS	NS
Hypothesis 4.6b	Family support – Organization commitment	NS	Supported	Supported	Supported	NS	NS
Hypothesis 4.7a	Family support – turnover	-	-	-	NS	NS	NS
Hypothesis 4.7b	Managerial support – turnover	-	-	-	NS	NS	NS
Hypothesis 4.8	Work demands – anxiety	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.9	Autonomy – anxiety	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.10	Managerial support – anxiety	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.11	Family support – anxiety	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.12	anxiety – job satisfaction	Supported	Supported	Supported	Supported	Supported	Supported
Hypothesis 4.13	anxiety – Organization commitment	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.14	Anxiety – turnover	-	-	-	NS	NS	NS
Hypothesis 4.15a	job satisfaction – turnover	-	-	-	Supported	Supported	Supported
Hypothesis 4.15b	Organization commitment - turnover	-	-	-	NS	NS	NS

Table 7.16: Summary of indirect hypotheses both at individual and workplace level

Hypotheses	Path (mediator)	Individual level			Workplace level		
		Male	Female	Pooled	Private	Public	Pooled
Hypothesis 4.16a	Work demands – job satisfaction (anxiety)	Supported	Supported	Supported	Supported	NS	Supported
Hypothesis 4.16b	Autonomy – job satisfaction (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.16c	Managerial support – job satisfaction (anxiety)	Supported	Supported	Supported	Supported	NS	Supported
Hypothesis 4.16d	Family support – job satisfaction (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.17a	Work demands – Organization Commitment (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.17b	Autonomy – Organization Commitment (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.17c	Managerial support – Organization Commitment (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.17d	Fs – Organization Commitment (anxiety)	Supported	Supported	Supported	NS	NS	NS
Hypothesis 4.19a	Work demands – turnover (job satisfaction)	-	-	-	NS	NS	NS
Hypothesis 4.19b	Autonomy – turnover (job satisfaction)	-	-	-	Supported	Supported	Supported
Hypothesis 4.19c	Managerial support – turnover (job satisfaction)	-	-	-	Supported	Supported	Supported
Hypothesis 4.19d	Fs – turnover (job satisfaction)	-	-	-	NS	NS	NS
	Work demands – turnover (js-oc)	-	-	-	NS	NS	NS
	Autonomy –turnover (anxiety- js – oc)	-	-	-	SNR	NS	SNR
	Managerial support – turnover (anxiety- js – oc)	-	-	-	SNR	SNR	SNR

* NS – non significant, SO – supported but opposite in direction, SNR – supported a negative relationship

Concluding remarks

Chapter 7 presented the results of hypotheses testing for proposed model using SEM. Data analysis was done at two levels: individual and workplace. An individual level analysis was done to validate the measures derived from individuals and relationships between variables at individual level before proceeding to higher level analysis using the same data. Thus, latent constructs and their observed measures were validated using a confirmatory factor analysis. The fit-indices for measurement model reached the acceptable threshold. The measurement model also satisfied the conditions of unidimensionality, reliability, convergent and discriminant validity. In stage one, the part of the model based on measures derived from individual employees was tested using SEM.

After observing the inter-relationships between latent constructs at individual level, the data was aggregated to extend the analysis to workplace level. In the second stage, the variables measured at workplace level (e.g. sector of employment and turnover) were added to aggregated variables. Finally, the hypothesized relationships between workplace level variables were tested using path analysis.

The next chapter (Chapter 8) presents a discussion of the findings of the present study in respect to the stated hypotheses. It also examines how these findings relate to previous research findings and theoretical models of employee turnover. In addition, the study conclusions, limitations and future research directions are also presented.

Chapter 8

Discussion and Conclusion

8.1 Introduction

This chapter discusses the results of the study and the implications for researchers and managers. It is divided into four sections. The first section discusses the findings concerning the research questions outlined in chapter 1. The second section summarizes the contribution to the literature of the present research and practical implications. The third section discusses the limitations of the present study. Finally, the fourth section outlines directions for future research.

8.2 Discussion

The discussion of results is organized around the four main research questions addressed in this thesis. The first research question examines employees' perceptions of their work environment among male and female employees. The second research question examines the effects of perceived work environment characteristics on employees' wellbeing (anxiety, job satisfaction and organization commitment). The third research question addresses the associations between perceived work environment characteristics, anxiety, job satisfaction, organization commitment, and turnover at workplace level. The fourth research question examines the role of gender and sector of employment as moderators.

8.2.1 Research question 1

The first research question examines employees' perceptions of their work environment around four aspects of work: work demands placed on employees, level of autonomy available to employees, managerial support available to employees in workplaces to perform their work roles, and the availability of family support in workplaces to enable employees to balance their work and family roles.

236

Analysis of employees' responses on psychological work demands, autonomy, managerial and family support (chapter 6) revealed that work demands do not differ markedly for men and women, although they appear somewhat higher for women (Figure 6.1). Employees perceive their work as more challenging but not psychologically demanding. While the psychological demands of work are found to be significant source of threat for employee wellbeing, challenging work is not (Karasek and Theorell, 1990).

Employees have reported high control over their jobs except for one dimension i.e. start and finish time. Women's average level of autonomy is higher than men's. Women are more likely than men to have higher control over the task itself, pace of work, and the order in which to carry out tasks (Figure 6.2). Job control is an important aspect of wellbeing since majority of employees have higher level of education and training. Skill surpluses, when combined with rigidly controlled management systems, lead to dissatisfaction, boredom and disengagement from work (Karasek and Theorell, 1990).

Employees, also, reported that their managers are generally supportive and help them in performing their work roles (Figures 6.4 – 6.7). Managerial support does not differ substantially for men and women in the sample. The nature and quality of relationships between employees and their supervisors/managers have been examined as potential sources of job related strain. It is clear that receiving positive support from managers/supervisors in workplaces can directly alleviate the psychological strain (Beehr and McGrath, 1992).

A great majority of employees have reported the lack of family support by workplaces to help them balance their work and family roles (Figure 6.3a). Gender differences do exist in relation to the perceived family supportiveness (Figure 6.3b). Where the availability of family support has been linked to various positive outcomes such as job satisfaction and organization commitment (Thomas and Ganster, 1995; Allen, 2001) and lower stress (Thompson and Prottas, 2006); the impact of lack of family support is unclear in the existing literature. However, lack of support might make employees' feel that organizational resources are inadequate to

deal with work and family issues, leading to the possible negative consequence (Eisenberger et al., 2001; Dolcos, 2006).

Based on the analysis of employee responses, work environments (as perceived by employees) are characterised by work demands, high control, high managerial support, and lack of family support. The inter-correlations between job demands, control, managerial and family support are also examined (Table 7.11).

The positive correlation between autonomy and work demands for both men ($r = 0.065$) and women ($r = 0.031$) signifies that high job demands are generally accompanied by higher autonomy. Thus, there are higher proportions of low-strain and active jobs for both men and women; however, the magnitude of effect size is smaller for women population compared to men. Both men and women appear to have better views of managerial support available in workplaces. There is a negative correlation between managerial support and psychological work demands in both male ($r = -0.070$) and female ($r = -0.133$) samples. There is also a negative correlation between family support and psychological work demands in both male ($r = -0.049$) and female ($r = -0.121$) samples. The negative correlation between managerial support and work demands and family support and work demands show that the availability of these supports at workplaces reduces the extent of psychological work demands. A larger effect sizes for women pertaining to relationship of managerial support and family support with psychological work demands signify the importance of social support for women to help them manage both work and family life.

The inter-relationships between autonomy, managerial support and family support are also important. There is a substantial positive correlation between autonomy and managerial support for both men ($r = 0.381$) and women ($r = 0.298$), it is even stronger than the correlation obtained between autonomy and psychological work demands for both men and women. The smaller correlation for women is an indication of sex differences in social relations at work. The autonomy-managerial support correlation is an important issue as it reflects the participation linkage in the workplaces. Workplaces offering high control/high managerial support reflect participatory management (House, 1981) that allow employees to share power, have

influence, and have some chance of affecting collective decisions. Earlier literature has found that participative management enhance employee wellbeing (Martin et al, 2005).

The positive correlation between autonomy and family support for both men ($r = 0.225$) and women ($r = 0.268$) reflects that autonomy (the ability to decide when, where, and how the job is to be done) influences employees' ability to integrate work and family (Thompson and Prottas, 2006) by allowing them to use work-family arrangements. The significant positive correlation between managerial support and family support for both men ($r = 0.337$) and women ($r = 0.300$) reflect that the response that an employee receives to a request for an alternative work arrangement may very well depend on the manager's personal beliefs and past experiences with balancing work and family (Powell and Mainiero, 1999).

8.2.2 Research question 2

The second research question addressed the associations between employees' perceptions of their work environments, wellbeing and job attitudes at individual level. The present study examines four aspects of work environment, namely 'work demands', 'autonomy', 'managerial support' and 'lack of family support'. The results in chapter 7 show that autonomy and managerial support foster positive job attitudes and reduce anxiety. These results are consistent with the earlier findings (Allen, 2001; Aryee and Stone, 1996; Behson, 2005; Currivan, 1999; Cahill and Landsbergis, 1996; De Jonge and Schaufeli, 1998; Diefendorff et al, 2006; Fletcher and Jones, 1993; Gbadamosi et al, 2007; Iverson, 1996; Iverson, 1999; Kim, 1999; Landsbergis et al, 1992; Mansell et al, 2006; Rooney and Gottlieb, 2007; Schaubroeck and Fink, 1998; Sprigg et al, 2000; Wood, 2008). The results hold for both male and female samples. However, the magnitude of the relationship between autonomy and anxiety, and between managerial support and anxiety is larger for women. Thus increased job control and support from managers may be seen as effective strategies to reduce the level of anxiety among employees.

The 'lack of family support' showed no significant impact on employees' job satisfaction. However, it reduces the organization commitment of female employees. Organization commitment, on the other hand, has been recognized as a strong predictor of turnover at the individual employee level (e.g. Cotton and Tuttle, 1986; Griffeth et al, 2000). This finding point toward the fact that, in the absence of family support policies, employees may still like their jobs but they may reduce their level of commitment towards the employing organization. Hence, they may look for similar kinds of jobs elsewhere where they may receive more support to meet family responsibilities. A stronger relationship for women was expected, since employed mothers are likely to have greater combined work and family workloads than employed fathers (Pleck, 1985; Wortman et al., 1991).

The lack of family support also showed a positive impact on employees' work-related anxiety. Unavailability of family support in workplaces limits employees' effective participation in the family role thereby increasing family-work role conflicts. Unpleasant moods spilled over from family to work may increase the level of anxiety at work. Contrary to earlier findings (Allen, 2001; Chen et al, 2006; Mauno et al, 2006; Ng et al, 2006), this study finds that lack of family support has no <u>direct</u> impact on employees' job satisfaction. However, interestingly, it does have a significant negative <u>indirect</u> impact on job satisfaction through anxiety in all samples. The study also finds similar associations with organization commitment. The lack of family support in workplaces paves the way for role spill-over. Role juggling, daily involvement in family role and distress experienced during family activities affect mood states at work (Williams and Alliger, 1994), which are the critical determinants of psychological wellbeing i.e. anxiety or distress (Barling, 1990; Barnett and Marshall, 1992). Therefore, the availability of family support policies can reduce the extent of family interference with work. This study thus makes an important contribution by examining the mechanism through which family support policies affect employees' job-related wellbeing.

I found a positive relationship between work demands and organization commitment, and between job autonomy/control and organization commitment. The additive effect of high demands and high control on organization commitment is worth mentioning. The importance of job control has been recognized in the

240

organization commitment literature (Mathieu and Zajac, 1990) since it empowers employees to perform their work independently; however organization commitment literature has made little mention of the psychological work demands as one of the predictors. A closely related measure of role overload has been used to predict organization commitment (Mowday et al, 1982). There is little theoretical work explaining how role overload is linked to organization commitment. However, it is clear that employees who report high job strain also tend to report lower organization commitment (e.g. Mathieu and Zajac, 1990). A combination of environmental stressors and environmental control result into job strain (Karasek and Theorell, 1990). High strain jobs are those which involve high work demands and low control, thus the combined action of high work demands and low control will result into lower organization commitment. JDCS model (Karasek and Theorell, 1990) predicts that work motivation, learning and growth will occur in situations where both job demands and worker's control are high (i.e. the active jobs) because challenge seems necessary for effective learning. Mathieu and Zajac (1990) in their meta-analysis found a positive correlation between job challenge and organization commitment. Thus, more challenging jobs (i.e. high work demands and high job control) result into higher organization commitment.

The present study has also found that job demands are positively associated with anxiety. This finding concurs with that of many other studies (Barnett and Brennan 1995; De Jonge and Schaufeli, 1998; Fletcher and Jones, 1993; Green and McIntosh, 2001; Landsbergis et al, 1992; Wood, 2008). There is a general agreement that time pressures and work intensity are linked to the experiences of anxiety. This finding lends support for the Karasek's (Karasek and Theorell, 1990) model, the combination of job demands, control and support are associated with the symptoms of anxiety.

The present study finds that job demands are positively associated with both job attitudes (job satisfaction and organization commitment). This finding though contradicts some of the earlier findings (Ahuja et al, 2007; Chen et al, 2006; Currivan, 1999; Cuyper and Witte, 2006; Iverson and Deery, 1997; Jonge and Schaufeli, 1998), it also support others (Locke, 1976; Schneider and Snyder, 1975; James and Jones, 1980; Mathieu and Zajac, 1990; Brown and Peterson, 1993). These conflicting findings indicate that researchers have failed to examine the underlying mechanisms through

241

which job demands effect job attitudes. This study thus makes another important contribution by unlocking the mechanism through which job demands affect employees' job attitudes.

The positive association between work demands and job attitudes is consistent with the theory Y (McGregor, 1960) that work is important for individuals' wellbeing. Kohn and Schooler (1983) indicated that where work has substantive demands and complexity there is an improvement in the mental wellbeing. Although excessive workloads can be experienced as oppressive, for many people work is what they apparently choose to spend much of their time on and generally enjoy doing. However, such one-sidedness has negative effects for other aspects of wellbeing (e.g. anxiety). Many people find they are increasingly isolated from their family in an ever-increasing climate of work intensity. A rise in the level of anxiety due to work intensity can mask therefore the positive relationship between work demands and job attitudes. The present study finds that job demands have an indirect negative impact on both job attitudes through anxiety in both male and female samples. Not only are the indirect effects of job demands on both job attitudes are larger than the direct effects, the magnitude is larger for the sample of women. A larger magnitude for this relationship for women reinforces the notion of role theory. Though traditional role boundaries are diminishing, women still have greater family responsibilities. Excessive work demands placed on them makes it difficult for them to manage family responsibilities, which adds to their level of anxiety. Anxiety, in turn, has a negative impact on job attitudes. Thus, excessive demands placed on employees have detrimental effects on both employees' general and job-related wellbeing.

The present study thus indicated that perceived work environment characteristics are relatively important predictors of employee well-being. Workplace interventions such as decreasing or stabilizing job demands and increasing autonomy, managerial and family support are useful strategies which could improve employees' general and job-related well-being.

8.2.3 Research question 3

It is argued in the early parts of thesis that workplace membership, which provides the social context, should be taken into account to explain job attitudes, wellbeing, and behaviour. Individuals are associated with each other because of a formal assignment to a common workplace. Individuals with previously acquired similarities (education, training, skills to the job requirements etc.) are carefully selected as members of workplaces to facilitate interactions among them that go beyond mere coincidence. Through these interactions, members of the workplace develop similar responses to the work situations (Schneider, 1975).

Many reasons have been advanced for the uniformity of attitudes and behaviours within a group (e.g. a workplace). Among these reasons are: (1) exposure of group members to common environmental stimuli may lead to similar responses (Festinger et al, 1950), and (2) members may adjust intentionally to those attitudes and behaviours which they believe will receive approval from the group (Salancik and Pfeffer, 1978). The group membership influence work-related anxiety in two ways. Since, the group members may exert overt pressures on the individual by rewarding conformity and punishing deviancy, the group membership may be a source of anxiety for the individual (Cartwright, 1950) or it provides defence against anxiety (Seashore, 1977). Using anxiety and job attitudes as a group level phenomenon, Seashore (1954) showed that the more cohesive the work group, the less variance in anxiety and job attitudes expressed by the members of that group.

Thus an important point of contention is that if group membership has an influence on the members' response to the work situations, then the effects of group membership must be seriously considered. Furthermore, if job attitudes and anxiety are dependent on the salient information from other group members on work demands, autonomy, managerial support and family support; then management can develop strategies to influence the salient information regarding work demands, autonomy, managerial support, and family support to increase satisfaction and reduce anxiety, which in turn can reduce turnover.

The third research question, thus, addressed the associations between employees shared perceptions of their work environments, wellbeing, job attitudes, and turnover at workplace level. In the present study, the concept of measuring individuals' shared perceptions is similar to organizational climate. However, I didn't use the term 'climate' to avoid the risk of labelling the same variables as climate that in other studies are called job demands, control, and support. In addition, there is a lot of ambiguity concerning what constitute a workplace climate. Even this lack of consensus is evident in all the models of organizational climate (e.g. Jones and James, 1979; Litwin and Stringer, 1968; Kopelman et al, 1990; Koys and Decotiis, 1991; Ostroff, 1993; Schneider et al, 1996; Brown and Leigh, 1996). Thus, this study examines employees shared perceptions of job demands, control, managerial support and lack of family support and their impact on workplace level attitudes, anxiety, and turnover.

Some of the findings at workplace level are similar to those observed at individual level. At workplace level, excessive job demands increase anxiety while managerial support reduce it in both public and private sectors. The magnitude of the relationship between job demands and anxiety is larger in the private sector. Lack of family support showed a positive association with anxiety in both public and private sectors, however the relationship is not significant. The insignificant relationship may be attributed to the measurement issues in the family support scale. The present study also finds that, at workplace level, the path from job demands to job satisfaction is mediated by anxiety in both the public and private sectors and the magnitude is larger in private sector workplaces.

This finding is particularly relevant as private sector workplaces are known to have a longer work hour culture due to performance pressures (Bond et al, 2000). In addition, private sector workplaces offer less family support to their employees compared to public sector workplaces (Dex and Smith, 2002). Unavailability of family support and excessive demands placed on employees increase the level of anxiety, which reduces employees' job satisfaction. This finding concurs with the finding at individual level that job demands affect job satisfaction through their effect on anxiety.

Of the work environment characteristics, autonomy and managerial support are positively associated with job satisfaction and organization commitment in both public and private sectors alike. The lack of family support showed a significant negative impact on organization commitment in the private sector only. This finding supports the earlier arguments that family support is not perceived as widely available to a large group of employees in the private sector (Dex and Smith, 2001). This may be seen as a lack of commitment to employee wellbeing. If higher levels of perceived family supportiveness can create an exchange of valued commitments by employees (Settoon et al, 1996), its absence may lead to less positive attitudes and behaviours.

Employees' shared experiences of their work environments do not have the expected direct impact on turnover at the workplace level. These results contradict earlier research findings which supported a direct predictive relationship between employees' positive experiences of their work environments and turnover (Allen, 2001; Carr et al, 2003; Ostroff, 1992; Thompson et al, 1999). These studies, however, have used a different set of work environment characteristics. However, these findings concurs the findings of MASEM analysis in chapter 3 that employees perceptions of their work environment will indirectly affect turnover through job satisfaction and organization commitment.

