

---

## **JOB STRESS AS A PREDICTOR OF EMPLOYEE HEALTH**

---

**AZMAN Ismail**

*Faculty of Economics & Management, University Kebangsaan Malaysia*

**NORHAFIZAH Abu Hasan**

*Faculty of Economics & Management, University Kebangsaan Malaysia*

**YU-FEI (Melissa) Chin**

*Faculty of Economics & Management, University Kebangsaan Malaysia*

**YUSOF Ismail**

*Economics & Management Sciences, International Islamic University Malaysia*

**AINON JAUHARIAH Abu Samah**

*Faculty of Business Administration, UNITAR International University*

**Abstract:**

*This study was conducted to measure the relationship between job stress and employee health. A survey method was employed to collect self-administered questionnaires from employees in established universities in Sarawak, Malaysia. The outcomes of SmartPLS path model revealed three important findings: first, role ambiguity was positively and significantly related to employee health. Second, role conflict was positively and significantly related to employee health. Third, role overload was positively and significantly related to employee health. Statistically, the result demonstrates that the level of job stress has been an important predictor of employee health in the studied organizations. The paper includes discussions, implications and conclusion.*

**Key words:** *Role ambiguity, role conflict, role overload, employee health*

### **1. Introduction**

Stress is originally a subject of physics (on resistant) but the idea was transferred to psychology (Michael, Court & Petal, 2009). It is viewed as a multi-dimensional construct and may be interpreted based on language and organizational

perspectives. In terms of language, stress is described as “non-specific response of the body to any demand placed upon it” (Selye, 1987, p. 17) and a psychological state of mind resulting from demands put on a person’s body (Leung, Chan & Cheng, 2012). Level of stress may result in individuals’ eustress and distress conditions (Selye, 1964, 1987; Ismail et al., 2010; Yu-Fei (Melissa) et al., 2012). Many scholars like Code and Langan-Fox (2001), Meyer (2000), Ismail et al. (2010), Gachter, Savage and Togler (2011), Yu-Fei et al. (2012), and Leung et al. (2012) generally view eustress as positive stress where it may occur when individuals are able to handle external demands placed on their physique which may lead to decreased physiological and psychological stresses (e.g., pleasant life, able to control feelings of anxiety and being proactive). Conversely, distress that is also known as negative stress may exist when individuals cannot cope with external demands placed on their bodies which may lead to increased physiological and psychological stresses (e.g., sickness, unpleasant life, unable to control feelings of anxiety and passive).

In the organizational context, the term job stress is used interchangeably with work stress and occupational stress (AbuAIRub, 2004; Ismail et al. 2010; Larson, 2004), that is a product of cognitive interpretation of situations (Wickramasinghe, 2012). Specifically, job stress is often viewed as employees’ psychological and physiological reactions toward uncomfortable, and undesirable threats happening in the workplace (He, Zhao & Archbold, 2002; Montgomery et al., 1996). A present review of the workplace stress literature as published by Sharpley et al. (1996), Cartwright and Cooper (1997), Sparks and Cooper (1999), Major et al. (2002), Yousef (2002), and Eby et al. (2005), Ismail et al. (2010), Tourigny, Baba and Wang (2010), and Yu-Fei et al. (2012) highlights that job stress consists of three influential features, namely role ambiguity, role conflict and role overload. Role ambiguity is generally defined as a situation where individuals do not have clear information about their work objectives, work scopes and supervisor expectations that may create tensions. Besides that, role conflict is broadly defined as a condition where individuals feel unable to handle job demands and dislike to perform jobs that are assigned by managers that may induce suffering. Presence of these two things requires individuals to make decisions under conflicting demands which may cause conflict with other job or non-job demands. Thus, role overload is roughly defined based on quantitative and qualitative workloads. For example, quantitative overload is often related to individuals who perform too much work, whereas qualitative overload is usually referred to as individuals who feel too much difficulties to perform certain jobs. These workloads are beyond the capability of employees to cope may lead to an increased distress.