This study finds a positive association between perceived lack of family support and turnover, however the relationship is not significant. This finding contradicts the earlier finding (Vandenberg et al, 1999). However, it must be noted that the measures of flexibility in Vandenberg et al (1999) were obtained by managers. Lack of family support has not shown any significant association with any of the hypothesized outcome variable, except for organization commitment in the private sector. The non-significant relationships observed, for both samples, between lack of family support and outcome variables in this study need to be interpreted with caution. The family support in WERS 2004 is measured on a dichotomous scale which provides limited variability within the measures. Dichotomous response option scales tend to be less reliable, valid and discriminating than alternative scales that employ more response options (Cox, 1980). Furthermore, dichotomous response options are less suitable for accurately representing opinions than Likert type scales (Preston and

Colman, 2000). This limited scale variability may be the reason for the failure of some relationships to reach significance. To increase the scale variability, it is proposed to have multiple response options within items. For example, it would be more useful to tap how frequently each of the family support option is available to employees, rather than just asking if they are available or not. Thus, to capture both the availability and the frequency of availability of family support in workplaces, future research should use more response options such as 'none of the time', 'sometimes', 'most of the time', and 'always'.

This study found that a significant negative relationship exists between job satisfaction and turnover. However, the strength of relationship is weaker for private sector employees. In contrast to earlier empirical research and theoretical models of employee turnover that have been developed (Cotton and Tuttle, 1986; Griffith et al, 2000; Price and Mueller, 1986) this study did not find a statistically significant relationship between organization commitment and turnover. The predictive relationship between organization commitment and turnover was insignificant for both the public and private sector workplaces. This finding contrast with the conclusion drawn earlier based on the analysis of data from WERS 1998 that organization commitment has a significant negative association with turnover (SenGupta, 2005). However, confidence in the results of this study are strong given the measurement of organization commitment, the large sample size, the public versus private sector analysis, and type of statistical analysis used. Furthermore, the study conducted by SenGupta (2005) included a single item 'loyalty' as an indicator of organization commitment, whereas this study used the 3-item scale for organization commitment, as in WERS 2004.

Though none of the specified direct paths from work environment perceptions to turnover are significant at workplace level, this study finds that work environment perceptions have an indirect effect on turnover through job satisfaction in both the public and private sector workplaces. This finding strengthens the argument developed in earlier chapters (chapter 2 and 3) that work environment perceptions affect turnover indirectly through their effect on job attitudes. Autonomy and managerial support showed a significant indirect effect through job satisfaction on turnover. Thus job satisfaction is an important link between employees' perceptions

of their work environments and turnover. Specifically at workplace level, job satisfaction mediated the relationships between autonomy and turnover, and between managerial support and turnover. That is, autonomy and managerial support increase job satisfaction at workplace level, which in turn decreases turnover. These findings highlight the importance of developing the strategies to enhance employees' job satisfaction.

8.2.4 Research question 4

The fourth research question addressed in this study relates to the impact of gender and sector of employment on the hypothesized paths in the proposed model. The role of gender as a moderator has been analysed at individual level, whereas sector of employment has been included as a moderator at workplace level.

Gender has some limited impact on the strength of relationships between work environment perceptions and wellbeing at individual level. No significant differences in relationship are observed based on gender, thus the present analysis yields additional support for the notion that the influence of perceived work environment characteristics on employees' general and job-related wellbeing do not differ between men and women.

In response to the research question that addresses the potential impact of sector of employment (public versus private) on the turnover process, this study found that sector of employment has some limited impact on the predictive paths of the proposed model. The study thus does not support the need to design and implement differing strategies based on the sector of employment. The only difference based on sector of employment found in this study relates to the relationship between lack of family support and organization commitment. The results have indicated a significant negative relationship between perceived lack of family support and organization commitment in private sector workplaces. The same relationship, however, is not supported in, the public sector. Earlier studies have shown that public sector workplaces usually offer more family support than private sector workplaces (Goodstein, 1994; Ingram and Simons, 1995).

247

8.3 Conclusion

The findings of this research project support the notion of social exchange theory between employees and employers. Employees' perceptions that organizations value their efforts and care about their wellbeing lead them to reciprocate with positive attitudes and behaviour. The findings of this study suggest the importance of family support policies for employees' favourable attitudes and behaviours. The data shows that employees typically do not perceive their workplaces as family supportive. Lack of perceived family supportiveness has shown negative consequences for employee wellbeing, job attitudes and behaviour either directly or indirectly. This study has shown that lack of perceived family supportiveness has a negative impact on employee job satisfaction and organization commitment, and a positive impact on employee work-related anxiety. Employees expect that, in return for their hard work, their employing organizations should recognize their work and family responsibilities and offer them support to better manage these responsibilities. Both public and private sector workplaces can benefit from this finding and should offer a broad range of family support polices to all employees needing them. Organizations can enhance employee perceptions of the family support by widely communicating the availability of these policies and also by encouraging employees to use them. Furthermore, they can use these policies as a useful recruitment and retention strategy. Provision of work and family support that helps employees to achieve work-life balance is likely to improve organizations' image. Employees' may feel that their organization cares about them and their family needs. Thus, they may reciprocate by increasing job satisfaction and organization commitment, which in turn may reduce turnover.

The present study extends previous research by showing both direct and indirect relationships between work environment perceptions and turnover. At workplace level, several relationships are fully mediated by job satisfaction. Thus job satisfaction serves as an important link between work environment perceptions and turnover. Specifically, job satisfaction fully mediates the relationship between managerial support and turnover, and autonomy and turnover in both sectors. By

providing evidence that most of these relationships are fully mediated by job satisfaction, the present research shows that job satisfaction plays an important role in the turnover process by mediating more distal antecedents.

Though earlier research has examined the direct relationships between job demands and job attitudes and between family support and job attitudes, very little empirical research has examined the underlying processes by which job demands and lack of family support affect job attitudes. The present study has found that anxiety is the missing link.

8.4 Practical Implications

This study supports the need to analyse the work environment in which turnover is being studied in order to identify those variables that are particularly organizationally relevant to the turnover process. In this study, four indirect (work demands, autonomy, managerial support, and family support) and three direct (job satisfaction, organization commitment, and anxiety) associates of turnover were examined. The interrelationships between these variables were also examined.

The finding that the work demands-job attitudes relationship is mediated by anxiety has important implications for organizations. Managers need to be aware that any attempts to make jobs more complex and challenging in an attempt to increase job satisfaction will also increase anxiety which, in turn, will reduce job satisfaction. However, increasing managerial support may help in lowering anxiety and increasing job satisfaction.

In addition, managers need to consider that autonomy and managerial support may not directly affect turnover. Rather they increase job satisfaction, probably by signalling employees about the extent to which the organization cares about their wellbeing, which then reduces turnover. Thus, increased autonomy and managerial support must be seen as satisfaction and commitment enhancing strategies.

Although the study did not find any significant association between lack of family support and turnover, it did reveal that lack of family support is associated with poor wellbeing at both the individual and workplace level. Provision of family support that helps employees achieve work-family balance is likely to demonstrate to them that the organization cares about them and their family needs. Provision of family support is likely to reduce family interference with work. At the individual level, the lack of family support has a negative impact on the organization commitment of female employees. In addition, the indirect negative impact of the lack of family support on job satisfaction is also stronger for female employees. Thus, at the very least, if women dominate the workforce in an organization, managers should help them balance work and family life by offering family support.

Even more important than the provision of family support policies is the implementation of those policies. Analysis of data showed that a great majority of employees do not have access to family support arrangements, or they do not know if these arrangements are available to them. The challenge of integrating work and family life is part of everyday reality and is increasingly felt by men and women. Ever since women have increased their participation in the workforce and men are becoming more involved in housework and childcare, traditional role boundaries are diminishing. Most workers today, regardless of their gender, have family responsibilities and an employed partner. However, the jobs are still designed as if workers have no family responsibilities. Managers should realize the need to change the conventional workplace practices and provide adequate supports for both family wellbeing and satisfying work. In addition, these policies should be widely publicised within workplaces to ensure their effective usage.

8.5 Contributions

This study has examined psychological work demands, autonomy, managerial support and family support as antecedents of employee wellbeing, job attitudes and turnover. In addition, it has compared the results for public and private sector workplaces. Overall, this study has provided support for several unique relationships and thus, has made important contributions to the literature.

It was argued in Chapter 2 that social exchange theory and JDCS theory can explain the turnover process. This study has extended the current research based on JDCS theory in two ways. First, a new predictor variable has been added to the job demand-control-support model i.e. family support. Second, JDCS theory along with social exchange theory, has been used to examine employees' general and job-related wellbeing at the individual level, and employees' general and job-related wellbeing and turnover at workplace level. This study makes an important contribution by identifying the underlying mechanism through which family support policies relate to employees job-related wellbeing.

It was argued in Chapter 2, that further research examining the impact of gender and sector of employment on the specific pathways linking predictors with turnover is needed. Existing mainstream research examining turnover (Cotton and Tuttle, 1986; Rosin and Korabik, 1991; Griffith et al, 2000; Griffeth and Hom, 2001) has failed to adequately examine the impact of gender and sector of employment on the turnover process. From a theoretical perspective, this study has contributed to the existing literature by examining the impact of gender and sector of employment on the relationships examined in this study. Results have shown that the strength of relationships vary across sector of employment. However the findings suggest that a single theoretical model of turnover captures the turnover process for employees in both sectors. At the individual level, gender has some limited impact on the strength of relationships between work environment perceptions and wellbeing.

In addition to addressing the theoretical contribution of this research, this study has addressed a number of the methodological limitations of existing research as well. It has been identified in Chapter 2 that two aspects of turnover research limit the usefulness and generalizability of this area of work. First, the turnover research has focused predominantly on United States. Given the significant differences that exist across countries in respect to the policies and management practices adopted, research conducted outside of the United States is needed. Second, the focus of existing turnover research has been on developing models for individual turnover behaviour (Campion, 1991). Clearly, individual level research has revealed valuable insights into the factors that lead to individual turnover behavior. However, there

are practical reasons to understand and model establishment effects in turnover research. This study has provided the first multivariate, large scale analysis of the turnover process in British workplaces from a socio-psychological perspective. The study has not only provided a workplace level analysis of turnover, but has also considered the impact of gender and sector of employment. The majority of the variables studied in this research have not previously been studied for British workforce. Overall, the findings of this research revealed that the findings of US turnover research are generalizable to the UK workforce. On only one occasion did the findings deviate from that. Specifically, organization commitment was not significantly related to turnover.

One of the limitations associated with existing turnover studies, identified in Chapter 2, is methodological. Existing turnover research in UK has utilized ordinary regression techniques for statistical analysis (James and Hendry, 1991). Hence, the analyses have been largely limited to the examination of bivariate relationships. In contrast, this study has used structural equation modelling, which allowed a multi-variate process model of turnover to be developed and tested. In addition, various indirect relationships were tested and the moderating influence of gender and sector of employment on the pathways of turnover process was examined.

8.6 Limitations

The data for this study was obtained from a nationally representative survey dataset (WERS 2004), allowing the generalizability of research findings. However, several limitations to the present study should be considered.

The first limitation is the use of cross-sectional data, all relevant to the time they were collected. This implies that the analysis reported here could find only statistically significant associations; hence, cause and effect relations can not be inferred from the findings reported here. Longitudinal data would be needed from the same companies over time to uncover causal relationships (Dex and Smith, 2002). Therefore, future research that uses a longitudinal design may be better suited to determine the causal status of the relationships examined in this study.

The second potential limitation of this research is the exclusive use of single source, self report measures of all variables except voluntary turnover, which raises concerns about the common method variance. The contaminating effects of response bias can cause interpretational problems for the obtained results. However, earlier researchers (James et al, 1979; Hochwarter et al, 1999) have suggested that if common method variance is evident, the correlation matrix should reflect this tendency by showing consistently high correlations across variables. However, inspection of the correlation matrix (Table 7.11) suggests that such a pattern is not evident. Thus, method variance does not appear to be an issue in this study.

The third limitation is that of unmeasured variables. A number of additional variables might affect the relationships observed in this study. In this study, employees' perceptions of their work environment are limited to only four aspects (psychological work demands, autonomy, managerial and family support). The use of perceptual data for evaluating work environments is closely linked to the climate literature. Several dimensions have been proposed in the climate literature to evaluate employees' perceptions of their work environments, including co-worker support (Brown and Leigh, 1996; Koys and Decotiis, 1991) and reward orientation (Kopelman et al, 1990; Schneider et al, 1996). Future research can expand this research by including employee perceptions of co-worker support and reward orientation as a part of work environment characteristics.

In WERS 2004, workplaces are classified as public limited company, company limited by guarantee, partnership, trust/charity, co-operative, public service agency, and government owned limited company etc. To perform the multi-group analysis based on the sector of employment, workplaces are collapsed into two broader categories of public and private sector. It would be more insightful if the original classification of workplaces was used to make comparison both within and between public and private sector workplaces.

The fifth limitation pertains to the measurement of 'organization commitment'. 'Organization commitment' has been posited as a stable linkage between individual and organization. The definition of 'organization commitment' in this study

253

essentially focuses on 'affective commitment'. The extant literature has identified other forms of commitment (e.g. Allen and Meyer, 1990; Mowday et al, 1979). Continuance commitment reflects an understanding of the costs associated with leaving an organization and normative commitment reflects the employees' obligations to stay with the organization (Mowday et al, 1979). Earlier research has found that the three forms of commitment were significantly related to voluntary turnover and employee health and wellbeing (e.g. Meyer et al, 2002).

8.7 Future research

There are key areas that deserve the attention of future research as a result of the findings and limitations of this study. The present study could not find any support for several direct and indirect hypotheses involving family support and employee turnover. Future research, by improving the measures of family support, can re-examine these relationships in wider research settings.

The descriptive analysis of the employee profile (chapter 5) revealed that women are mostly employed in low paid and low status jobs. However, exploratory data analysis (chapter 6) revealed that they have expressed higher job satisfaction and organization commitment towards their employing organizations than men. Most of the low paid and low status jobs offer greater work flexibility. It may be that the higher job satisfaction and organization commitment is due to a greater ability to manage work and family roles. It would also be interesting to know that, if women do not get equal opportunities to high paid career jobs or they self select into low status and low paid jobs so they can balance their work and family roles. Future research using focus groups or in-depth interviews could explore the reasons for this pattern.

Present research has only used items on affective commitment, since the survey used in this study does not include appropriate items on the other forms of commitment. Future research might extend the present research by including all three forms of commitment (i.e. affective, continuance, and normative). For this purpose, Allen and Meyer's (1990) scale entailing all three forms of commitment may be used. A multi-

dimensional measure of organizational commitment would provide a better understanding of the relationships between the variables of interest for present study.

Future research may examine the role of gender composition on the turnover process at the workplace level. Men and women may perceive and react differently to work environments. An examination of gender differences would provide useful information, especially for public sector organizations, many of which are female-dominated.

In addition, future research may also examine the impact of the four aspects of work environments on work-family conflict. The survey used in this study does not include appropriate items for measuring work-family conflict. Previous research in the area of work-family conflict has shown that work role demands (Greenhaus and Parasuraman, 1999; Anderson et al, 2002), family support policies such as flexibility, job sharing and ability to work from home (Greenhaus, 1988; Mattis, 1990) and supervisor support (Thomas and Ganster, 1995; Allen, 2001; Anderson et al, 2002; Batt and Valcour, 2003; Darcy and McCarthy, 2007) are strong predictors of work-family conflict. In addition, work-family conflict has been related to a number of outcome variables including job satisfaction, organization commitment, psychological distress, life satisfaction, emotional exhaustion, job performance, absence and turnover intentions (Frone et al, 1992; Higgins et al, 1992; Netemeyer et, 1996; Kossek and Ozeki, 1998; Boles et al, 2001; Anderson et al, 2002; Posthuma et al, 2005; Mauno et al, 2006; Namasivayam and Zhao, 2007; Yavas et al, 2008). A multidimensional measure of work-family conflict, using Netemeyer et al's (1996) two forms of conflict (i.e., work-to-family and family-to-work) would provide a better understanding of the relationships between employees perceptions of their work environment, and their work-family conflict, wellbeing, attitudes and behaviour.

References

Note: ** studies are included in meta-analysis.

Abbott, J., De Cieri, H., & Iverson, R. D. (1998). Costing Turnover: Implications of Work/Family Conflict at Management Level. *Asia Pacific Journal of Human Resources,* 36(1), 25.

Abelson, M. A. (1987). Examination of Avoidable and unavoidable turnover, *Journal of Applied Psychology,* 72(3), 382-386.

Abelson, M. A., & Baysinger, B. D. (1984). Optimal and dysfunctional turnover: Toward an organizational level model. *Academy of Management Review,* 9(2), 331-341.

Ackroyd, S., Batt, R., Thompson, P. & Tolbert, PS (Eds.). NY: Oxford University Press. Baughman, R., DiNardi, D. & Holtz-Eakin, D.(2003). Productivity and wage effects of 'family-friendly'fringe benefits. *International Journal of Manpower,* 24(3), 247-259.

Acorn, S., Ratner, P. A., & Crawford, M. (1997). Decentralization as a determinant of autonomy, job satisfaction, and organizational commitment among nurse managers. *Nursing Research,* 46(1), 52.

Adams, G. A., King, L. A., & King, D. W. (1996). Relationships of job and family involvement, family social support, and work-family conflict with job and life satisfaction. *Journal of Applied Psychology,* 81(4), 411-420.

Addae M. Helena (2003), 'Dimensions, antecedents and consequences of absence legitimacy: From theory to empirical evidence in a nine nation study', Unpublished Doctoral Dissertation, National Library of Canada, Concordia university, Montreal, Canada.

**Ahuja, M. K., Chudoba, K. M., Kacmar, C. J., McKnight, D. H., & George, J. F. (2007). IT Road Warriors: Balancing Work Family Conflict, Job Autonomy, and Work Overload to mitigate Turnover Intentions. *MIS Quarterly, 31*(1), 1-17.

**Alder, G. S., Noel, T. W., & Ambrose, M. L. (2006). Clarifying the effects of internet monitoring on job attitudes: The mediating role of employee trust. *Information & Management, 43*(7), 894-903.

**Alexander, J. A., Lichtenstein, R., Oh, H. J., & Ullman, E. (1998). A causal model of voluntary turnover among nursing personnel in long-term psychiatric settings. *Research in Nursing & Health, 21*(5), 415-427.

**Allen, D. G., Shore, L. M., & Griffeth, R. W. (2003). The Role of Perceived Organizational Support and Supportive Human Resource Practices in the Turnover Process. *Journal of Management,* 29(1), 99-118.

Allen, M. W. (1996). The Relationship between Communication, Affect, Job Alternatives, and Voluntary Turnover Intentions. *Southern Communication Journal,* 61(3), 198-209.

**Allen, T. D. (2001). Family supportive work environments: The role of organizational perceptions. *Journal of Vocational Behaviour,* 58(3), 414-435.

Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology,* 5(2), 278-308.

Ambert M. A., Adler A. P., Adler P., Detzner F. D. (1995), Understanding and evaluating qualitative research, *Journal of Marriage and Family*, 57(4), 879-893.

Amick, B. C., & Celentano, D. D. (1991). Structural determinants of the psychosocial work environment: Introducing technology in the work stress framework. *Ergonomics*, 34(5), 625-646.

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.

Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behaviour*, 19, 235-258.

Anderson, R. A., Corazzini, K. N., & McDaniel, R. R. (2004). Complexity science and the dynamics of climate and communication: Reducing nursing home turnover. *The Gerontologist*, 44(3), 378-388.

**Anderson, S. E., Coffey, B. S., & Byerly, R. T. (2002). Formal organizational initiatives and informal workplace practices: Links to work-family conflict and job-related outcomes. *Journal of Management*, 28(6), 787-810.

Angle, H. L., & Perry, J. L. (1981). An empirical assessment of organizational commitment and organizational effectiveness. *Administrative Science Quarterly*, 26(1), 1-14.

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. (2005). Organizations and the intersection of work and family: A comparative perspective. In S. Ackroyd, R. Batt, P. Thompson & P. S. Tolbert (Eds.), *The Oxford Handbook of Work & Organization* NY: Oxford University Press.

Argyris, C. (1958). Some problems in conceptualizing organizational climate: A case study of a bank. *Administrative Science Quarterly*, 2(4), 501-520.

Armeli, S., Eisenberger, R., Fasolo, P., & Lynch, P. (1998). Perceived organizational support and police performance: The moderating influence of socio-emotional needs. *Journal of Applied Psychology*, 83(2), 288-297.

Arnold, H. J., & Feldman, D. C. (1982). A multivariate analysis of the determinants of job turnover. *Journal of Applied Psychology*, 67(3), 350-360.

Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37(3), 670-687.

Arthur, W., Bennett, W., & Huffcutt, A. I. (2001). Conducting Meta-Analysis Using Sas. London: Lawrence Erlbaum Associates.

**Aryee, S., & Stone, R. J. (1996). Work experiences, work adjustment and psychological well-being of expatriate employees in Hong Kong. *International Journal of Human Resource Management*, 7(1), 150-164.

**Aryee, S., Budhwar, P. S., & Chen, Z. X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. *Journal of Organizational Behavior*, 23(3), 267-285.

**Aryee, S., Luk, V., & Stone, R. (1998). Family-Responsive Variables and Retention-Relevant Outcomes Among Employed Parents. *Human Relations*, 51(1), 73-87.

Ashforth, B. E. (1985). Climate formation: Issues and extensions. *Academy of Management Review*, 10(4), 837-847.

**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.

Babin, B. J., & Boles, J. S. (1998). Employee behaviour in a service environment: a model and test of potential differences between men and women. *Journal of Marketing, 62, 77-91.*

Baker, E., Israel, B., & Schurman , S. (1996). Role of control and support in occupational stress: an integrated model. *Social Science and Medicine, 43, 1145-1159.*

Baltes, B. B., Briggs, T. E., Huff, J. W., Wright, J. A., & Neuman, G. A. (1999). Flexible and compressed workweek schedules: A meta-analysis of their effects on work-related criteria. *Journal of Applied Psychology, 84(4), 496-513.*

Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology, 27(1), 14-25.*

Baptiste, N. R. (2008). Tightening the link between employee wellbeing at work and performance. *Management Decision, 46(2), 284-309.*

Bardoel, E. A., Moss, S. A., Smyrnios, K., & Tharenou, P. (1999). Employee characteristics associated with the provision of work-family policies and programs. *International Journal of Manpower, 20(8), 563-577.*

Barnett, R. C., & Brennan, R. T. (1995). The relationship between job experiences and psychological distress: A structural equation approach. *Journal of Organizational Behavior, 16(3), 259-276.*

Barnett, R. C., & Brennan, R. T. (1997). Change in job conditions, change in psychological distress, and gender: A longitudinal study of dual-earner couples. *Journal of Organizational Behavior, 18(3), 253-274.*

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51(6), 1173-1182.*

Bartel, A. P. (1994). Productivity gains from the implementation of employee training programs. *Industrial Relations, 33(4), 411-425.*

Bartel, A. P. (1995). Training, wage growth, and job performance: Evidence from a company database. *Journal of Labor Economics, 13(3), 401-425.*

Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership.* Thousand Oaks, CA: Sage.

Batlis, N. C. (1980). The effect of organizational climate on job satisfaction, anxiety, and propensity to leave. *Journal of Psychology, 104, 232-240.*

Batt, R., & Valcour, P. M. (2003). Human Resources Practices as Predictors of Work-Family Outcomes and Employee Turnover. *Industrial Relations, 42(2), 189-220.*

Baysinger, B. D., & Mobley, W. H. (1982). *Employee Turnover: Individual and Organizational Analyses.* Texas: A And M University.

Becker, G. (1964). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. Chicago, University of Chicago Press.

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education (3rd Eds).* Chicago: University of Chicago Press.

Bedeian, A. G., Burke, B. G., & Moffett, R. G. (1988). Outcomes of Work-Family Conflict Among Married Male and Female Professionals. *Journal of Management, 14(3), 475-491.*

Beehr, T. A., & McGrath, J. E. (1992). Social support, occupational stress and anxiety. *Anxiety, Stress & Coping, 5(1), 7-19.*

Begg, C. B. (1994). Publication bias. In H. Cooper & L. V. Hedges (Eds.), The handbook of research synthesis (pp. 399–409). New York: Russell Sage Foundation.

**Behson, S. J. (2005). The relative contribution of formal and informal organizational work-family support. *Journal of Vocational Behavior, 66*(3), 487–500.

Bell, E., & Bryman, A. (2003). *Business research methods.* Oxford: Oxford University Press.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238-246.

Berg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41,* 247-252.

Bickel, R. (2007). *Multilevel analysis for applied research: It's just regression.* New York: The Guilford Press.

Bjornberg, A., & Nicholson, N. (2007). The family climate scales-development of a new measure for use in family business research. *Family Business Review, 20*(3), 229-246.

Blau, F. D., & Kahn, L. M. (1981). Race and sex differences in quits by young workers: Institute of labor and industrial relations, University of Illinois at Urbana-Champaign.

**Blau, G. (2007). Does a corresponding set of variables for explaining voluntary organizational turnover transfer to explaining voluntary occupational turnover? *Journal of Vocational Behavior, 70*(1), 135-148.

Blau, G. J., & Boal, K. B. (1987). Conceptualizing How Job Involvement and Organizational Commitment Affect Turnover and Absenteeism. *The Academy of Management Review, 12*(2), 288-300.

Blau,P. (1964). *Exchange and Power in Social Life.* New York: Wiley.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349-381). San-Francisco: Jossey-Bass.

Bliese, P. D., & Castro, C. A. (2000). Role clarity, work overload and organizational support: multilevel evidence of the importance of support. *Work & Stress, 14*(1), 65-73.

Bliese, P. D., & Halverson, R. R. (1996). Individual and nomothetic models of job stress: An examination of work hours, cohesion, and well-being. *Journal of Applied Social Psychology, 26*(13), 1171-1189.

Bliese, P. D., & Halverson, R. R. (1998). Group size and measures of group-level properties: an examination of Eta-squared and ICC values. *Journal of Management, 24*(2), 157-172.

Bliese, P. D., & Jex, S. M. (1999). Incorporating multiple levels of analysis into occupational stress research. *Work & Stress, 13*(1), 1-6.

Bliese, P. D., & Jex, S. M. (2002). Incorporating a multilevel perspective into occupational stress research: Theoretical, methodological, and practical implications. *Journal of Occupational Health Psychology, 7*(3), 265–276.

Bliese, P. D., Halverson, R. R., & Schriesheim, C. A. (2002). Benchmarking multilevel methods in leadership The articles, the model, and the data set. *The Leadership Quarterly, 13*(1), 3-14.

259

Bloom, P. J. (1996). The quality of work life in NAEYC accredited and non-accredited early childhood programs. *Early Education and Development, 7*(4), 301-317.

Bluedorn, A. (1982). The theories of turnover: causes, effects and meaning. *Research in the Sociology of Organizations, 1*, 75-128.

Boles, J. S. (1996). Influences of work-family conflict on job satisfaction, life satisfaction and quitting intentions among business owners: the case of family-operated businesses. *Family Business Review, 9*(1), 61-74.

Boles, J. S., Johnston, M. W., & Hair Jr, J. F. (1997). Role stress, work-family conflict and emotional exhaustion: Inter-relationships and effects on some work-related consequences. *Journal of Personal Selling & Sales Management, 17*(1), 17-28.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: Wiley.

Bond, S., Hyman, J., Summers, J., and Wise, S. (2002). *Family friendly working? Putting policy into practice.* York: York Publishing Services.

**Bordin, C., Bartram, T., & Casimir, G. (2007). The antecedents and consequences of psychological empowerment among Singaporean IT employees. *Management Research News, 30*(1), 34-46.

Boswell, W. R., & Olson-Buchanan, J. B. (2004). Experiencing mistreatment at work: the role of grievance filing, nature of mistreatment, and employee withdrawal. *Academy of Management Journal, 47*(1), 129-140.

Bosworth, D., Wilson, R., & Assefa, A. (1991, 23/24 September 1991). A human capital approach to training. Paper presented at the International Conference on the Economics of Training, Cardiff business school, Cardiff.

Bourbonnais, R., Brisson, C., Moisan, J., & Vezina, M. (1996). Job strain and psychological distress in white-collar workers. *Scandinavian Journal of Work Environment and Health, 22*(2), 139-145.

Boyar, S. L., Maertz Jr, C. P., Pearson, A. W., & Keough, S. (2003). Work-family conflict: a model of linkages between work and family domain variables and turnover intentions. *Journal of Managerial Issues, 15*(2), 175-192.

Bradley, J. R., & Cartwright, S. (2002). Social support, job stress, health, and job satisfaction among nurses in the United Kingdom. *International Journal of Stress Management, 9*(3), 163-182.

Brandt, C. J. (2000). Climate quality and climate consensus as mediators of the relationship between organizational antecedents and outcomes. *Journal of Applied Psychology, 85*(3), 331-348.

Brown, A., Charlwood, A., Forde, C., & Spencer, D. (2006). Changing job quality in Great Britain 1998-2004: Employment Relations Research Series.

Brown, C. (1990). Empirical evidence on private training. In R. Ehrenberg (Ed.), *Research in Labour Economics* (pp. 97-113). Greenwich, CT: JAI.

Brown, S. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin, 120*(2), 235-255.

Brown, S. P., & Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of Applied Psychology, 81*(4), 358-368.

Brown, S. P., & Peterson, R. A. (1993). Antecedents and consequences of salesperson job satisfaction: meta-analysis and assessment of causal effects. *Journal of Marketing Research, XXX*, 63-77.

Brown, S., Garino, G., & Martin, C. (2009). Firm performance and labour turnover: Evidence from the 2004 workplace employee relations survey. *Economic Modelling, 26*(3), 689-695.

Brown, S., Garino, G., Martin, C., Performance, F., & Turnover, L. (2008). Firm performance and labour turnover: evidence from the 2004 workplace employee relations survey. Sheffield Economic Research Paper Series SERP Number: 2007012.

Bruck, C. S., Allen, T. D., & Spector, P. E. (2002). The relation between work–family conflict and job satisfaction: A finer-grained analysis. *Journal of Vocational Behavior*, 60(3), 336-353.

Brunetto, Y., & Farr-Wharton, R. (2004). Does the talk affect your decision to walk: A comparative pilot study examining the effect of communication practices on employee commitment post-managerialism. *Management Decision*, 42(3/4), 579-600.

Bryce, J. and Haworth, J. (2003). Psychological wellbeing in a sample of male and female office workers. *Journal of Applied Social Psychology*, 33(3), 565-585.

Bryman A. & Bell E. (2003), *Business research methods*, New York: Oxford University Press.

Bryson, A., Charlwood, A., Forth, J., Street, H., Building, M. K., & Square, S. (2006). Worker voice, managerial response and labour productivity: an empirical investigation. *Industrial Relations Journal*, 37(5), 438-455.

Buchan, J. (1994). Lessons from America? US magnet hospitals and their implications for UK nursing. *Journal of Advanced Nursing*, 19(2), 373-384.

Budd, J. W. (2004). *Employment with a human face: Balancing efficiency, equity, and voice.* Ithaca, NY: Cornell university press.

Budd, J. W., & Mumford, K. (2005). Family-friendly work practices in Britain: Availability and perceived accessibility. IZA Discussion Paper No. 1662.

Burgess, S. M., & Nickell, S. (1990). Labour turnover in UK manufacturing. *Economica*, 57(227), 295-317.

Burke, M. J., Borucki, C. C., & Hurley, A. E. (1992). Reconceptualizing psychological climate in a retail service environment: a multiple-stakeholder perspective. *Journal of Applied Psychology*, 77(5), 717-729.

Burke, R. J. (1988). Some antecedents and consequences of work family conflict. *Journal of Applied Psychology*, 78, 402-412.

Butler Jr, J. K. (1999). Trust expectations, information sharing, climate of trust, and negotiation effectiveness and efficiency. *Group & Organization Management*, 24(2), 217-238.

Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming.* New York: Lawrence Erlbaum.

Byron, K. (2005). A meta-analytic review of work–family conflict and its antecedents. *Journal of Vocational Behavior*, 67(2), 169-198.

Cahill, J., and Landsbergis, P. A. (1996). Job strain among post office mail handlers. *International Journal of Health Services: Planning, Administration, Evaluation*, 26(4), 731-750.

Campion, M. A. (1991). Meaning and measurement of turnover: Comparison of alternative measures and recommendation for research. *Journal of Applied Psychology*, 76, 199-212.

Capowski, G. (1996). The joy of flex. *Management Review*, 85(3), 12-18.

Caracciolo, E. (2001). The family-friendly workplace: The EC position. *International Journal of Comparative Labour Law and Industrial Relations*, 17(3), 323-344.

Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multi-dimensional measure of work-family conflict. *Journal of Vocational Behavior*, 56, 249-276.

Carmeli, A. (2005). The relationship between organizational culture and withdrawal intentions and behaviour. *International Journal of Manpower*, 26(2), 177-207.

Carson, K. P., Schriesheim, C. A., & Kinicki, A. J. (1990). The usefulness of the 'Fail-Safe N' statistic in meta-analysis. *Educational and Psychological Measurement*, 50, 233- 243.

Carson, P. P., Carson, K. D., & Roe, C. W. (1993). Social power bases: A meta-analytic examination of interrelationships and outcomes. *Journal of Applied Social Psychology*, 23(14), 1150-1169.

Cascio, W. F. (1986). *Managing human resources: Productivity, quality of work life, profits*. New York: McGraw Hill.

Cascio, W. F. (1991). *Costing human resources: The financial impact of behavior in organizations*. Boston: PSW-Kent.

Cascio, W. F. (2003). *Managing human resources: Productivity, quality of work life, profits* (6th ed.). New York: McGraw-Hill

Cascio, W. F., & Aguinis, H. (1998). *Applied psychology in human resource management*. Upper Saddle River, NJ: Prentice Hall.

Casper, W. J., Martin, J. A., Buffardi, L. C., & Erdwins, C. J. (2002). Work-family conflict, perceived organizational support, and organizational commitment among employed mothers. *Journal of Occupational Health Psychology*, 7(2), 99-108.

Castro, S. L. (2002). Data analytic methods for the analysis of multilevel questions: A comparison of intra-class correlation coefficients, $r_{wg(j)}$, hierarchical linear modeling, within-and between-analysis, and random group re-sampling. *The Leadership Quarterly*, 13(1), 69-93.

Cartwright, D. (1950). Emotional dimensions of group life. In M. L. Reymart (Ed.), *Feelings and Emotions*. New York: McGraw Hill.

Chapman, N. J., Ingersoll-Dayton, B., & Neal, M. B. (1994). Balancing the multiple roles of work and care giving for children, adults and elders. In G. W. Keita & J. J. Hurrell (Eds.), *Job stress in a changing workforce: Investigating gender, diversity and family issues*. Washington, DC: American Psychological Association.

Chartered Institute Of Personnel And Development (2006) Recruitment, Retention and Turnover [online]. London: CIPD. Available at: http://www.cipd.co.uk/NR/rdonlyres/A5316993-E9EB-413D-A673-D1D6A5063DD3/0/recruitretntsurv06.pdf

Chartered Institute Of Personnel And Development (2007) Recruitment, Retention and Turnover [online]. London: CIPD. Available at: www.cipd.co.uk/NR/...3941.../recruitretntsurv07.pdf

Chartered Institute Of Personnel And Development (2008) Recruitment, Retention and Turnover [online]. London: CIPD. Available at: http://www.cipd.co.uk/subjects/recruitmen/general/_recruitment_200 8.htm?IsSrchRes=1

Chatman, J. (1991). Matching people and organizations: Selection and socialization in public accounting firms. *Administrative Science Quarterly*, 36, 459–484.

Chay, Y. W. (1993). Social support, individual differences and well-being: A study of small business entrepreneurs and employees. *Journal of Occupational and Organizational Psychology*, 66(4), 285-302.

Chen, G., Mathieu, J. E., & Bliese, P. D. (2004). A framework for conducting multi-level construct validation. *Research in Multilevel Issues: Multilevel Issues in Organizational Behavior and Processes*, 3, 273–303.

**Chen, H. C., Chu, C. I., Wang, Y. H., & Lin, L. C. (2006). Turnover factors revisited: A longitudinal study of Taiwan-based staff nurses. *International Journal of Nursing Studies, In Press, Corrected Proof, Available online 29 September 2006*.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. *Structural Equation Modeling*, 9(2), 233-255.

Cheung, M. W. L. (2008). A model for integrating fixed-, random-, and mixed-effects meta-analyses into structural equation modeling. *Psychological methods*, 13(3), 182-202.

Cheung, M. W. L., & Chan, W. (2005a). Meta-Analytic Structural Equation Modeling: A Two-Stage *Approach. Psychological Methods*, 10(1), 40-6425.

Cheung, M. W. L., & Chan, W. (2005b). Classifying correlation matrices into relatively homogeneous subgroups: A cluster analytic approach. *Educational and Psychological Measurement*, 65(6), 954-979.

**Chiu, W. C. K., & Ng, C. W. (2001). The differential effects of work-and family-oriented women-friendly HRM on OC and OCB: The case for single female employees in Hong Kong. *The International Journal of Human Resource Management*, 12(8), 1347-1364.

**Christie, M. D., & Shultz, K. S. (1998). Gender differences on coping with job stress and organizational outcomes. *Work & Stress*, 12(4), 351-361.

Chu, C. I., Lee, M. S., & Hsu, H. M. (2006). The impact of social support and job stress on public health nurses' organizational citizenship behaviors in rural Taiwan. *Public Health Nursing*, 23(6), 496-505.

Churchill Jr, G. A., Ford, N. M., & Walker Jr, O. C. (1976). Organizational climate and job satisfaction in the salesforce. *Journal of Marketing Research*, 13(4), 323-332.

Clark, A. E. (1997). Job satisfaction and gender: why are women so happy at work? *Labour Economics*, 4(4), 341-372.

Clark, A. E. (2001). What really matters in a job? Hedonic measurement using quit data. *Labour Economics*, 8(2), 223-242.

Clark, A. E., & Oswald, A. J. (1996). Satisfaction and comparison income. *Journal of Public Economics*, 61(3), 359-381.

Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, happiness, and utility: an explanation for the Easterlin paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95-144.

Clegg, C. W. (1983). Psychology of employee lateness, absence and turnover: A methodological critique and an empirical study. *Journal of Applied Psychology*, 68(1), 88-101.

Cliffe, S. (1998). Knowledge management: The well-connected business. *Harvard Business Review*, 76(4), 17-21.

Coff, R. W. (1997). Human assets and management dilemmas: Coping with hazards on the road to resource-based theory. *Academy of Management Review*, 22(2), 374-402.

Cohen, A. (1993). Organizational commitment and turnover: A meta-analysis. *Academy of Management Journal*, 36, 1140-1157.

**Cohen, A. (1997). Non-work influences on withdrawal cognitions: An empirical examination of an overlooked issue. *Human Relations*, 50(12), 1511-1536.

Cohen, A. & Hudecek, N. (1993). Organizational commitment-turnover relationship across occupational groups: A meta-analysis. *Group and Organization Management*, 18(2), 188-213.

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Newbury Park, CA: Sage.