Surprisingly, a recent research in the workplace stress reveals that high or low level of job stress may have a significant impact on employee outcomes, especially health (Sharpley et al., 1996; Sparks & Cooper, 1999). Some scholars like Hofmann and Tetrick (2003), and Arnold and Dupre (2012) generally interpret health as a state where individuals who have good psychological and physiological conditions that may motivate them to perform job in the workplace. In a job stress model, many scholars think that role ambiguity, role conflict, role overload, and health are distinct, but highly

interrelated constructs (Cunningham, Lischeron, Koh & Farrier, 2004; Sharpley et al., 1996; Sparks & Cooper, 1999). This link can be traced to Selye's 1956 work entitled "the General Adaptation Syndrome" which suggested that human body will lose its natural ability to maintain its state of biological equilibrium (homeostasis) if it is exposed to stressors in a prolonged time period. Further, Gachter et al. (2011) explain that human body will go through three phases if its natural balance is disrupted; alarm stage whereby the body will recognize a threatening condition to its homeostasis, resistance phase whereby the body will fight to re-establish balance and finally exhaustion phase in which disease, organ dysfunction and possible death will occur. Stage one and two are routine to the body but being in stage two for a long time or repeatedly will drain the body's defense mechanism and ill effect will be exhibited.

Some statistical data taken from the previous studies have proved the effect of job stress on employee health. For example, International Labor Organization said that the treatment cost for depression due to job stress in the USA was US\$30 to 40 billion as ten percent of the workers in the country experience depression (Gachter et al., 2011). While, Johnson et. al. (2006) report that the plethora of society health problems implicated by job-related stress is estimated £3.7 billion annually, and nearly half a million workers affected by work-related stress make them sick in the United Kingdom. Hence, Kozusznik, Rodriguez and Peiro (2012) reveal that every four workers in the European Union are negatively affected by job stress.

Apparently, very few studies have attempted to investigate the role of job stress as an important predicting variable in the workplace stress research literature. Many scholars like Fairbrother and Warn (2003), Michael et al. (2009), and Wickramasinghe (2012) think that the role of job stress as an important predictor is given less emphasis in the previous studies because they have over described the features of job stress, employed a simple survey to identify different employee perceptions toward job stress features, and used a simple correlation method that may not be able to assess the effect size and nature of the relationship between job stress and employee outcomes. As a result, these studies have not provided adequate information that may be used as guidelines by practitioners to formulate practical coping strategies for preventing and controlling subsequent negative employee stress outcomes in agile organizations (Sharpley et al., 1996; Sparks & Cooper, 1999). This phenomenon motivates the researchers to fill in the gap of literature by quantifying the relationship between job stress and employee health.

## **2. Research Objectives**

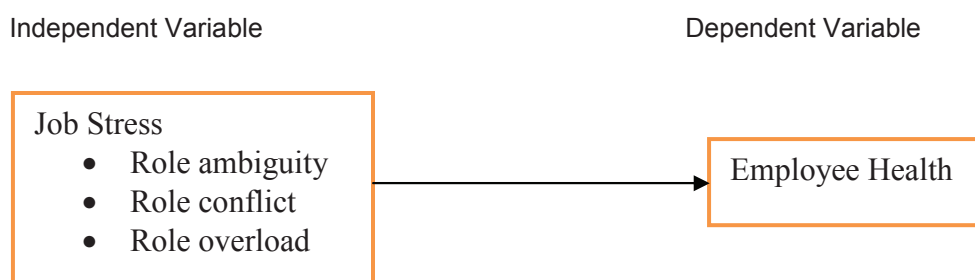
This study has three major objectives: first, to examine the relationship between role ambiguity and employee health. Second, to examine the relationship between role conflict and employee health. Third, to examine the relationship between role overload and employee health.

### 3. Literature Review

The role of job stress in affecting employee health is consistent with the notion of job stress model. For example, Karasek's (1979) job strain model posited that job demands and level of control or decision making at work may increase the risk of individuals' physiological and psychological health. Besides that, Edward's (1998) P-E fit theory similarly suggested that a lack of fit between job demands and resources may result in two forms of strains, that is physiology (e.g., raised blood pressure, raised serum cholesterol, and lowered immunity) and psychology (e.g., sleep disturbances, anxiety, panic attacks, dysphoria, and restlessness).

The notion of these theories has gained strong support from the workplace stress research literature. For example, several previous studies about job stress were conducted based on a direct effects model using different samples, like perceptions of 4,500 staff from various departments in New Zealand universities (Sharpley et al., 1996), perceptions of 7,099 employees from 13 different occupations (Sparks & Cooper, 1999), perceptions of 513 workers from 500 Fortune companies in US (Major et al., 2002), 485 employees of the commercial airline industry in Mainland China (Tourigny et al., 2010), and perceptions of 96 academic and non-academic staff from higher learning institutions in Malaysia (Yu-Fei et al., 2012). Findings from these studies found that high level of job stress had decreased the capability of employees to handle and maintain health in the respective organizations (Major et al., 2002; Sharpley et al., 1996; Sparks & Cooper, 1999; Yu-Fei et al., 2012; Yousef, 2002).