Cohen, J. & Cohen, P. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. New York: Lawrence Erlbaum Associates.

**Connell, J., Ferres, N., & Travaglione, T. (2003). Engendering trust in manager-subordinate relationships. *Personnel Review*, 32(5), 569-587.

Conyon, M. J. (1998). Directors pay and turnover: An application to a sample of large UK firms. *Oxford Bulletin of Economics and Statistics*, 60(4), 485-507.

Cook D. T. & Reichardt S. C. (1979). Beyond qualitative versus quantitative methods, in Cook D. T. and Reichardt S. C. (Eds), *Qualitative and quantitative methods in evaluation research* (7-32), London: Sage.

Cook, E. (1989). Measuring Feminist Consciousness. *Women and Politics*, 9, 71-88.

Cooper, C. L., Dewe, P., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.

Cosh, A., & Hughes, A. (1997). Executive remuneration, executive dismissal and institutional shareholdings. *International Journal of Industrial Organization*, 15(4), 469-492.

Cotton, J. L., & Tuttle, J. M. (1986). Employee turnover: A meta-analysis and review with implications for research. *Academy of Management Review*, 11(1), 55-70.

Cox, E. P. (1980). The optimal number of response alternatives for a scale: A review, *Journal of Marketing Research*, 17, 407-422.

Cox, S. A. (1999). Group communication and employee turnover: How co-workers encourage peers to voluntarily exit. *Southern Communication Journal*, 64(3), 181-192.

Coyle-Shapiro, J. A. M., & Kessler, I. (2003). The employment relationship in the UK public sector: a psychological contract perspective. *Journal of Public Administration Research and Theory*, 13(2), 213-230.

Cropanzano, R., & Mitchell, M. S. (2005). Social Exchange Theory: An Interdisciplinary Review. *Journal of Management*, 31(6), 874-900.

**Cropanzano, R., Howes, J. C., Grandey, A. A., & Toth, P. (1997). The relationship of organizational politics and support to work behaviors, attitudes, and stress. *Journal of Organizational Behavior*, 18(2), 159-180.

**Crossley, C. D., Bennett, R. J., Jex, S. M., & Burnfield, J. L. (2007). Development of a global measure of job embeddedness and integration into a traditional model of voluntary turnover. *Journal of Applied Psychology*, 92(4), 1031-1042.

Cully, M., Woodland, S., O'Reilly, A., & Dix, G. (1999). *Britain at work*. London: Routledge.

**Cunningham, J. B., & MacGregor, J. (2000). Trust and the design of work: Complementary constructs in satisfaction and performance. *Human Relations*, 53(12), 1575-1591.

**Currivan, D. B. (1999). The causal order of job satisfaction and organizational commitment in models of employee turnover. *Human Resource Management Review*, 9(4), 495-524.

Curry, J. P., Wakefield, D. S., Price, J. L., & Mueller, C. W. (1986). On the causal ordering of job satisfaction and organizational commitment. *Academy of Management Journal*, 29(4), 847-858.

Cuyper, N..D., & Witte, H. D. (2006). The impact of job insecurity and contract type on attitudes, well-being and behavioural reports: A psychological contract perspective. *Journal of Occupational and Organizational Psychology*, 79(3), 395-409.

Dalessio, A., Silverman, W. H., & Shuck, J. R. (1986). Paths to turnover: A re-analysis and review of existing data on the Mobley, Horner and Hollingsworth turnover model. *Human Relations*, 39, 245-264.

Dalton, D. R., & Mesch, D. J. (1990). The impact of flexible scheduling on employee attendance and turnover. *Administrative Science Quarterly*, 35(2), 370-387.

Dalton, D. R., & Todor, W. D. (1993). Turnover, transfer, absenteeism: An interdependent perspective. *Journal of Management*, 19(2), 193-219.

Dalton, P. & Van der Klaauw, W. (1999). The turnover of teachers: A competing risks explanation. *Review of Economics and Statistics*, 81(3), 543-550.

Dansereau, F., & Alutto, J. A. (1990). Level of analysis issues in climate and culture research. In Schneider, B. (Eds), *Organizational climate and culture*, 193-236.

**Darcy, C., & McCarthy, A. (2007). Work-family conflict: An exploration of the differential effects of a dependent child's age on working parents. *Journal of European Industrial Training*, 31(7), 530-549.

Day, D. V., & Bedeian, A. G. (1991). Predicting job performance across organizations: The interaction of work orientation and psychological climate. *Journal of Management*, 17(3), 589-600.

**De Croon, E. M., Sluiter, J. K., Broersen, J. P. J., Blonk, R. W. B., & Frings-Dresen, M. H. W. (2004). Stressful work, psychological job strain, and turnover: A 2-year prospective cohort study of truck drivers. *Journal of Applied Psychology*, 89(3), 442-454.

**De Cuyper, N., & De Witte, H. (2006). Autonomy and workload among temporary workers: Their effects on job satisfaction, organizational commitment, life satisfaction, and self-rated performance. *International Journal of Stress Management*, 13(4), 441- 459.

**De Gilder, D. (2003). Commitment, trust and work behaviour. *Personnel Review*, 32(5), 588-604.

De Jonge, J., & Kompier, M. A. J. (1997). A critical examination of the demand-control-support model from a work psychological perspective. *International Journal of Stress Management*, 4(4), 235-258.

**De Jonge, J., & Schaufeli, W. B. (1998). Job characteristics and employee well-being: A test of Warr's Vitamin Model in health care workers using structural equation modelling. *Journal of Organizational Behavior*, 19(4), 387-407.

De Jonge, J., Bosma, H., Peter, R., & Siegrist, J. (2000). Job strain, effort-reward imbalance and employee well-being: a large-scale cross-sectional study. *Social Science & Medicine*, 50(9), 1317-1327.

De Jonge, J., Dormann, C., Janssen, P. P. M., Dollard, M. F., Landerweerd, J. A., & Nijhuis, F. J. N. (2001). Testing reciprocal relationships between job characteristics and psychological well-being: A cross-lagged structural equation model. *Journal of Occupational and Organizational Psychology*, 74(1), 29-46.

De Jonge, J., Janssen, P. P. M., & Van Breukelen, G. J. P. (1996). Testing the demand-control-support model among healthcare professionals: A structural equation model. *Work & Stress*, 10,209-224.

**DeConinck, J., & Bachmann, D. (2005). An analysis of turnover among retail buyers. *Journal of Business Research*, 58(7), 874-882.

DeCoster, J. (2003). Meta-Analysis Notes. Unpublished manuscript. The Netherlands, Free University of Amsterdam, Department of Social Psychology.

Delery, J. E., Gupta, N., Shaw, J. D., Jenkins Jr, G. D., & Ganster, M. L. (2000). Unionization, compensation, and voice effects on quits and retention. *Industrial Relations*, 39(4), 625-645.

Den Dulk, L. (2001). Work-family arrangements in organizations: An international comparison. In T. v. d. Lippe & L. v. Dijk (Eds.), *Women's Employment in a Comparative Perspective* (pp. 59-84). New York: Walter de Gruyter, Inc.

Denison, D. R. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*, 21(3), 619-654.

Deshpande, S. P. (1996). The impact of ethical climate types on facets of job satisfaction: An empirical investigation. *Journal of Business Ethics*, 15(6), 655-660.

Dex, S., & Scheibl, F. (1999). Business performance and family-friendly policies. *Journal of general management*, 24(4), 22-37.

Dex, S., & Smith, C. (2002). *The nature and pattern of family-friendly employment policies in Britain*. Bristol: The Policy Press.

Dex, S., Smith, C., & Winter, S. (2001). Effects of family-friendly policies on business performance: Judge Institute Research Paper WP 22/2001, Cambridge: University of Cambridge.

**Diefendorff, J. M., Richard, E. M., & Gosserand, R. H. (2006). Examination of situational and attitudinal moderators of the hesitation and performance relation. *Personnel Psychology*, 59(2), 365-393.

Ding, L., Velicer, W. F., & Harlow, L. L. (1995). Effects of estimation methods, number of indicators per factor, and improper solutions on structural equation modeling fit indices. *Structural Equation Modeling*, 2(2), 119-143.

**Dodd, N. G., & Ganster, D. C. (1996). The interactive effects of variety, autonomy, and feedback on attitudes and performance. *Journal of Organizational Behavior*, 17(4), 329-347.

Dolcos, S. M. (2006). Managing life and work demands: the impact of organizational support on work-family conflict in public and private sectors. Unpublished Doctoral Dissertation. Raleigh, North Carolina: North Carolina State University.

Dolton, P., & Klaauw, W. (1999). The turnover of teachers: A competing risks explanation. *Review of Economics and Statistics*, 81(3), 543-550.

Donnelly, D. P., & Quirin, J. J. (2006). An extension of Lee and Mitchell's unfolding model of voluntary turnover. *Journal of Organizational Behavior*, 27(1), 59-77.

**Downs, C. W., Downs, A., Potvin, T., Varona, F., Gribas, J. S., & Ticehurst, W. (1996, May 23-27). *A cross-cultural comparison of relationships between organizational commitment and organizational communication*. Paper presented at the 46th Annual Conference of the International Communication Association, Albuquerque, New Mexico.

Droege, S. B., & Hoobler, J. M. (2003). Employee turnover and tacit knowledge diffusion: a network perspective. *Journal of Managerial Issues*, 15(1), 50-66.

Drory, A. (1993). Perceived political climate and job attitudes. *Organization Studies*, 14(1), 59-71.

Dunahoo, C. L., Geller, P., & Hobfoll, S. E. (1996). Woman's coping: Communal versus individualistic orientation. In M. J. Schabracq, J. A. M. Winnubst, &

C. L. Cooper (Eds.), *Handbook of work and health psychology* (pp 183- 204). Chichester, UK: John Wiley & Sons.

Duxbury, L. E., & Higgins, C. A. (1991). Gender differences in work-family conflict. *Journal of Applied Psychology*, 76(1), 60-74.

Duxbury, L. E., Higgins, C. A., & Network, W. (2001). Work-life balance in the new millennium: Where are we? Where do we need to go? Canadian Policy Research Networks Inc.

Duxbury, L., Higgins, C., & Lee, C. (1994). Work-family conflict: A comparison by gender, family type, and perceived control. *Journal of Family Issues*, 15(3), 449-466.

Dyer, N. G., Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *The Leadership Quarterly*, 16(1), 149-167.

Eaton, S. C. (2003). If you can use them: Flexibility policies, organizational commitment, and perceived performance. *Industrial Relations*, 42(2), 145-167.

Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior*, 66(1), 124-197.

Edward, J. R., & Rothbard, N. P. (2000). Mechanisms linking work anf family: clarifying the relationship between work and family constructs. *Academy of Management Review*, 25, 178-199.

Edwards, J. R. (1991). Person-Job fit: A conceptual integration, literature review, and methodological critique. In C. L. Cooper and I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp 283-357). New York: Wiley.

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, 86(1), 42-51.

Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived Organizational Support, Discretionary Treatment, and Job Satisfaction. *Journal of Applied Psychology*, 82, 812-820.

Eisenberger, R., Fasolo, P., & Davis-LaMastro, V. (1990). Perceived organizational support and employee diligence, commitment and innovation. *Journal of Applied Psychology*, 75(1), 51-59.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500-507.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (2004). Perceived organizational support. In J. A. M. Coyle-Shapiro (Ed.), *The Employment Relationship: Examining Psychological and Contextual Perspectives* (pp 206-225). Oxford University Press.

**Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology*, 87(3), 565-573.

Ezra, M., & Deckman, M. (1996). Balancing work and family responsibilities: Flextime and child care in the federal government. *Public Administration Review*, 56(2), 174-179.

Feeley, T. H., & Barnett, G. A. (1997). Predicting employee turnover. *Human Communication Research*, 23(3), 370-387.

Felli, L., & Harris, C. (1996). Learning, wage dynamics, and firm-specific human capital. *Journal of Political Economy*, 104(4), 838-868.

Fern, E. F., & Monroe, K. B. (1996). Effect-size estimates: Issues and problems in interpretation. *Journal of Consumer Research*, 23(2), 89-105.

Fernandez, J. P. (1986). *Child care and corporate productivity*. Lexington, Mass: DC Health.

Fernie, S., & Metcalf, D. (1995). Participation, contingent pay, representation and workplace performance: evidence from Great Britain. *British Journal of Industrial Relations*, 33(3), 379-415.

Festinger, L., Back, K., Schachter, S., Kelly, H., & Thibaut, J. (1950). *Theory and Experiment in Social Communication*. Ann Arbour: Institute for social Research.

Field, A. P. (2001). Meta-Analysis of correlation coefficients: A Monte Carlo comparison of fixed and random effects methods. *Psychological Methods*, 6(2), 161-180.

Fierman, J. (1994). Are companies less family friendly? *Fortune*, 129, 64-67.

Filstead J. W. (1979), Qualitative methods: A needed perspective in evaluation research. In D. T. Cook & S. C. Reichrdt (Eds.), *Qualitative and quantitative methods in evaluation research* (pp 33-48). London: Sage.

Finegan, J. E., & Laschinger, H. K. S. (2001). The antecedents and consequences of empowerment: A gender analysis. *The Journal of Nursing Administration*, 31(10), 489-497.

Fletcher, B., & Jones, F. (1993). A refutation of Karasek's demand-discretion model of occupational stress with a range of dependent measures. *Journal of Organizational Behavior*, 14(4), 319-330.

Fletcher, C., & Williams, R. (1996). Performance management, job satisfaction and organizational commitment. *British Journal of Management*, 7(2), 169-179.

Flinn, C. J. (1986). Wages and job mobility of young workers. *The Journal of Political Economy*, 94(3), 88-110.

Ford, M. T., Heinen, B. A., & Langkamer, K. L. (2007). Work and family satisfaction and conflict: a meta-analysis of cross-domain relations. *Journal of Applied Psychology*, 92(1), 57-80.

Forehand, G. A., & Gilmer, B. V. H. (1964). Environmental variation in studies of organizational behavior. *Psychological Bulletin*, 62, 361-382.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388.

Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. *Journal of Organizational Behavior*, 20(6), 915-931.

Friedlander, F., & Greenberg, S. (1971). Effect of job attitudes, training, and organization climate on performance of the hard-core unemployed. *Journal of Applied Psychology*, 55(4), 287-295.

Friedman, D. E., & Johnson, A. A. (1997). Moving from programs to culture change: The next stage for the corporate work-family agenda. In S. Parasuraman & J. Greenhaus (Eds.), *Integrating work and family: Challenges and choices for a changing world*. Westport, CT: Qurom Books.

Friedman, S. D., & Greenhaus, J. H. (2000). *Work and Family--Allies Or Enemies?: What Happens When Business Professionals Confront Life Choices*. USA: Oxford University Press.

Friendly, M. (1994). Mosaic displays for multi-way contingency tables. *Journal of the American Statistical Association*, 89(425), 190-200.

Frijters, P., Shields, M. A., Price, S. W., & Building, N. (2004). To teach or not to teach? Panel data evidence on the quitting decision. IZA Discussion Paper No. 1164.

Frone, M. R., Russell, M., & Barnes, G. M. (1996). Work-family conflict, gender and health related outcomes: A study of employed parents in two community samples. *Journal of Occupational Psychology*, 1, 57-69.

Frone, M. R., Russell, M., & Cooper, M. L. (1992a). Antecedents and outcomes of work-family conflict: Testing the model of the work-family interface. *Journal of Applied Psychology*, 77, 65-78.

Frone, M. R., Russell, M., & Cooper, M. L. (1992b). Prevalence of work-family conflict: Are work and family boundaries asymmetrically permeable? *Journal of Organizational Behavior*, 13, 723- 729.

Frone, M. R., Russell, M., & Cooper, M. L. (2000). Antecedents and Outcomes of Work-family Conflict: Testing a Model of the Work-family Interface. In Sastry, N. and Pandey, S. (Eds.) *Women Employees and Human Resource Management*. Hyderabad: Universities Press (India) Limited.

Frone, M. R., Yardley, J. K., & Markel, K. S. (1997). Developing and testing an integrative model of the work-family interface. *Journal of Vocational Behavior*, 50, 145- 167.

Furlow, C. F., & Beretvas, S. N. (2006). Meta-analytic methods of pooling correlation matrices for structural equation modeling under different patterns of missing data [Electronic Version]. Theses and Dissertations from The University of Texas at Austin.

Galinsky, E. (1988). The impact of supervisors' attitudes and company culture on work/family adjustment. *Annual Meeting of American Psychological Association*, Atlanta.

Ganesan, S. (1994). Determinants of long term orientation in buyer and seller relationships. *Journal of Marketing*, 58(2), 1-19.

Ganster, D. C., Fusilier, M. R., & Mayes, B. T. (1986). Role of social support in the experience of stress at work. *Journal of Applied Psychology*, 71(1), 102-110.

Ganster, D. C., Mayes, B. T., Sime, W. E., & Tharp, G. D. (1982). Managing organizational stress: A field experiment. *Journal of Applied Psychology*, 67(5), 533-542.

Garino, G. and Martin, C. (2007), The impact of labour turnover: Theory and evidence from UK micro data, Discussion Paper 10, 2005, University of Leicester.

Garson, D. (2006). Quantitative methods in public administration [Electronic version]. http://www2.chass.ncsu.edu/garson/pa765/weekly.htm. Retrieved 12th March 2009.

Gautam, T., Van Dick, R., Wagner, U., Upadhyay, N., & Davis, A. J. (2005). Organizational citizenship behavior and organizational commitment in Nepal. *Asian Journal of Social Psychology*, 8(3), 305-314.

Gazioglu, S., & Tansel, A. (2004). Job satisfaction, work environment and relations with managers in Britain. ERC Working Paper no. 03/04, Department of Economics, Middle East Technical University, Ankara.

**Gbadamosi, G., Ndaba, J., & Oni, F. (2007). Predicting charlatan behaviour in a non-Western setting: lack of trust or absence of commitment? *Journal of Management Development*, 26(8), 753-769.

George, J. M., & Bettenhausen, K. (1990). Understanding pro-social behavior, sales performance, and turnover: A group-level analysis in a service context. *Journal of Applied Psychology*, 75(6), 698-709.

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.

Geurts, S., Schaufeli, W., & De Jonge, J. (1998). Burnout and intention to leave among mental health-care professionals: A social psychological approach. *Journal of Social and Clinical Psychology*, 17, 341-362.

Gillespie, N. A., & Mann, L. (2004). Transformational leadership and shared values: the building blocks of trust. *Journal of Managerial Psychology*, 19(6), 588-607.

Ginsberg, L. H. (1998). Introduction: an overview of rural social work. In L. H. Ginsberg (Ed.), *Social work in rural communities* (3rd ed.). Alexandria, VA: Council on Social Work Education.

Glass, G. V. (1976). Primary, Secondary, and Meta-Analysis of Research. *Educational Researcher*, 5(10), 3-8.

Glass, J. (2000). Envisioning the Integration of Family and Work: Toward a Kinder, Gentler Workplace. *Contemporary Sociology*, 29(1), 129-143.

Glass, J. L., & Estes, S. B. (1997). The family responsive workplace. *Annual Reviews in Sociology*, 23(1), 289-313.

Glass, J. L., & Finley, A. (2002). Coverage and effectiveness of family-responsive workplace policies. *Human Resource Management Review*, 12(3), 313-337.

Glass, J. L., & Riley, L. (1997). Family responsive policies and employee retention following childbirth. *Social Forces*, 76(4), 1401-1435.

Glebbeek, A. C., & Bax, E. H. (2004). Is high employee turnover really harmful? An empirical test using company records. *Academy of Management Journal*, 47(2), 277-286.