This study has extracted and integrated core elements in the literature to formulate a conceptual framework for further investigation as shown is Figure 1.



**Figure 1: Conceptual framework**

Based on the framework, it was hypothesized that:

- H1: There is a negative relationship between role ambiguity and employee health.
- H2: There is a negative relationship between role conflict and employee health.
- H3: There is a negative relationship between role overload and employee health.

#### **4. Methodology**

This study employed a cross-sectional research method which permitted the researchers to combine the job stress research literature, the pilot study and the actual survey as main procedure to collect data for this study. The main advantage of using this research design may enhance the ability to gather accurate, less bias and high quality data (Cresswell, 1998; Ismail et al., 2010; Sekaran, 2003). This study was conducted in established universities in Sarawak, Malaysia. In the first step of data collection, a pilot study was conducted involving 95 usable questionnaires gathered from employees in institutions of higher learning in Sarawak. The values of Cronbach alpha for the variables, namely role ambiguity, role conflict, role overload, and employee health ranged from 0.77 to 0.85, indicating that the constructs satisfactorily met the standard of reliability analysis. Next, the outcomes of this pilot study were used to verify the content and format of survey questionnaire for final survey administration. Although English is widely used in the state of Sarawak, but to insure against lack of representation in the sample of respondents who were less conversant with English, the research used back translation technique for the original English version of the questionnaire. This approach was adopted in order to increase the validity and reliability of the instrument (Hulland, 1999; Ismail et al., 2010; Wright, 1996).

The survey questionnaire has two sections: First, role ambiguity had 4 items, role conflict had 3 items, and role overload had 3 items that were developed based on job stress literature (Fu & Shaffer, 2001; Gallie et al., 2009; Major et al., 2002; Tatman et al., 2006). Second, job-family conflict had 3 items that were developed based on work related employee health literature (Allen et al., 2000; Boles et al., 2001; Gallie et al., 2009; Matteson & Invancevich, 2003). These items were measured using a 7-item scale ranging from "very strongly disagree/dissatisfied" (1) to "very strongly agree/satisfied" (7). In this study, demographic variables were used as controlling variables to focus on employee attitudes.

The unit of analysis for this study is employees who have worked in the studied organizations. The researchers had obtained an official approval to conduct the study from the heads of the organizations and also received advice from them about the procedures of conducting the survey in their organizations. Considering the constraints of the organization rule, and financial and duration of study, 400 survey questionnaires were distributed using a convenient sampling technique to employees in the organizations. This sampling technique was often used in social science research because the heads of the organizations did not provide the list of employees, and this situation did not allow the researchers to randomly select respondents for this study. Of the number, 145 usable questionnaires were returned to the researchers, yielding 39 percent response rate. The survey questionnaires were answered by participants voluntarily. The completed survey data collected that exceeded 30 respondents, provides opportunity for its analysis using inferential statistics (Ismail et al., 2010; Sekaran, 2003).

The SmartPLS 2.0 was employed to assess the validity and reliability of survey questionnaire data, and thus test the research hypotheses (Henseler et al., 2009;

Ringle, Wende & Will, 2005). The statistical package provides many advantages, which include providing latent variable scores, avoiding small sample size problems, estimating complex models with many latent and manifest variables, hassling stringent assumptions about the distribution of variables and error terms, and handling both reflective and formative measurement models (Henseler et al., 2009). The structural model is assessed by examining the path coefficients using standardized betas ( $\beta$ ) and t statistics. The outcomes of SmartPLS path model is recommended to test the hypothesized model because it may clearly show the significant relationship between independent variable and dependent variable if the value of t statistic larger than 1.96. This result indicates that independent variable acts an important predictor of dependent variable in the hypothesized model (Henseler et al., 2009). In addition,  $R^2$  is used as an indicator of the overall predictive strength of the model. The value of  $R^2$  are considered as follows: 0.19 (weak), 0.33 (moderate) and 0.67 (substantial) (Henseler et al., 2009).