Glick, W. H. (1985). Conceptualizing and measuring organizational and psychological climate: Pitfalls in multilevel research. *Academy of Management Review*, 10(3), 601-616.

Goldstein, H. (1998). *Multilevel models: Encyclopaedia of biostatistics* (pp 2725-2731). London: Wiley.

Gonzalez-Roma, V., Peiro, J. M., Lloret, S., & Zornoza, A. (1999). The validity of collective climates. *Journal of Occupational and Organizational Psychology*, 72(1), 25-40.

Good, L. K., Sisler, G. F., & Gentry, J. W. (1988). Antecedents of turnover intentions among retail management personnel. *Journal of Retailing*, 64, 295-314.

Goodstein, J. D. (1994). Institutional pressures and strategic responsiveness: employer involvement in work-family issues. *Academy of Management Journal*, 37(2), 350-382.

**Gopinath, C., & Becker, T. E. (2000). Communication, procedural justice, and employee attitudes: Relationships under conditions of divestiture. *Journal of Management*, 26(1), 63.

Gottlieb, B. H., Kelloway, E. K., & Martin-Matthews, A. (1996). Predictors of work-family conflict, stress, and job satisfaction among nurses. *Canadian Journal of Nursing Research*, 28(2), 99-117.

Gould-Williams, J., & Davies, F. (2005). Using social exchange theory to predict the effects of HRM practice on employee outcomes. *Public Management Review*, 7(1), 1-24.

Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54, 350-370.

**Grandey, A. A., Fisk, G. M., & Steiner, D. D. (2005). Must 'service with a smile' be stressful? The moderating role of personal control for American and French employees. *Journal of Applied Psychology*, 90(5), 893–904.

Grant-Vallone, E., & Donaldson, S. (2001). Consequences of work family conflict on employee well being over time. *Work & Stress*, 15(3), 214- 226.

Grawitch, M. J., & Munz, D. C. (2004). Are your data non-independent? A practical guide to evaluating non-independence and within-group agreement. *Understanding Statistics*, 3(4), 231-257.

Gray, H. (2002). Family-friendly working: What a performance! An analysis of the relationship between the availability of family-friendly policies and establishment performance. CEPDP, 529. Centre for Economic Performance, London School of Economics and Political Science, London, UK.

Gray, J., & Laidlaw, H. (2002). Part-time employment and communication satisfaction in an Australian retail organisation. *Employee Relations*, 24(2), 211-228.

Green, F, & McIntosh, S. (2001) The intensification of work in Europe. *Labour Economics*, 8, 291-308.

Green, F. (2004). Work intensification, discretion and the decline in wellbeing at work. *Eastern Economic Journal*, 30(4), 615-625.

Greenhalgh, C., & Mavrotas, G. (1996). Job training, new technology and labour turnover. *British Journal of Industrial Relations*, 34(1), 131-150.

Greenhaus, J. (1988). The intersection of work and family roles: individual, interpersonal and organizational issues. *Journal of Social Behavior and Personality*, 3, 23-44.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76-88.

Greenhaus, J. H., & Parasuraman, S. (1986). A work-non-work interactive perspective of stress and its consequences. *Journal of Organizational Behavior Management*, 8, 37-60.

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: a theory of work-family enrichment. *The Academy of Management Review*, 31(1), 72-92.

Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The relation between work-family balance and quality of life. *Journal of Vocational Behavior*, 63(3), 510-531.

Greenhaus, J. H., Collins, K. M., Singh, R., & Parasuraman, S. (1997). Work and Family Influences on Departure from Public Accounting. *Journal of Vocational Behavior*, 50(2), 249-270.

Greenhaus, J. H., Parasuraman, S., & Collins, K. M. (2001). Career involvement and family involvement as moderators of relationships between work-family conflict and withdrawal from a profession. *Journal of Occupational Health Psychology*, 6(2), 91-100.

Greenhaus, J., & Parasuraman, S. (1986). A work-nonwork interactive perspective of stress and its consequences. *Journal of Organizational Behavior Management*, 8(2), 37-60.

Griesmaier F. P. (2006), Causality, explanatoriness and understanding as modeling, *Journal of General Philosophy of Science*, 37(1), 41-59.

Griffeth, R. W., & Hom, P. W. (1995). The employee turnover process. *Research in Personnel and Human Resources Management*, 13(3), 245-293.

Griffeth, R., Hom, P., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: update, moderator tests, and research

implications for the next millennium. *Journal of Management*, 26(3), 463-488.

Grover, S. L., & Crooker, K. J. (1995). Who appreciates family-responsive human resource policies: the impact of family-friendly policies on the organizational attachment of parents and non-parents. *Personnel Psychology*, 48(2), 271- 288.

Guest, D. (2002). Human resource management, corporate performance and employee wellbeing: building the worker into HRM. *Journal of Industrial Relations*, 44(3), 335-358.

Guest, D. E. (1999). Human resource management-the workers' verdict. *Human Resource Management Journal*, 9(3), 5-25.

Guest, D. E., Michie, J., Conway, N., & Sheehan, M. (2003). Human resource management and corporate performance in the UK. *British Journal of Industrial Relations*, 41(2), 291-314.

Guest, D. E., Michie, J., Sheehan, M., & Conway, N. (2000). *Employment Relations, HRM and Business Performance: An analysis of the 1998 workplace employee relations survey*: Institute of Personnel and Development.

Guest, D., & Conway, N. (2004). Employee well-being and the psychological contract: A report for the CIPD: CIPD Publishing.

Guest, D., Brown, W., Peccei, R., Huxley, K., & Building, A. R. (2008). Does partnership at work increase trust? An analysis based on the 2004 Workplace Employment Relations Survey. *Industrial Relations Journal*, 39(2), 124-152.

Gutek, B. A., Searle, S., & Klepa, L. (1991). Rational versus gender role expectations for work-family conflict. *Journal of Applied Psychology*, 76, 560-568.

Guthrie, J. P. (2001). High-involvement work practices, turnover, and productivity: Evidence from New Zealand. *Academy of Management Journal*, 44(1), 180-190.

Guzley, R. M. (1992). Organizational climate and communication climate: predictors of commitment to the organization. *Management Communication Quarterly*, 5(4), 379-402.

Haar, J. M. (2004). Work-family conflict and turnover intention: Exploring the moderation effects of perceived work-family support. *New Zealand Journal of Psychology*, 33(1), 35-40.

Haar, J. M., & Spell, C. S. (2004). Programme knowledge and value of work-family practices and organizational commitment. *The International Journal of Human Resource Management*, 15(6), 1040-1055.

Hafdahl, A. R. (2001). Multivariate meta-analysis for exploratory factor analytic research. University of North Carolina.

Haile, G. (2007). A multilevel analysis of workplace job satisfaction in Britain: evidence from a linked employer-employee data. Available at: http://www.wers2004.info/research/uploads/160207_162750.pdf

Haile, G. (2009). Unhappy Working with Men? Workplace Gender Diversity and Employee Job-Related Well-Being in Britain: A WERS2004 Based Analysis. Discussion Paper 4077.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1998). *Multivariate Data Analysis* (5th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Hakstian, A. R., Rogers, W. D., & Cattell, R. B. (1982). The behavior of numbers factors rules with simulated data. *Multivariate Behavioral Research*, 17, 193-219.

Hall, E. M. (1989). Gender, work control, and stress: A theoretical discussion and an empirical test. *International Journal of Health Services*, 19, 724-745.

Hammer, L. B., Allen, E., & Grigsby, T. D. (1997). Work–Family Conflict in Dual-Earner Couples: Within-Individual and Crossover Effects of Work and Family. *Journal of Vocational Behavior*, 50(2), 185-203.

Hammer, L. B., Bauer, T. N., & Grandey, A. A. (2003). Work-Family Conflict and Work-Related Withdrawal Behaviors. *Journal of Business and Psychology*, 17(3), 419-436.

Hammer, T. H., & Avgar, A. (2005). The impact of unions on job satisfaction, organizational commitment, and turnover. *Journal of Labor Research*, 26(2), 241-266.

Hancock, G. R., & Mueller, R. O. (2001). Rethinking construct reliability within latent variable systems. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural Equation Modeling: Present and Future* (pp 195-216). Lincolnwood, IL: Scientific Software International, Inc.

**Hang-yue, N., Foley, S., & Loi, R. (2005). Work role stressors and turnover intentions: a study of professional clergy in Hong Kong. *The International Journal of Human Resource Management*, 16(11), 2133-2146.

Hanisch, K. A., & Hulin, C. L. (1990). Job attitudes and organizational withdrawal: an examination of retirement and other voluntary withdrawal behaviors. *Journal of Vocational Behavior*, 37(1), 60-78.

Harkness, S. (1999). Working 9 to 5? In P. Gregg & J. Wadsworth (Eds.), *The state of working Britain*. Manchester: Manchester University Press.

Harrington, D. (2008). Confirmatory Factor Analysis. Retrieved 14th October 2009.

Harris, M. J., & Rosenthal, R. (1985). Mediation of interpersonal expectancy effects: Meta-analyses. *Psychological Bulletin*, 97, 363-386.

Harrison, D., Newman, D., & Roth, P. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49(2), 305-326.

Hartigan, J.A. & Kleiner, B. (1984). A Mosaic of Television Ratings. *The American Statistician*, 38(1), 32-35.

Haworth, J., & Lewis, S. (2005). Work, leisure and well-being. *British Journal of Guidance & Counselling*, 33(1), 67-79.

Hayduk, L. A. (1987). *Structural Equation Modeling with LISREL: Essentials and Advances*. USA: The John Hopkins University Press.

Hayes, L. J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., & Hughes, F. (2006). Nurse turnover: A literature review. *International Journal of Nursing Studies*, 43(2), 237-263.

Heaney, C. A. (1993). Perceived control and employed men and women. In B. C. Long & S. E. Kahn (Eds.), *Women, work, and coping: A multi disciplinary approach to workplace stress* (pp. 193-2 15). London, UK: McGill-Queens University Press.

Hedges, L. V. (1982). Fitting Categorical Models to Effect Sizes from a Series of Experiments. *Journal of Educational Statistics*, 7(2), 119-137.

Hedges, L. V. (1982). Fitting Continuous Models to Effect Size Data. *Journal of Educational Statistics*, 7(4), 245-270.

Hedges, L. V. (1983). A random effects model for effect sizes. *Psychological Bulletin*, 93(2), 388-395.

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic.

Hedges, L. V., & Vevea, J. L. (1998). Fixed and Random Effect models in Meta-Analysis. *Psychological Methods,* 3(4), 486- 504.

Hellriegel, D., & Slocum, J. W. (1974). Organizational climate: Measures, research and contingencies. *Academy of Management Journal,* 17(2), 255-280.

Hemingway, M. A., & Smith, C. S. (1999). Organizational climate and occupational stressors as predictors of withdrawal behaviours and injuries in nurses. *Journal of Occupational and Organizational Psychology,* 72, 285-299.

Higgins, C. A., Duxbury, L. E., & Irving, R. H. (1992). Work-family conflict in the dual-career family. *Organizational Behavior and Human Decision Processes,* 51(1), 51-75.

Higgins, J. P. T., & Thompson, S. G. (2004). Controlling the risk of spurious findings from meta-regression. *Statistics in Medicine,* 23(11), 1663 - 1682.

Higgins, J., Thompson, S., Deeks, J., & Altman, D. (2003). Measuring inconsistency in meta-analyses. *British Management Journal,* 327, 557–560.

Hiltrop, J. M. (1995). The changing psychological contract: the human resource challenge of the 1990s. *European Management Journal,* 13(3), 286-294.

**Hochwarter, W. A., Perrewé, P. L., Ferris, G. R., & Guercio, R. (1999). Commitment as an antidote to the tension and turnover consequences of organizational politics. *Journal of Vocational Behavior,* 55(3), 277-297.

Hofferth, S. L. (1996). Child care in the United States today. *The Future of Children Today,* 6(2), 41-61.

Hofmann, D., & Morgeson, F. P. (1999). Safety-related behavior as a social exchange: the role of perceived organizational support and leader-member exchange. *Journal of Applied Psychology,* 84(2), 286-296.

Hogarth, T., Hasluck, C., Pierre, G., Winterbotham, M., & Vivian, D. (2001). *Work-life balance 2000: results from the Baseline Study*: Department for Education and Employment. Research report number 249.

Holmes, T. & Srivastava, R. (2002). Effects of job perceptions on job behaviors: Implications for sales performance. *Industrial Marketing Management,* 31(5), 421-428.

Hom, P. W., & Griffeth, R. W. (1995). *Employee turnover.* Cincinnati, OH: South-Western College Publishing.

Hom, P. W., Caranikas-Walker, F., Prussia, G. E., & Griffeth, R. W. (1992). A meta-analytical structural equations analysis of a model of employee turnover. *Journal of Applied Psychology,* 77(6), 890-909.

Hom, P. W., Griffeth, R. W., & Sellaro, C. L. (1984). The validity of Mobley's(1977) model of employee turnover. *Organizational Behavior and Human Performance,* 34(2), 141-174.

**Hopkins, S. M., & Weathington, B. L. (2006). The relationships between justice perceptions, trust, and employee attitudes in a downsized organization. *The Journal of Psychology,* 140(5), 477- 498.

Houben, G. J., Diederiks, J. P. M., Tkant, Y., & Notermans, J. V. H. (1990). Rationalization in garages in The Netherlands and its effects on occupational health. *Work & Stress,* 4(2), 179-189.

Houkes, I., Janssen, P. P. M., de Jonge, J., & Nijhuis, F. J. N. (2001). Work and individual determinants of intrinsic work motivation, emotional exhaustion, and turnover intentions: A multi-sample analysis. *International Journal of Stress Management,* 8, 257-283.

Hox, J. J. (1995). Applied multilevel analysis. Amsterdam: TT-Publikaties [Accessed: 9th april 2009].

Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.

Hunter, E., & Schmidt, L. (1990). *Methods of Meta-analysis: correcting error and bias in research findings*. London: Sage Publications.

Hunter, E., Schmidt, L., & Jackson, B. (1982). *Meta-analysis: cumulating research findings across studies*. Beverly Hills: Sage Publications.

Hunter, J. E. (1983). A causal analysis of cognitive ability, job knowledge, job performance and supervisor ratings. In F. J. Landy, S. Zedeck & J. Cleveland (Eds.), *Performance measurement and theory*. New Jersey: Erlbaum.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635-672.

Ilozor, B. D. (2002). Australian telecommuting: management communication strategies The Authors DB Ilozor, DB Ilozor is Public Relations Marketing Manager at Geelong Grammar School, Victoria, Australia. *Logistics Information Management*, 15(2), 80-87.

Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499-534.

Ingram, P., & Simons, T. (1995). Institutional and resource dependence determinants of responsiveness to work-family issues. *Academy of Management Journal*, 38(5), 1466-1482.

Insel, P. M., & Moos, R. H. (1974). Psychological environments: Expanding the scope of human ecology. *American Psychologist*, 29(3), 179-188.

**Ito, J. K., & Brotheridge, C. M. (2005). Does supporting employees' career adaptability lead to commitment, turnover, or both? *Human Resource Management*, 44(1), 5-19.

**Iverson, R. D. (1996). Employee acceptance of organizational change: the role of organizational commitment. *International Journal of Human Resource Management*, 7(1), 122-149.

**Iverson, R. D. (1999). An Event History Analysis of Employee Turnover: The Case of Hospital Employees in Australia. *Human Resource Management Review*, 9(4), 397-418.

**Iverson, R. D., & Deery, M. (1997). Turnover culture in the hospitality industry. *Human Resource Management Journal*, 7(4), 71-82.

**Iverson, R. D., & Kuruvilla, S. (1995). Antecedents of union loyalty: The influence of individual dispositions and organizational context. *Journal of Organizational Behavior*, 16, 557-582.

Jablin, F. M. (1987). Organizational entry, assimilation, and Disengagement/exit. In F. M. Jablin, L. Putnam, K. H. Roberts, & L. W. Porter (Eds.), *Handbook of organizational communication: An interdisciplinary perspective* (pp 732-740). Newbury Park, CA: Sage Publications.

Jackofsky, E. F., & Peters, L. H. (1983). Job turnover versus company turnover: Reassessment of the March and Simon participation hypothesis. *Journal of Applied Psychology*, 68(3), 490-495.

Jackofsky, E. F., & Slocum Jr, J. W. (1990). Rejoinder to Payne's comment on 'A longitudinal study of climates. *Journal of Organizational Behavior*, 11(1), 81-83.

James, L. A., & James, L. R. (1989). Integrating work environment perceptions: explorations into the measurement of meaning. *Journal of Applied Psychology*, 74(5), 739- 751.

James, L. A., & Jones, A. P. (1974). Organizational climate: A review of theory and research. *Psychological Bulletin*, 81, 1096-1112.

James, L. A., & Jones, A. P. (1976). Organizational structure: A review of structural dimensions and their conceptual relationships with individual attitudes and behavior. *Organizational Behavior and Human Decision Processes*, 16, 74-113.

James, L. R., Demaree, R. G., & Wolf, G. (1993). r_{wg}: An Assessment of Within-Group Interrater Agreement. *Journal of Applied Psychology*, 78(2), 306-309.

James, L. R., Demaree, R. G., & Wolfe, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69(1), 85-98.

James, L. R., Gent, M. J., Hater, J. J., & Coray, K. E. (1979). Correlates of psychological influence: an illustration of the psychological climate approach to work environment perceptions. *Personnel Psychology*, 32(3), 563- 588.

James, L. R., Hartman, A., Stebbins, M. W., & Jones, A. P. (1977). Relationships between psychological climate and a VIE model for work motivation. *Personnel Psychology*, 30(2), 229-254.

James, L. R., Hater, J. J., Gent, M. J., & Bruni, J. R. (1978). Psychological climate: implications from cognitive social learning theory and interactional psychology. *Personnel Psychology*, 31(4), 783-813.

James, L. R., Joyce, W. F., & Slocum, J. W. (1988). Comment: Organizations do not cognize. *Academy of Management Review*, 13(1), 129-132.

Jansen, K. J., & Kristof-Brown, A. (2006). Toward a multidimensional theory of person-environment fit. *Journal of Managerial Issues*, 18(2), 193-212.

Janssen, P. P. M., Peeters, M. C. W., Jonge, J., Houkes, I., & Tummers, G. E. R. (2004). Specific relationships between job demands, job resources and psychological outcomes and the mediating role of negative work–home interference. *Journal of Vocational Behavior*, 65(3), 411-429.

Jex, S. M. (1998). *Stress and job performance: Theory, research, and implications for managerial practice*. Thousand Oaks, CA: Sage.

Jex, S. M., & Thomas, J. L. (2003). Relations between stressors and group perceptions: Main and mediating effects. *Work & Stress*, 17(2), 158-169.

Johannesson, R. E. (1973). Some problems in the measurement of organizational climate. *Organizational Behavior and Human Decision Processes*, 10, 118-144.

Johlke, M. C., & Duhan, D. F. (2000). Supervisor Communication Practices and Service Employee Job Outcomes. *Journal of Service Research*, 3(2), 154-165.

Johnson, B. T., Mullen, B., & Salas, E. (1995). Comparison of three major approaches of meta-analytic approaches. *Journal of Applied Psychology*, 80(1), 94-106.

Johnson, E. N., Kaplan, S. E., & Reckers, P. M. J. (1998). An examination of potential gender-based differences in audit managers' performance evaluation judgments. *Behavioral Research in Accounting*, 10(4), 47-57.

Johnson, E. N., Lowe, D. J., & Reckers, P. M. J. (2008). Alternative work arrangements and perceived career success: Current evidence from the big four firms in the US. *Accounting, Organizations and Society*, 33(1), 48-72.

Johnson, J. (2004). Flexible working: Changing the manager's role. *Management Decision*, 42(6), 721-737.

Johnson, J. V., Hall, E. M., Ford, D. E., Mead, L. A., Levine, D. M., & Wang, N. Y. (1995). The psychosocial work environment of physicians: the impact of

demands and resources on job dissatisfaction and psychiatric distress in a longitudinal study of Johns Hopkins Medical School graduates. *Journal of Occupational and Environmental Medicine, 37*(9), 1151-1159.

Johnston, M. W., Griffeth, R. W., Burton, S., & Carson, P. P. (1993). An Exploratory Investigation into the Relationshps between Promotion and Turnover: A Quasi-experimental Longitudinal Study. *Journal of Management, 19*(1), 33-49.

**Joiner, T. A., & Bakalis, S. (2006). The antecedents of organizational commitment: the case of Australian casual academics. *International Journal of Educational Management, 20*(6), 439-452.

Jones, A. P., & James, L. R. (1979). Psychological climate: Dimensions and relationships of individual and aggregated work environment perceptions. *Organizational Behavior and Human Performance, 23*(2), 201-250.

Jones, C. B., Stasiowski, S., Simons, B. J., Boyd, N. J., & Lucas, M. D. (1993). Shared governance and the nursing practice environment. *Nursing Economics, 11*(4), 208-214.

**Jones, E., Chonko, L., Rangarajan, D., & Roberts, J. (2007). The role of overload on job attitudes, turnover intentions, and salesperson performance. *Journal of Business Research, 60*(7), 663-671.

Jones, M. K., Jones, R. J., Latreille, P. L., Sloane, P. J., & Park, S. (2009). Training, Job Satisfaction, and Workplace Performance in Britain: Evidence from WERS 2004. *Labour, 23*(s1), 139-175.

Jöreskog, K. G., Sörbom, D., & Inc, S. (1989). LISREL 7: A guide to the program and applications. Chicago: SPSS.

Joseph, D., & Ng, K. Y. (2007). Turnover of information technology professionals: A narrative review, meta-analytic structural equation modeling, and model development. *Management Information Systems Quarterly, 31*(3), 547-577.

Joseph, J., & Deshpande, S. P. (1997). The impact of ethical climate on job satisfaction of nurses. *Health Care Management Review, 22*(1), 76-81.

Joyce, W. F., & Slocum, J. W. (1984). Collective climate: Agreement as a basis for defining aggregate climates in organizations. *Academy of Management Journal, 27*(4), 721-742.

Kaczka, E., & Kirk, R. (1968). Managerial climate, work groups, and organizational performance. *Administrative Science Quarterly, 12*, 253-272.

Kahn, W. A. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. *The Academy of Management Journal, 33*(4), 692-724.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141-151.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31-36.

Kanter, R. (1977). *Men and women of the corporation.* New York: Basic Books.

Kanungo, R. N. (1982). Measurement of job and work involvement. *Journal of Applied Psychology, 67*, 341-349.

Karasek Jr, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*(2), 285-308.

Karasek, R., & Theorell, T. (1990). *Healthy work.* New York: Basic Books

**Karatepe, O. M., & Kilic, H. (2007). Relationships of supervisor support and conflicts in the work–family interface with the selected job outcomes of frontline employees. *Tourism Management, 28*(1), 238-252.

Kawakami, N., Haratani, T., & Araki, S. (1992). Effects of perceived job stress on depressive symptoms in blue-collar workers of an electrical factory in Japan. *Scandinavian journal of work, environment & health*, 18(3), 195-200.

Keller, R. T. (1984). The role of performance and absenteeism in the prediction of turnover. *Academy of Management Journal*, 27(1), 176-183.

Kelly, R., & Voydanoff, P. (1985). Work family role strain among employed parents. *Family Relations*, 34(3), 367-374.

Kersley, B., Alpin, C., Forth, J., Bryson, A., Bewley, H., Dix, G., et al. (2006). *Inside the workplace: findings from the 2004 Workplace Employment Relations Survey*. London: Routledge.

Kessler, R. C., Price, R. H., & Wortman, C. B. (1985). Social factors in psychopathology: Stress, social support, and coping processes. *Annual Review of Psychology*, 36(1), 531-572.

Kim, J., & Curry, J. (1977). The treatment of missing data in multivariate analysis. *Sociological Methods & Research*, 6, 215-241.

**Kim, S. W. (1999). Behavioral Commitment Among the Automobile Workers in South Korea. *Human Resource Management Review*, 9(4), 419-451.

Kinicki, A. J., McKee-Ryan, F. M., Schriesheim, C. A., & Carson, K. P. (2002). Assessing the construct validity of the job descriptive index: a review and meta-analysis. *Journal of Applied Psychology*, 87(1), 14-32.

Kinnunen, U., & Mauno, S. (1998). Antecedents and outcomes of work-family-conflict among employed women and men in Finland. *Human Relations*, 51(2), 157-177.

Kinnunen, U., Mauno, S., Geurts, S., & Dikkers, J. (2005). Work–family culture in organizations: theoretical and empirical approaches. In S. A. Y. Poelmans (Ed.), *Work and family: An international research perspective* (pp. 87–120). Mahwah: Lawrence Erlbaum Associates.

Klein, K. J., & Kozlowski, S. W. J. (2000). Multilevel theory, research, and methods in organizations: foundations, extensions, and new directions: San Francisco: Jossey-Bass.

Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data collection, and analysis. *Academy of Management Review*, 19(2), 195-229.

Kline, R. B. (2005). Principles and practice of structural equation modeling. New York: The Guilford Press.

Koehler, J. W., Anatol, K. W., & Applbaum, R. L. (1976). *Organizational communication: Behavioral perspective*. London: Holt, Rinehart and Winston.

Kofodimos, J. R. (1995). *Beyond work-family programs: Confronting and resolving the underlying causes of work-personal life conflict*. Greensboro, NC: Center for creative leadership.

Kopelman, R. E., Brief, A. P., & Guzzo, R. A. (1990). The role of climate and culture in productivity. In B. Schneider (Ed.), *Organizational climate and culture*. San Francisco: Jossey-Bass Inc.

Kopelman, R. E., Greenhaus, J. H., & Connolly, T. F. (1983). A model of work, family, and inter-role conflict: A construct validation study. *Organizational Behavior and Human Performance*, 32(2), 198-215.

Kossek, E. E., & Nichol, V. (1992). The effect of on-site child care on employee attitudes and performance. *Personnel Psychology*, 45, 485-509.

Kossek, E. E., & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational

behavior-human resources research. *Journal of Applied Psychology*, 83(2), 139-149.

Kossek, E. E., & Ozeki, C. (1999). Bridging the work-family policy and productivity gap: A literature review. *Community, Work & Family*, 2(1), 7-32.

Kossek, E. E., Barber, A. E., & Winters, D. (1999). Using flexible schedules in the managerial world: The power of peers. *Human Resource Management*, 38(1), 33-46.

Kottke, J. L., & Sharafinski, C. E. (1988). Measuring perceived supervisory and organizational support. *Educational and Psychological Measurement*, 48(4), 1075-1079.

Koufteros, X. A. (1999). Testing a model of pull production: a paradigm for manufacturing research using structural equation modeling. *Journal of Operations Management*, 17(4), 467-488.

Koys, D. J. (2001). The Effects Of Employee Satisfaction, Organizational Citizenship Behavior, And Turnover On Organizational Effectiveness: A Unit-Level, Longitudinal Study. *Personnel Psychology*, 54(1), 101-114.

Koys, D. J., & DeCotiis, T. A. (1991). Inductive Measures of Psychological Climate. *Human Relations*, 44(3), 265-285.

**Krauz, M., Sagie, A., & Bidermann, Y. (2000). Actual and preferred work schedules and scheduling control as determinants of job related attitudes. *Journal of Vocational Behavior*, 56, 1- 11.

Kristensen, T. S. (1995). The demand-control-support model: methodological challenges for future research. *Stress Medicine*, 11(1), 17-26.

Krull, J. L., & MacKinnon, D. P. (1999). Multilevel mediation modeling in group-based intervention studies. *Evaluation Review*, 23(4), 418-444.

Kushnir, T., & Melamed, S. (1991). Work-load, perceived control and psychological distress in Type A/B industrial workers. *Journal of Organizational Behavior*, 12(2), 155-168.

Labovitz, S. (1967). Some observations on measurement and statistics. *Social Forces*, 46(2), 151-160.

Laczo, R., & Hanisch, K. (1999). An examination of behavioral families of organizational withdrawal in volunteer workers and paid employees. *Human Resource Management Review*, 9(4), 453-477.

Lambert, E. G., Lynne Hogan, N., & Barton, S. M. (2001). The impact of job satisfaction on turnover intent: a test of a structural measurement model using a national sample of workers. *The Social Science Journal*, 38(2), 233-250.

Landsbergis, P. A., Schnall, P. L., Deitz, D., Friedman, R., & Pickering, T. (1992). The patterning of psychological attributes and distress by "job strain" and social support in a sample of working men. *Journal of Behavioral Medicine*, 15(4), 379-405.

LaRocco, J. M., Gunderson, E. K., & Dean, L. M. (1975). Organizational and Environmental Factors in Health and Personnel Effectiveness. II. Data Collection Methods, Test Instruments, and Criterion Variables. Report No. NHRC 75, 9.

**Laschinger, H. K. S., Finegan, J., & Shamian, J. (2001). The Impact of Workplace Empowerment and Organizational Trust on Staff Nurses' Work Satisfaction and Organizational Commitment. *Health Care Management Review*, 26(3), 7-23.

Leandro, G. (2005). Meta-Analysis in Medical Research. Retrieved 1 February 2008: from http:\\www.myilibrary.com/browse/open.asp?id=19708&loc=8

Lee, T. W., & Mowday, R. T. (1987). Voluntarily leaving an organization: An empirical investigation of Steers and Mowday's model of turnover. *Academy of Management Journal*, 30(4), 721-743.

Lee, T. W., Mitchell, T. R., Holtom, B. C., McDaniel, L. S., & Hill, J. W. (1999). The unfolding model of voluntary turnover: A replication and extension. *Academy of Management Journal*, 42(4), 450-462.

Leiter, M. P., & Laschinger, H. K. S. (2006). Relationships of Work and Practice Environment to Professional Burnout: Testing a Causal Model. *Nursing Research*, 55(2), 137-146.

Lerner, D. J., Levine, S., Malspeis, S., & D'Agostino, R. B. (1994). Job strain and health-related quality of life in a national sample. *American Journal of Public Health*, 84(10), 1580-1585.

Lewis, S. (2001). Restructuring workplace cultures: the ultimate work-family challenge? *Women in Management Review*, 16(1), 21-29.

Lewis, S. (2003). Flexible working arrangements: Implementation, outcomes, and management. *International Review of Industrial and Organizational Psychology*, 18, 1-28.

Li, I. c., Lin, M.-C., & Chen, C.-M. (2007). Relationship between personality traits, job satisfaction, and job involvement among Taiwanese community health volunteers. *Public Health Nursing*, 24(3), 274-282.

Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management*, 15, 47-120.

Likert, R. (1961). *New patterns of management*. New York: McGraw Hill Book Company.

Likert, R. (1967). *The human organization: Its management and value*. New York: McGraw Hill Book Company.

Lipsey, M. W. (2003). Those Confounded Moderators in Meta-Analysis: Good, Bad, and Ugly. *The ANNALS of the American Academy of Political and Social Science*, 587(1), 69-81.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical Meta-Analysis*. London: Sage Publications.

Little, T. D., Schnabel, K. U., & Baumert, J. (2000). *Modeling longitudinal and multilevel data: Practical issues, applied approaches, and specific examples*: Lawrence Erlbaum Associates.

Litwin, G. H., & Stringer, R. A. (1968). *Motivation and organizational climate*: Division of Research, Graduate School of Business Administration, Harvard University.

Lobel, S. A., & Kossek, E. E. (1996). Human resource strategies to support diversity in work and personal lifestyles: Beyond the 'family friendly' organization. In E. E. Kossek & S. A. Lobel (Eds.), *Managing diversity: Human resource strategies for transforming the workplace*. Cambridge, MA: Blackwell.

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.

Long, J. S. (1983). *Confirmatory factor analysis: A preface to LISREL*. London: Sage Publications, Inc.

Longenecker, C. O., & Scazzero, J. A. (2003). The Turnover and Retention of it Managers in Rapidly Changing Organizations. *Information Systems Management*, 20(1), 59-65.

Loscocco, K. A., & Spitze, G. (1990). Working conditions, social support, and the well-being of female and male factory workers. *Journal of Health and Social Behavior, 31*(4), 313-327.

Lu, H., While, A. E., & Louise Barriball, K. (2007). A model of job satisfaction of nurses: A reflection of nurses working lives in Mainland China. *Journal of Advanced Nursing, 58*(5), 468-479.

Lynch, P. D., Eisenberger, R., & Armeli, S. (1999). Perceived organizational support: Inferior versus superior performance by wary employees. *Journal of Applied Psychology, 84*(4), 467-483.

Lyne, K. D., Barrett, P. T., Williams, C., & Coaley, K. (2000). A psychometric evaluation of the occupational stress indicator. *Journal of Occupational and Organizational Psychology, 73*(2), 195-220.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial & Labor Relations Review, 48*(2), 197-221.

MacGregor, D. (1960). *The Human Side of Enterprise.* New York: MeGraw-Hill.

MacKenzie, S. B., Podsakoff, P. M., & Ahearne, M. (1998). Some possible antecedents and consequences of in-role and extra-role salesperson performance. *Journal of marketing, 62*(3), 87-98.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheeis, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*(1), 83-104.

**Maertz Jr, C. P., Griffeth, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior, 28*(8), 1059-1075.

Major, V. S., Klein, K. J., & Ehrhart, M. G. (2002). Work time, work interference with family, and psychological distress. *Journal of Applied Psychology, 87*, 427-436.

Malhotra, N. K. (1987). Analyzing marketing research data with incomplete information on the dependent variable. *Journal of Marketing Research, 24*, 74-84.

**Mansell, A., Brough, P., & Cole, K. (2006). stable predictors of job satisfaction, psychological strain, and employee retention: An evaluation of organizational change within the New Zealand customs service. *International Journal of Stress Management, 13*(1), 84- 107.

March, J. G., & Simon, H. A. (1958). *Organization.* Oxford: Blackwell Publishers.

Marshall, J. (1993). Organizational cultures and women managers: exploring the dynamics of resilience. *Applied Psychology: An International Review, 42*(4), 313-322.

Martin, A. J., Jones, E. S., & Callan, V. J. (2005). The role of psychological climate in facilitating employee adjustment during organizational change. *European Journal of Work and Organizational Psychology, 14*(3), 263-289.

Martin, C. (2003). Explaining labour turnover: empirical evidence from UK establishments. *Labour, 17*, 391-412.

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin, 108*(2), 171-194.

**Mauno, S., Kinnunen, U., & Ruokolainen, M. (2006). Exploring work-and organization-based resources as moderators between work–family conflict, well-being, and job attitudes. *Work & Stress, 20*(3), 210-233.

McBey, K., & Karakowsky, L. (2001). Examining sources of influence on employee turnover in the part-time work context. *Career Development International,* 6(1), 39-47.

McDonald, P., Guthrie, D., Bradley, L., & Shakespeare-Finch, J. (2005). Investigating work-family policy aims and employee experiences. *Employee Relations,* 27(5), 478-494.

McDonald, R. P., & Goldstein, H. (1989). Balanced versus unbalanced designs for linear structural relations in two-level data. *British Journal of Mathematical and Statistical Psychology,* 42(2), 215-232.

McKnight, H., & Webster, J. (2001). Collaborative insight or privacy invasion? Trust climate as a lens for understanding acceptance of awareness systems. In: C. Cooper, S. Cartwright and C. Earley (Eds.), *Handbook of Organizational Culture and Climate* (pp 533-555). Chichester: Wiley.

Meier, K., and A. Hicklin. 2007. Employee Turnover and Organizational Performance: Testing a Hypothesis from Classical Public Administration. *Journal of Public Administration Research and Theory* 18, 573-590.

Melamed, S., Kushnir, T., & Meir, E. I. (1991). Attenuating the impact of job demands: Additive and interactive effects of perceived control and social support. *Journal of Vocational Behavior,* 39(1), 40-53.

Metcalf, H. (1990). Retaining women employees: measures to counteract labour shortage: based on research under the Manpower Commentary Programme for the Department of Employment and the Training Agency: Institute of Manpower Studies.

Meyer, D., Zeileis, A., & Hornik, K. (2006). The Strucplot Framework: Visualizing Multi-way Contingency Tables with vcd. *Journal of Statistical Software,* 17(3), 1-48.

Meyer, R. D., & Cook, D. (2000). Visualization of data. *Current Opinion in Biotechnology,* 11(1), 89-96.

Miller, J., Schooler, C., Kohn, M. L., & Miller, K. A. (1979). Women and work: The psychological effects of occupational conditions. *American Journal of Sociology,* 85, 66-94.

Miller, N., & Pollock, V. (1994). Meta-Analytic synthesis for theory development. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 457-483). New York: Russell Sage Foundation.

Miller, O., Jr. (1996). *Employee Turnover in the Public Sector.* New York: Garland.

Millward, N. (1993). Uses of the workplace industrial relations surveys by British labour economists. Discussion paper 145, Center for economic performance, LSE.

Mitchell, T. R., & Lee, T. W. (2001). The unfolding model of voluntary turnover and job embeddedness: foundations for a comprehensive theory of attachment. *Research in Organizational Behavior,* 23, 189-246.

**Mitchell, T. R., Holtom, B. C., Lee, T. W., Sablynski, C. J., & Erez, M. (2001). Why People Stay: Using Job Embeddedness to Predict Voluntary Turnover. *The Academy of Management Journal,* 44(6), 1102-1121.

Mitra, A., Jenkins, G., Douglas, & Gupta, N. (1992). A meta- analytic review of the relationship between absence and turnover. *Journal of Applied Psychology,* 77, 879-889.

Mobley, W. H. (1977). Intermediate linkages between job satisfaction and employee turnover. *Journal of Applied Psychology,* 62, 237-240.

Mobley, W. H. (1982). *Employee turnover in organizations.* Reading, M A: Addison-Wesley.

Mobley, W. H., Griffeth, R. W., Hand, H. H., & Meglino, B. M. (1979). Review and conceptual analysis of the employee turnover process. *Psychological Bulletin*, 86(3), 493-522.

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.

Moore, J. (2000). One road to turnover: An examination of work exhaustion in technology professionals. *MIS Quarterly*, 24(1), 141-168.

Moorman, R. H., Blakely, G. L., & Niehoff, B. P. (1998). Does perceived organizational support mediate the relationship between procedural justice and organizational citizenship behavior? *Academy of Management Journal*, 41(3), 351-357.

Mor Barak, M. E., Nissly, J. A., & Levin, A. (2001). Antecedents to Retention and Turnover among Child Welfare, Social Work, and Other Human Service Employees: What Can We Learn from Past Research? A Review and Metanalysis. *Social Service Review*, 75(4), 625-661.

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321-1339.

Morris, B. (1997, March 17). Is your family wrecking your career? *Fortune*, 135(5), 70-80.

Morris, M. L., & Madsen, S. R. (2007). Advancing Work Life Integration in Individuals, Organizations, and Communities. *Advances in Developing Human Resources*, 9(4), 439-454.

Morris, T., Lydka, H., Fenton O'Crevy, M. (1993). Can commitment be managed? A longitudinal analysis of employee commitment and Human Resource policies. *Human Resource Management Journal*, 3 (3), 21-42.