## 5. Results

Table 1 shows that close to sixty percent of respondents were female (56.6 percent), aged between 30 to 39 years old (46.2 percent), married with working spouse (57.9 percent), possessed bachelor degree (49.7 percent), had less than two dependents (43.4 percent), who rarely brought work home (42.2 percent), and had served their current employer from 2 to 5 years (41.4 percent), had permanent and confirmed positions (73.8 percent), and less than half of them belonged to management and professional group (43.4 percent).

**Table 1: Participant characteristics (n=145)**

<b>Respondent</b>	<b>Sub Profile</b>	<b>Percentage</b>
Gender	Male	43.4
	Female	56.6
Age	<20	0.7
	21 – 29	27.6
	30 – 39	46.2
	40 – 49	17.2
	>50	8.3
Marital status	Single	35.9

**Studies in Business and Economics**

	Married with working spouse	57.9
	Married with non working spouse	4.8
	Widow/Widower	1.4
Education	LCE/SRP/PMR	2.1
	MCE/SPM	6.9
	Diploma/STPM/HSC	13.8
	Bachelor Degree	49.7
	Masters Degree	22.8
	Doctor of Philosophy	3.4
	Others	1.4
Number of dependents	Less than 2 persons	43.4
	3 to 6 persons	51
	7 to 10 persons	4.8
	More than 11 persons	0.7
Length of service	Less than 1 year	16.6
	2 – 6 years	41.4
	7 – 11 years	22.8
	12 – 16 years	9.7
	17 – 21 years	5.5
	More than 22 years	4.1
Type of service	Permanent and confirmed in position	73.8
	Permanent and in probation period	9.7
	Contract	11.7
	Temporary	4.8
Job Group	Management and professional groups	43.4
	Supporting staff	15.9
	Academic staff	33.1
	Others	7.6

Confirmatory factor analysis was employed to determine the validity and reliability of instrument. Table 2 shows the results of convergent and discriminant validity analyses. All constructs had the values of average variance extracted (AVE) larger than 0.5, indicating that they met the acceptable standard of convergent validity (Henseler et al., 2009). Besides that, all constructs had the values of diagonal AVE square root which were greater than the squared correlation with other off diagonal constructs, showing that all constructs met the acceptable standard of discriminant validity (Henseler et al., 2009; Yang, 2009).

**Table 2: The Results of convergent and discriminant validity analyses**

Variable	AVE	Role Ambiguity	Role Conflict	Role Overload	Employee Health
Role Ambiguity	0.567	<b>.745</b>			
Role Conflict	0.601	0.557	<b>.678</b>		
Role Overload	0.722	-0.114	-0.234	<b>.808</b>	
Employee Health	0.813	0.517	0.463	-0.316	<b>.885</b>

Table 3 shows the factor loadings and cross loadings for different constructs. The correlation between items and factors had higher loadings than other items in the different constructs, as well as the loadings of variables which were greater than 0.7 in their own constructs in the model are considered adequate (Henseler et al., 2009). In conclusion, the validity of measurement model fulfilled the criteria.

**Table 3: The results of factor loadings and cross loadings for different constructs**

Construct / Items	Role Ambiguity	Role Conflict	Role Overload	Employee Health
<u>Role Ambiguity</u>				
The tasks that I do are related to my performance appraisal evaluation.	<b>0.753435</b>	0.340244	-0.168433	0.383591
I have clear information to carry out my job excellently.	<b>0.731735</b>	0.518065	-0.167892	0.41297



I am able to perform my job description	<b>0.750176</b>	0.467118	-0.019266	0.375627
I clearly understand about my organization's policy.	<b>0.776116</b>	0.345129	0.020353	0.38173
<u>Role Conflict</u>				
I feel comfortable in doing my work according to procedures set up by my department.	0.476765	<b>0.804229</b>	-0.290811	0.382605
I often have the same ideas with my supervisor in planning my daily work.	0.377078	<b>0.810437</b>	-0.181611	0.415918
My supervisor accepts my different working style if I can meet his or her expectation.	0.477779	<b>0.706116</b>	-0.013586	0.238788
<u>Role Overload</u>				
I have excessive workloads.	-0.08825	-0.208116	<b>0.874257</b>	-0.243293
I often have insufficient time to finish my work within office hours.	-0.162173	-0.217186	<b>0.821034</b>	-0.261354
I feel that I am given more tasks than my colleague.	-0.046208	-0.173702	<b>0.853011</b>	-0.295432
<u>Employee Health</u>				
Feel able to focus on my work.	0.472673	0.405652	-0.282027	<b>0.916689</b>
Feel able to control my work problem.	0.500385	0.453092	-0.320938	<b>0.937487</b>
Feel able to communicate with others comfortably.	0.421583	0.390299	-0.247683	<b>0.849247</b>

Table 4 shows the results of reliability analysis for the instrument. The values of composite reliability and Cronbach's Alpha were greater than 0.8, indicating that the instrument used in this study had high internal consistency (Henseler et al., 2009; Nunally & Benstein, 1994).