**Mossholder, K. W., Settoon, R. P., & Henagan, S. C. (2005). A relational perspective on turnover: examining structural, attitudinal, and behavioral predictors. *Academy of Management Journal*, 48(4), 607-618.

Mowday, R. T., Koberg, C. S., & McArthur, A. W. (1984). The Psychology of the Withdrawal Process: A Cross-Validational Test of Mobley's Intermediate Linkages Model of Turnover in Two Samples. *Academy of Management Journal*, 27(1), 79-94.

Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). *Employee-organization Linkages: The Psychology of Commitment, Absenteeism, and Turnover*. New York: Academic Press.

Moyle, P. (1995). The role of negative affectivity in the stress process: Tests of alternative models. *Journal of Organizational Behavior*, 16(s1), 647-668.

**Mulki, J. P., Jaramillo, F., & Locander, W. B. (2006). Effects of ethical climate and supervisory trust on salesperson's job attitudes and intentions to quit. *Journal of Personal Selling and Sales Management*, 26(1), 20-26.

Mumford, K., & Smith, P. N. (2008). *Gender, job satisfaction and relative wages*. University of York: IZA, Institute for the study of labour.

Munasinghe, L. (2000). Wage growth and the theory of turnover. *Journal of Labor Economics*, 18(2), 204-220.

Musil, C., Jones, S., & Warner, C. (1998). Structural equation modeling and its relationship to multiple regression and factor analysis. *Research in Nursing & Health*, 21, 271-281.

Muthén, B. O. (1989). Latent variable modeling in heterogeneous populations. *Psychometrika*, 54(4), 557-585.

Muthen, B. O. (1991). Multilevel factor analysis of class and student achievement components. *Journal of Educational Measurement*, 28(4), 338-354.

Muthén, B. O. (1994). Multilevel covariance structure analysis. *Sociological Methods and Research*, 22, 376-376.

Muthen, B. O. (1997). Latent variable modeling of longitudinal and multilevel data. *Sociological methodology*, 27(1), 453-480.

Muthen, L. K., & Muthen, B. O. (2007). *Mplus user's guide. Fourth Edition*. Los Angeles, CA: Muthen & Muthen.

Naumann, S. E., & Bennett, N. (2000). A case for procedural justice climate: Development and test of a multilevel model. *Academy of Management Journal*, 43(5), 881-889.

Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Developement and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81(4), 400-410.

Newman, J. E. (1975). Understanding the organizational structure-job attitude relationship through perceptions of the work environment. *Organizational Behavior and Human Performance*, 14(3), 371.

**Ng, T. W. H., Butts, M. M., Vandenberg, R. J., DeJoy, D. M., & Wilson, M. G. (2006). Effects of management communication, opportunity for learning, and work schedule flexibility on organizational commitment. *Journal of Vocational Behavior*, 68(3), 474-489.

Nichols, T., Danford, A., & Tasiran, A. C. (2009). Trust, Employer Exposure and the Employment Relation. *Economic and Industrial Democracy*, 30(2), 241-265.

Niedhammer, I., Chastang, J. F., David, S., Barouhiel, L., & Barrandon, G. (2006). Psychosocial Work Environment and Mental Health: Job-strain and Effort–Reward Imbalance Models. *International Journal of Occupational and Environmental Health*, 12, 111-119.

Nielson, T. R., Carlson, D. S., & Lankau, M. J. (2001). The Supportive Mentor as a Means of Reducing Work–Family Conflict. *Journal of Vocational Behavior*, 59(3), 364-381.

Nolan, J. P., Wichert, I. C., & Burchell, B. J. (2000). Job insecurity, psychological well-being and family life. In E. Heery & J. Salmon (Eds.), *The insecure workforce* (pp 181-209). London: Routledge.

Nunnally, J. (1967). *Psychometric theory*. New York: McGraw-Hill.

Nusair, K., & Hua, N. (2010). Comparative assessment of structural equation modeling and multiple regression research methodologies: E-commerce context. *Tourism Management*, 31(3), 314-324.

Osterman, P. (1995). Work Family Programs and the Employment Relationship. *Administrative Science Quarterly*, 40(4), 681-700.

Ostroff, C. (1992). The relationship between satisfaction, attitudes, and performance: an organizational level analysis. *Journal of Applied Psychology*, 77(6), 963-974.

Ostroff, C. (1993). The effects of climate and personal influences on individual behavior and attitudes in organizations. *Organizational Behavior and Human Decision Processes*, 56, 56-90.

Ostroff, C., & Schmitt, N. (1993). Configurations of organizational effectiveness and efficiency. *Academy of Management Journal*, 36(6), 1345-1361.

Panaccio, A., & Vandenberghe, C. (2009). Perceived organizational support, organizational commitment and psychological well-being: A longitudinal study. *Journal of Vocational Behavior*, 75(2), 224-236.

Parasuraman, S. (1982). Predicting turnover intentions and turnover behavior: A multivariate analysis. *Journal of Vocational Behavior*, 21(1), 111-121.

Parasuraman, S., & Greenhaus, J. H. (1999). Integrating Work and Family: Challenges and Choices for a Changing World. US: Greenwood Publishing Group.

Parasuraman, S., & Greenhaus, J. H. (2002). Toward reducing some critical gaps in work–family research. *Human Resource Management Review*, 12(3), 299-312.

**Parasuraman, S., & Simmers, C. A. (2001). Type of employment, work-family conflict and well-being: a comparative study. *Journal of Organizational Behavior*, 22(5), 551-568.

Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., LaCost, H. A., et al. (2003). Relationships between psychological climate perceptions and work outcomes: A meta-analytic review. *Journal of Organizational Behavior*, 24(4), 389-416.

Parker, D. F., & DeCotiis, T. A. (1983). Organizational determinants of job stress. *Organizational Behavior and Human Performance*, 32(2), 160-177.

**Parker, S. K., Axtell, C. M., & Turner, N. (2001). Designing a safer workplace: importance of job autonomy, communication quality, and supportive supervisors. *Journal Occupational Health Psychology*, 6(3), 211-228.

Parkes, K. R., & Von Rabenau, C. (1993). Work characteristics and well-being among psychiatric health-care staff. *Journal of Community and Applied Social Psychology*, 3, 243-243.

Patterson, M. G., West, M. A., Lawthom, R., & Nickell, S. (1997). *Impact of people management practices on business performance*. London: Institute of Personnel and Development.

Patterson, M., Payne, R., & West, M. (1996). Collective climates: A test of their sociopsychological significance. *Academy of Management Journal*, 39(6), 1675-1691.

Payne, R., & Pugh, D. S. (1976). Organizational structure and climate. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1125-1173). Chicago: Rand McNally.

**Payne, S. C., & Huffman, A. (2005). A longitudinal examination of the influence of mentoring on organizational commitment and turnover. *The Academy of Management Journal*, 48(1), 158-168.

Peccei, R. (2004). *Human resource management and the search for the happy workplace*. Rotterdam: Erasmus Institute of Management (ERIM).

Pendleton, A., Deakin, S., & Street, T. (2007). Corporate governance and workplace employment relations: the potential of WERS 2004. *Industrial Relations Journal*, 38(4), 338-355.

Perrewe, P. L., Hochwarter, W. A., & Kiewitz, C. (1999). Value Attainment: An Explanation for the Negative Effects of Work-Family Conflict on Job and Life Satisfaction. *Journal of Occupational Health Psychology*, 4, 318-326.

Perrons, D. (2001). The new economy and the work life balance: a case study of the new media sector in Brighton and Hove: London School of Economics, Department of Geography.

Perrons, D. (2003). The New Economy and the Work Life Balance: Conceptual Explorations and a Case Study of New Media. *Gender, Work & Organization*, 10(1), 65-93.

Perry, J. L. (2000). Bringing society in: Toward a theory of public-service motivation. *Journal of Public Administration Research and Theory*, 10(2), 471.

Perry-Jenkins, M., Repetti, R. L., & Crouter, A. C. (2000). Work and Family in the 1990s. *Journal of Marriage and the Family*, 62(4), 981-998.

Perry-Smith, J. E., & Blum, T. C. (2000). Work-family human resource bundles and perceived organizational performance. *Academy of Management Journal*, 43(6), 1107-1117.

Peters, L. H., Bhagat, R. S., & O'Connor, E. J. (1981). An Examination of the I ndependent and Joint Contributions of Organizational Commitment and Job Satisfaction on Employee Intentions to Quit. *Group & Organization Management*, 6(1), 73.

Pettigrew, A. M. (1990). Organizational climate and culture: Two constructs in search of a role. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 413–433). San Francisco: Jossey-Bass.

**Pettit, J. D. (1997). An Examination of Organizational Communication as a Moderator of the Relationship Between Job Performance and Job Satisfaction. *Journal of Business Communication*, 34(1), 81-98.

Phillips, J. M. (1998). Effects of Realistic Job Previews on Multiple Organizational Outcomes: A Meta-Analysis. *Academy of Management Journal*, 41, 673-691.

Pierce, J. L., & Newstrom, J. W. (1983). The design of flexible work schedules and employee responses: Relationships and process. *Journal of Occupational Behaviour*, 4, 247-262.

Pierce, J., & Newstrom, J. (1980). Towards a conceptual clarification of employee responses to flexible working hours: A work adjustment approach. *Journal of Management*, 6(2), 117-134.

Pigott, T. D. (1994). Methods for handling missing data in research synthesis. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 163–175). New York: Russell Sage Publication.

Pleck, J. H. 1977. The work-family role system. *Social Problems*, 24, 417-427.

Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management*, 22(2), 259-298.

Porter, L. W., & Steers, R. M. (1973). Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism. *Psychological Bulletin*, 80(2), 151-176.

Porter, L., Steers, R., Mowday, R., & Boulian, P. V. (1974). Organizational Commitment, Job Satisfaction, and Turnover Among Psychiatric Technicians. *Journal of Applied Psychology*, 59(5), 603-609.

Powell, G. N., & Mainiero, L. A. 1999. Managerial decision making regarding alternative work arrangements. *Journal of Occupational and Organizational Psychology*, 72(1), 41–56.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879.

Preacher, K. J., & Leonardelli, G. J. (2006). Calculation for the Sobel test: An interactive calculation tool for mediation tests. . Retrieved April 6th, 2009.

Preston, C. C. and Colman, A.M. (2000). Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences, *Acta Psychologica*, 104, 1–15.

Price, J. (1977). *The study of turnover*. Ames: Iowa State University Press.

286

Price, J. L., & Mueller, C. W. (1981). A causal model for turnover for nurses. *Academy of Management Journal*, 24(3), 543-565.

Price, J., & Mueller, C. W. (1986). *Absenteeism and Turnover Among Hospital Employees*. Greenwich, CN: JAI Press.

Pritchard, R. D., & Karasick, B. W. (1973). The effects of organizational climate on managerial job performance and job satisfaction. *Organizational Behavior and Human Performance*, 9(1), 126-146.

**Rafferty, A. E., & Griffin, M. A. (2006). Perceptions of Organizational Change: A Stress and Coping Perspective. *Journal of Applied Psychology*, 91(5), 1154-1162.

Ramsay, H., Scholarios, D., & Harley, B. (2000). Employees and high-performance work systems: testing inside the black box. *British Journal of Industrial Relations*, 38(4), 501-531.

Randall, M. L., Cropanzano, R., Bormann, C. A., & Birjulin, A. (1999). Organizational politics and organizational support as predictors of work attitudes, job performance, and organizational citizenship behavior. Journal of Organizational Behavior, 20(2), 159-174.

Rau, B. L., & Hyland, M. A. M. (2002). Role Conflict And Flexible Work Arrangements: The Effects On Applicant Attraction. *Personnel Psychology*, 55(1), 111-136.

Rayton, B. A. (2006). Examining the interconnection of job satisfaction and organizational commitment: an application of the bivariate probit model. *The International Journal of Human Resource Management*, 17(1), 139-154.

Redding, W. C. (1972). *Communication within the organization: An interpretive review of theory and research*. New York: Industrial Communication Council and Purdue University.

Reichers, A. E., & Schneider, B. (1990). Climate and culture: An evolution of constructs. In B. Schneider (Eds.), *Organizational climate and culture* (pp 5-39). San Francisco: Jossey-Bass

Rentsch, J. R. (1990). Climate and culture: Interaction and qualitative differences in organizational meanings. *Journal of Applied Psychology*, 75(6), 668-681.

Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698-714.

**Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective Commitment to the Organization: The Contribution of Perceived Organizational Support. *Journal of Applied Psychology*, 86(5), 825- 836.

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15(2), 150-163.

Roberts, K. H., & O'Reilly Iii, C. A. (1979). Some Correlations of Communication Roles in Organizations. *The Academy of Management Journal*, 22(1), 42-57.

**Rodwell, J. J., Kienzle, R., & Shadur, M. A. (1998). The relationship among work-related perceptions, employee attitudes, and employee performance: The integral role of communications. *Human Resource Management*, 37(3-4), 277-293.

Rogers, C. S. (1992). The flexible workplace: what have we learned? *Human Resource Management*, 31, 183-199.

Rogg, K. L., Schmidt, D. B., Shull, C., & Schmitt, N. (2001). Human resource practices, organizational climate, and customer satisfaction. *Journal of Management*, 27(4), 431.

Rooney, J. A., & Gottlieb, B. H. (2007). Development and initial validation of a measure of supportive and unsupportive managerial behaviors. *Journal of Vocational Behavior, 71(2),* 186-203.

Rose, E., & Wright, G. (2005). Satisfaction and dimensions of control among call centre customer service representatives. *The International Journal of Human Resource Management,* 16(1), 136-160.

Rosenthal, R. (1979). The 'file drawer' problem and the tolerance for null results. *Psychological Bulletin, 86,* 638- 641.

Rosenthal, R., & DiMatteo, M. R. (2001). Meta-Analysis: Recent developments in quantitative methods for literature reviews. *Annual Review of Psychology,* 52(1), 59-82.

Rosenthal, R., & Rubin, D. B. (1982). Comparing Effect Sizes of Independent Studies. *Psychological Bulletin, 92(2),* 500-504.

Rousseau, D. M. (1988). The construction of climate in organizational research. *International Review of Industrial and Organizational Psychology, 3,* 139-158.

Rousseau, D. M. (1998). Why workers still identify with organizations. *Journal of Organizational Behavior,* 19(3), 217-233.

Roxburgh, S. (1996). Gender differences in work and well-being: effects of exposure and vulnerability. *Journal of Health and Social Behavior, 37(3),* 265-277.

Roxburgh, S. (1997). The effect of children on the mental health of women in the paid labor force. *Journal of Family Issues, 18(3),* 270-289.

Rupp, D. E., & Cropanzano, R. (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organizational Behavior and Human Decision Processes,* 89(1), 925-946.

Russo, A. T. (2000). *Minimizing employee turnover by focusing on the new hire process.* US: Universal Publishers.

Ryan, A., Schmit, M. J., & Johnson, R. (1996). Attitudes and effectiveness: Examining relations at an organizational level. *Personnel Psychology, 49(4),* 853-882.

Sakamoto, Y., & Spinks, W. A. (2008). The impact of home-based telework on work-family conflict in the childcare stage. *Journal of e-Working, 2(2),* 144-158.

Salamon, S., & Robinson, S. L. (2002). Does trust climate deter workplace deviance? An organizational level analysis. Annual meeting of the Academy of Management. Denver, CO.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative science quarterly, 23(2),* 224-253.

Salanova, M., Peiró, J. M., & Schaufeli, W. B. (2002). Self-efficacy specificity and burnout among information technology workers: An extension of the job demand-control model. *European Journal of Work and Organizational Psychology,* 11(1), 1-25.

Salop, S. (1979) 'A Model of the Natural Rate of Unemployment', *American Economic Review, 69,* 117-25.

Saltzstein, A. L., Ting, Y., & Saltzstein, G. H. (2001). Work-family balance and job satisfaction: The impact of family-friendly policies on attitudes of federal government employees. *Public Administration Review, 61,* 452-467.

Scandura, T. A., & Lankau, M. J. (1997). Relationships of gender, family responsibility and flexible work hours to organizational commitment and job satisfaction. *Journal of Organizational Behavior, 18,* 377-391.

Schaubroeck, J., & Fink, L. S. (1998). Facilitating and inhibiting effects of job control and social support on stress outcomes and role behavior: A contingency model. *Journal of Organizational Behavior,* 19(2), 167-195.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293-315.

Schaufeli, W. B., Leiter, M. P., & Kalimo, R. (1995, September). The General Burnout Questionnaire: Cross-national development and validation. Paper presented at the APA/NIOSH Congress Work, Stress and Health, Creating Healthier Workplaces. Washington, DC.

Schaufeli, W., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.

Schmidt, F. L., Hunter, J. E., Pearlman, K., & Hirsch, H. R. (1985). Forty questions about validity generalization and meta-analysis. *Personnel Psychology*, 38, 697-798.

Schnake, M. (1983). An Empirical Assessment Of The Effects Of Affective Response In The Measurement Of Organizational Climate. *Personnel Psychology*, 36(4), 791-804.

Schnake, M. E., & Dumler, M. P. (2003). Levels of measurement and analysis issues in organizational citizenship behaviour research. *Journal of Occupational and Organizational Psychology*, 76(3), 283-301.

Schneider, B. (1975). Organizational climates: An essay. *Personnel Psychology*, 28(4), 447-479.

Schneider, B. (1990). Organizational climate and culture: San Francisco: Jossey-Bass.

Schneider, B. (2000). The psychological life of organizations. In N. M. Ashkanasy, C. P. Wilderom & M. F. Peterson (Eds.), *Handbook of Organizational Culture and Climate*. Thousand Oaks, CA: Sage.

Schneider, B., & Bartlett, C. J. (1968). Individual differences and organizational climate: The research plan and questionnaire development. *Personnel Psychology*, 21(3), 323-333.

Schneider, B., & Reichers, A. E. (1983). On the etiology of climates. *Personnel Psychology*, 36(1), 19-39.

Schneider, B., Brief, A. P., & Guzzo, R. A. (1996). Creating a climate and culture for sustainable organizational change. *Organizational Dynamics*, 24(4), 7-19.

Schneider, B., Gunnarson, S. K., & Niles-Jolly, K. (1994). Creating the climate and culture of success. *Organizational Dynamics*, 23(1), 17-29.

Schneider, B., White, S. S., & Paul, M. C. (1998). Linking service climate and customer perceptions of service quality: Test of a causal model. *Journal of Applied Psychology*, 83(2), 150-163.

**Scholarios, D., & Marks, A. (2004). Work-life balance and the software worker. *Human Resource Management Journal*, 14(2), 54-74.

Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Mahwah: Lawrence Erlbaum.

Schweiger, D. M., & DeNisi, A. S. (1991). Communication with employees following a merger: A longitudinal field experiment. *Academy of Management Journal*, 34, 110-135.

Scott, C. R., Connaughton, S. L., Diaz-Saenz, H. R., Maguire, K., Ramirez, R., Richardson, B., Shaw, S. P. & Morgan, D. (1999). The impacts of communication and multiple identifications on intent to leave: A multimethodological exploration. *Management Communication Quarterly*, 12(3), 400-435.

Seashore, S. E. (1954). *Group cohesiveness in the industrial work group*. Ann Arbor, MI: University of Michigan Press.

Seashore, S. E. (1977). *Group cohesiveness in the industrial work group*: Ayer Company Publishers. Available at : http://books.google.co.uk/books?hl=en&lr=&id=6DP1ZL1-1ScC&oi=fnd&pg=PR3&dq=seashore+s.+e.+1977&ots=Mg6WxP9wPt&sig=jrF7Z_R3glar1ZI0L31TS7NM0Hc#v=onepage&q&f=false

Sekaran, U. (1989). Paths to the job satisfaction of bank employees. *Journal of Organizational Behavior*, 10(4), 347-359.

SenGupta, S. (2004). *Employee Share Ownership Schemes and its impact upon Organisational Performance: A fresh perspective*. Unpublished Doctoral Dissertation, Cardiff Business School, Cardiff University, UK.

**Senter, J. L., & Martin, J. E. (2007). Factors affecting the turnover of different groups of part-time workers. *Journal of Vocational Behavior*, 71(1), 45-68.

Settoon, R. P., Bennett, N., & Liden, R. C. (1996). Social exchange in organizations: Perceived organizational support, leader-member exchange, and employee reciprocity. *Journal of Applied Psychology*, 81(3), 219-227.

Shadish, W. R., & Haddock, C. K. (1994). Combining estimates of effect sizes. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 261-281.). New York: Russell Sage Foundation.

Shadish, W. R., & Sweeney, R. B. (1991). Mediators and moderators in meta-analysis: There's a reason we don't let dodo birds tell us which psychotherapies should have prizes. *Journal of Consulting and Clinical Psychology*, 59(6), 883-893.

**Shadur, M. A., Kienzle, R., & Rodwell, J. J. (1999). The relationship between organizational climate and employee perceptions of involvement: The importance of support. *Group & Organization Management*, 24(4), 479.

Sharma, S. (1996). *Applied multivariate techniques*. New York: John Wiley & Sons, Inc.

Shaw, J. D., Delery, J. E., Jenkins, G. D., & Gupta, N. (1998). An organization-level analysis of voluntary and involuntary turnover. *Academy of Management Journal*, 41(5), 511-525.

Shore, L. M., & Martin, H. J. (1989). Job satisfaction and organizational commitment in relation to work performance and turnover intentions. *Human Relations*, 42(7), 625-638.

Shore, L. M., & Wayne, S. J. (1993). Commitment and employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support. *Journal of Applied Psychology*, 78, 774-774.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater-reliability. Psychological Bulletin, 86(2), 420-428.

Siguaw, J., Brown, G. & Widing, R. (1994). "The influence of market orientation of the firm on sales force behaviour and attitudes." *Journal of Marketing Research*, 31, 106-116.

Silver, N. C., & Dunlap, W. P. (1987). Averaging correlation coefficients: Should Fisher's z transformation be used? *Journal of Applied Psychology*, 72, 146-148.

Simons, T., & Roberson, Q. (2003). Why managers should care about fairness: The effects of aggregate justice perceptions on organizational outcomes. *Journal of Applied Psychology*, 88(3), 432-443.

Sims Jr, H. P., Szilagyi, A. D., & Keller, R. T. (1976). The Measurement of Job Characteristics. *The Academy of Management Journal*, 19(2), 195-212.

**Singh, J. (1998). Striking a balance in boundary-spanning positions: An investigation of some unconventional influences of role stressors and job

characteristics on job outcomes of salespeople. *The Journal of Marketing, 62*(3), 69-86.

**Sjoberg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41*(3), 247-252.

Sjoberg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41*(3), 247-252.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling.* London: Sage Publications Ltd.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological methodology,* 290-312.

**Somers, M., & Birnbaum, D. (2000). Exploring the relationship between commitment profiles and work attitudes, employee withdrawal, and job. *Public Personnel Management, 29*(3), 354-366.

Soupata, L. (2005). Engaging employees in company success: The UPS approach to a winning team. *Human Resource Management, 44*(1), 95-98.

Sparks, K., Cooper, C., Fried, Y., & Shirom, A. (1997). The effects of hours of work on health: A meta-analytic review. *Journal of Occupational and Organizational Psychology, 70*(4), 391-408.

Spector, P. E., & Jex, S. M. (1991). Relations of job characteristics from multiple data sources with employee affect, absence, turnover intentions, and health. *Journal of Applied Psychology, 76*(1), 46-53.

**Spector, P. E., Allen, T. D., Poelmans, S. A., Lapierre, L. M., Cooper, C. L., O'Driscoll, M. P., et al. (2007). Cross-national differences in relationships of work demands, job satisfaction, and turnover intentions with work-family conflict. *Personnel Psychology, 60*(4), 805-835.

**Spreitzer, G. M., & Mishra, A. K. (2002). To stay or to go: Voluntary survivor turnover following an organizational downsizing. *Journal of Organizational Behavior, 23*(6), 707-729.

**Spriggs, C., Jackson, P. R., & Parker, S. K. (2000). Production team working: The importance of interdependence and autonomy for employee strain and satisfaction. *Human Relations, 53*(11), 1519-1543.

Stansfeld, S. A., North, F. M., White, I., & Marmot, M. G. (1995). Work characteristics and psychiatric disorder in civil servants in London. *British Medical Journal, 49*(1), 48-53.

Staw, B. M. (1980a). The consequences of turnover. *Journal of Occupational Behaviour, 1*(4), 253-273.

Staw, B. M. (1980b). Rationality and justification in organizational life. *Research in Organizational Behavior, 2,* 45-80.

Steers, R. M., & Mowday, R. T. (1981). Employee turnover and post decision accommodation processes. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (vol. 3). Greenwich, CT: JAI Press.

Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Mahwah, N.J.: Lawrence Erlbaum Associates.

**Stinglhamber, F., & Vandenberghe, C. (2003). Organizations and supervisors as sources of support and targets of commitment: a longitudinal study. *Journal of Organizational Behavior, 24*(3), 251-270.

291

Stock, W. A. (1994). Systematic coding for research synthesis. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 125–138). New York: Russell Sage Foundation.

Stohl, C., & Cheney, G. (2001). Participatory processes/paradoxical practices: communication and the dilemmas of organizational democracy. *Management Communication Quarterly,* 14(3), 349.

Stouffer, S. A., Lumsdaine, M. H., Lumsdaine, A. A., Williams, R. M., Smith, M. B., Janis, I. L., et al. (1949). *The American soldier: Combat and its aftermath.* Princeton, NJ: Princeton University Press.

**Stroh, L. K., Brett, J. M., & Reilly, A. H. (1996). Family Structure, Glass Ceiling, and Traditional Explanations for the Differential Rate of Turnover of Female and Male Managers. *Journal of Vocational Behavior,* 49(1), 99-118.

**Summers, T. P., & DeCotiis, T. A. (1995). A field study of some antecedents and consequences of felt job stress. In T. P. Summers, T. A. De Cotiis, A. S. DeNisi, R. Crandall, & P. L. Perrewè (Eds.) *Occupational Stress: A Handbook.* Washington: Taylor and Francis.

Suszko, M. K., & Breaugh, J. A. (1986). The effects of realistic job previews on applicant self-selection and employee turnover, satisfaction, and coping ability. *Journal of Management,* 12(4), 513-523.

Sweeney, J. T., & Summers, S. L. (2002). The effect of the busy season workload on public accountants' job burnout. *Behavioral Research in Accounting,* 14, 223-245.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA; London: Allyn and Bacon.

Tai, T. W. C., Bame, S. I., & Robinson, C. D. (1998). Review of nursing turnover research, 1977–1996. *Social Science & Medicine,* 47(12), 1905-1924.

Tao, M., Takagi, H., Ishida, M., & Masuda, K. (1998). A study of antecedents of organizational commitment. *Japanese Psychological Research,* 40(4), 198-205.

Taylor, R. (2002). The future of work-life balance: Economic and Social Research Council.

Tennant, C. (2001). Work-related stress and depressive disorders. *Journal of Psychosomatic research,* 51(5), 697-704.

Terborg, J. R., & Lee, T. W. (1984). A predictive study of organizational turnover rates. *Academy of Management Journal,* 27(4), 793-810.

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.

Tharenou, P. (1997a). Explanations of Managerial Career Advancement. *Australian Psychologist,* 32(1), 19-28.

Tharenou, P. (1997b). Managerial Career Advancement. In C. L. Cooper & I. T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology* (pp. 39-94). New York: Wiley.

Tharenou, P. (1998). Predictors of advancing in management. In G. Griffin (Ed.), *Management theory and practice* (pp. 358-378). Sydney: Macmillan Australia.

Tharenou, P. (1999). Gender differences in advancing to the top. *International Journal of Management Reviews,* 1(2), 111-132.

**Thomas, L. T., & Ganster, D. C. (1995). Impact of family-supportive work variables on work-family conflict and strain: a control perspective. *Journal of Applied Psychology, 80*(1), 6-15.

Thompson and D. Prottas (2005). Relationships among organizational family support, job autonomy, perceived control, and employee well-being, *Journal of Occupational Health Psychology,* 10(4) , 100–118.

Thompson, C. A., Beauvais, L. L., & Lyness, K. S. (1999). When work–family benefits are not enough: the influence of work–family culture on benefit utilization, organizational attachment, and work–family conflict. *Journal of Vocational Behavior,* 54(3), 392-415.

Thompson, C. A., Jahn, E. W., Kopelman, R. E., & Prottas, D. J. (2004). Perceived organizational family support: A longitudinal and multilevel analysis. *Journal of Managerial Issues,* 16(4), 545-567.

Thomsen, S., Dallender, J., Soares, J., Nolan, P., & Arnetz, B. (1998). Predictors of a healthy workplace for Swedish and English psychiatrists. *The British Journal of Psychiatry,* 173(1), 80-84.

Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & de Chermont, K. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin,* 129(6), 914-945.

Thornthwaite, L. (2004). Working time and work-family balance: A review of employees' preferences. *Asia Pacific Journal of Human Resources,* 42(2), 166-184.

Toulson, P., & Smith, M. (1994). The relationship between organizational climate and employee perceptions of personnel management practices. *Public Personnel Management,* 23(3), 453-468.

Trevor, C. O. (2001). Interactions among actual ease-of-movement determinants and job satisfaction in the prediction of voluntary turnover. *The Academy of Management Journal,* 44(4), 621-638.

**Trimble, D. E. (2006). Organizational commitment, job satisfaction, and turnover intention of missionaries. *Journal of Psychology and Theology,* 34(4), 349-360.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. Psychometrika, 38(1), 1-10.

Tziner, A., & Birati, A. (1996). Assessing employee turnover costs: A revised approach. *Human Resource Management Review,* 6(2), 113-122.

Valcour, M. (2007). Work-based resources as moderators of the relationship between work hours and satisfaction with work-family balance. *Journal of Applied Psychology,* 92(6), 1512-1523.

**van Breukelen, W., van der Vlist, R., & Steensma, H. (2004). Voluntary employee turnover: combining variables from the 'traditional' turnover literature with the theory of planned behavior. *Journal of Organizational Behavior,* 25(7), 893-914.

Van Breukelen, W., van der Vlist, R., & Steensma, H. (2004). Voluntary employee turnover: combining variables from the 'traditional' turnover literature with the theory of planned behavior. *Journal of Organizational Behavior,* 25(7), 893-914.

Van der Doef, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research. *Work & Stress,* 13(2), 87-114.

Vandenberg, R. J., Richardson, H. A., & Eastman, L. J. (1999). The impact of high involvement work processes on organizational effectiveness: A second order latent variable approach. *Group & Organization Management,* 24(3), 300- 339.

Varona, F. (1996). Relationship between communication satisfaction and organizational commitment three Guatemalan organizations. *The Journal of Business Communication, 33*(2), 111-140.

Varona, F. (2002). Conceptualization and management of communication satisfaction and organizational commitment in three Guatemalan organizations. *American Communication Journal, 5*(3), 1-18.

Verhaeghen, P., & Salthouse, T. A. (1997). Meta-analyses of age-cognition relations in adulthood: Estimates of linear and nonlinear age effects and structural models. *Psychological Bulletin, 122*(3), 231-249.

Victor, B., & Cullen, J. B. (1987). A theory and measure of ethical climate in organizations. Empirical Studies of Business Ethics and Values.

Vigoda, E., & Vigoda-Gadot, E. (2003). *Developments in organizational politics: How political dynamics affect employee performance in modern worksites.* Cheltenham: Edward Elgar Publishing.

Viswesvaran, C., & Ones, D. (1995). Theory testing: combining psychometric meta-analysis and structural equations modeling. *Personnel Psychology, 48*(4), 865- 885.

Vittinghoff, E. (2005). *Regression methods in biostatistics: Linear, logistic, survival, and repeated measures models* (p. 96-97). San Francisco: Springer.

Voydanoff, P. (1988). Work role characteristics, family structure demands, and work/family conflict. *Journal of Marriage and the Family, 50*(3), 749-761.

Voydanoff, P. (2002). Linkages between the work-family interface and work, family, and individual outcomes. *Journal of Family Issues, 23*, 138-164.

Voydanoff, P. (2004). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and Family, 66*, 398- 412.

Voydanoff, P. (2005). The Differential Salience of Family and Community Demands and Resources for Family-to-Work Conflict and Facilitation. *Journal of Family and Economic Issues, 26*(3), 395-417.

Voydanoff, P. (2005). Toward a Conceptualization of Perceived Work-Family Fit and Balance: A Demands and Resources Approach. *Journal of Marriage and Family, 67*(4), 822-836.

Wall, T. D., Jackson, P. J., Mullarkey, S., & Parker, S. K. (1996). The demands-control model of job strain: A more specific test. *Journal of Occupational and Organizational Psychology, 69*(2), 153-166.

Wallace, J. E. (1997). It's about time: A study of hours worked and work spillover among law firm lawyers. *Journal of Vocational Behavior, 50*(2), 227-248.

Wallace, J. E. (1999). Work-to-non work conflict among married male and female lawyers. *Journal of Organizational Behavior, 20*, 797-816.

Walsh, J. (2007). Equality and diversity in British workplaces: the 2004 Workplace Employment Relations Survey. *Industrial Relations Journal, 38*(4), 303-319.

Walton, R.E. (1985). From control to commitment in the workplace. *Harvard Business Review, 63*(2), 77-84.

Wang, P., & Walumbwa, F. O. (2007). Family-friendly programs, organizational commitment, and work withdrawal: the moderating role of transformational leadership. *Personnel Psychology, 60*(2), 397-427.

Wanous, J. P. (1992). *Organizational entry: recruitment, selection, orientation, and socialization of newcomers.* Reading, MA: Addison-Wesley

Warr, P. (2002). Psychology at work. Pakefield: Penguin group books.

Warr, P. B. (1990). Decision latitude, job demands, and employee well-being. *Work & Stress, 4*(4), 285-294.

Warr, P. B., & Wall, T. D. (1975). *Work and Well-being*. Harmondsworth: Penguin Books.

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(2), 129-148.

**Wayne, J. H., Randel, A. E., & Stevens, J. (2006). The role of identity and work-family support in work-family enrichment and its work-related consequences. *Journal of Vocational Behavior*, 69(3), 445-461.

Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal*, 40(1), 82-111.

**Weber, P. S., & Weber, J. E. (2001). Changes in employee perceptions during organizational change. *Leadership and Organization Development Journal*, 22(6), 291-300.

Whicker, M. L., & Areson, T. W. (1990). *Public sector management*. New York: Praeger Publishers.

White, J. K., & Ruh, R. A. (1973). Effects of Personal Values on the Relationship Between Participation and Job Attitudes. *Administrative Science Quarterly*, 18(4), 506-514.

White, M., Hill, S., McGovern, P., Mills, C., & Smeaton, D. (2003). High-performance management practices, working hours and work-life balance. *British Journal of Industrial Relations*, 41(2), 175-195.

White, M., Hill, S., Mills, C., & Smeaton, D. (2006). Managing to change? British workplaces and the future of work. *Industrial Relations Journal*, 37(1), 78-89.

**Whitener, E. M. (2001). Do high commitment human resource practices affect employee commitment?: A cross-level analysis using hierarchical linear modeling. *Journal of Management*, 27(5), 515.

Williams, K. J., & Alliger, G. M. (1994). Role stressors, mood spillover, and perceptions of work-family conflict in employed parents. *Academy of Management Journal*, 37(4), 837-868.

**Williams, L. L. (2005). Impact of nurses' job satisfaction on organizational trust. *Health Care Management Review*, 30(3), 203-211.

Wilson, N., Cable, J. R., & Peel, M. J. (1990). Quit Rates and the Impact of Participation, Profit-Sharing and Unionization: Empirical Evidence from UK Engineering Firms. *British Journal of Industrial Relations*, 28(2), 197-213.

Wolf, F. M. (1986). *Meta-Analysis: Quantitative methods for research synthesis*. Newbury Park, CA: Sage Publications.

Wood, S. (1999). Family-friendly management: testing the various perspectives. *National Institute Economic Review*, 168(1), 99-116.

Wood, S. (2008). Job characteristics, employee voice and well-being in Britain. *Industrial Relations Journal*, 39(2), 153-168.

Wood, S., de Menezes, L. and Lasaosa, A.(2001) A Family-friendly management in the UK: testing various perspectives. *Industrial Relations*, forthcoming.

Wortman, G., Biernat, M., & Lang, E. 1991. Goping with role overload. In M. Frankenhaeuser, U. Lundberg, & M. Ghesney (Eds.), *Women, work and health: Stress and opportunities* (85-110). New York: Plenum.

Wright, B.E. (2001). Public-sector work motivation: A review of the current literature and a revised conceptual model. *Journal of Public Administration Research and Theory*, 11(4), 559-586.

Wright, S. (1960). Path coefficients and path regressions: alternative or complementary concepts? *Biometrics,* 16(2), 189-202.

Wright, T. A., & Bonett, D. G. (1992). The effect of turnover on work satisfaction and mental health: Support for a situational perspective. *Journal of Organizational Behavior,* 13(6), 603-615.

**Wright, T. A., & Bonett, D. G. (2007). Job Satisfaction and psychological well-being as non-additive predictors of workplace turnover. *Journal of Management,* 33(2), 141-160.

Wright, T. A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology,* 83(3), 486-493.

Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology,* 5(1), 84-94.

**Yang, E., & Ferris, A. (2004). A cross-cultural test of the work-family interface in 48 countries. *Journal of Marriage and Family,* 66(5), 1300- 1316.

Yavas, U., Babakus, E., & Karatepe, O. M. (2008). Attitudinal and behavioral consequences of work-family conflict and family-work conflict: Does gender matter? International *Journal of Service Industry Management,* 19(1), 7-31.

Yavas, U., Kaynak, E., & Dibe, M. (1985). The managerial climate in less-developed countries. *Management Decisions,* 23(3), 29-40.

Yeandle, S., Crompton, R., Wigfield, A., & Yeandle, S. (2002). *Employed Carers and Family-Friendly Employment Policies.* Bristol: The Policy Press.

Yoon, M. H., Beatty, S. E., & Suh, J. (2001). The effect of work climate on critical employee and customer outcomes. *International Journal of Service Industry Management,* 12(5), 500-521.

Young, S. A., & Parker, C. P. (1999). Predicting collective climates: assessing the role of shared work values, needs, employee interaction and work group membership. *Journal of Organizational Behavior,* 20(7), 1199-1218.

Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. (2007). Technology acceptance: a meta-analysis of the TAM: Part 1. *Journal of Modelling in Management,* 2(3), 251 - 280.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter? Exploring the effects of inter-organizational and inter-personal trust on performance. *Organization Science,* 9(2), 141-159.

Zohar, D. (1980). Safety climate in industrial organizations: theoretical and applied implications. *Journal of Applied Psychology,* 65(1), 96-102.

Zohar, D. (2000). A group-level model of safety climate: testing the effect of group climate on micro-accidents in manufacturing jobs. *Journal of Applied Psychology,* 85(4), 587-596.