**Table 4: Composite reliability and Cronbach's alpha**

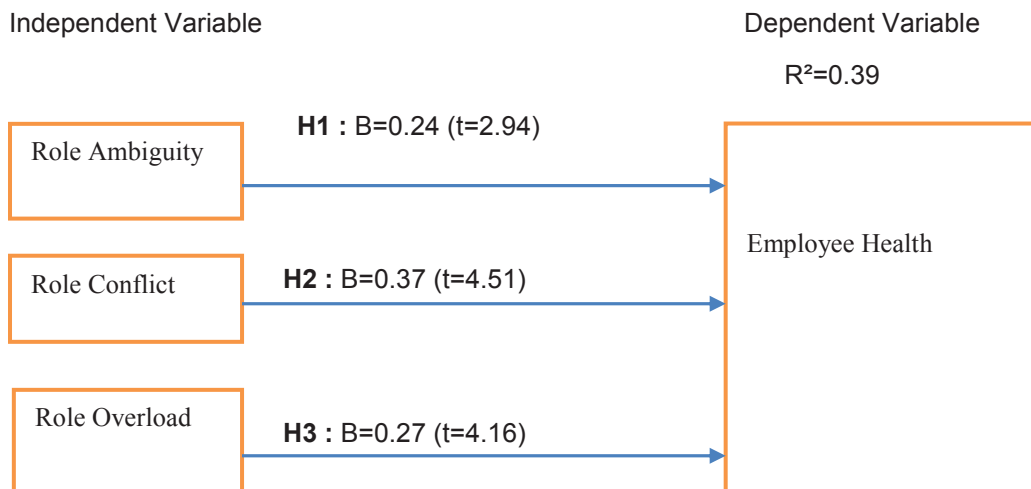
Construct	Composite Reliability	Cronbach Alpha
Role Ambiguity	0.840	0.745
Role Conflict	0.818	0.678
Role Overload	0.886	0.808
Employee Health	0.929	0.885

Table 5 shows the results of Pearson Correlation analysis and descriptive statistics. The means for the variables from 4.0 to 5.7 signifying that the levels of role ambiguity, role conflict, role conflict, role overload, and employee health ranging from high (4) to highest level (7). The correlation coefficients for the relationship between the independent variables (i.e., role ambiguity, role conflict and role overload) and the dependent variable (i.e., employee health) were less than 0.90, indicating the data were not affected by serious collinearity problem (Hair et al., 2006).

**Table 5: Pearson correlation analysis and descriptive statistics**

Variable	Mean	Standard Deviation	Pearson Correlation analysis (r)			
			1	2	3	4
1. Role Ambiguity	5.7	.60	1			
2. Role Conflict	5.4	.80	.564**	1		
3. Role Overload	4.0	1.38	-.12**	-.211**	1	
4. Employee Health	5.6	.73	.514**	.442**	-.309**	1

Figure 2 shows that the inclusion of role ambiguity, role conflict and role overload had explained 35 percent of the variance in dependent variable. Specifically, results of testing research hypothesis using SmartPLS path model produced three important findings: first, role ambiguity was positively and significantly related to employee health ((Beta=0.24; t=2.94), therefore H1 was supported. Secondly, role conflict significantly was positively and significantly related to employee health (Beta=0.37; t=4.51), therefore H2 was supported. Thirdly, role overload was positively and significantly related to employee health (Beta=0.27; t=4.16), therefore H3 was supported. In sum, this result confirms that high level of job stress has reduced the level of employee health in the studied organizations.



Note: Significant at \*t >1.96

**Figure 2: The results of SmartPLS path model showed the relationship between job stress and employee health**

## 6. Discussion and Implications

The findings of this study show that job stress does act as an important predictor of employee health. In the context of this study, management teams have designed job specifications for employees who have worked in the various departments in order to achieve the organizational strategy and goals. Majority of employees view that the levels of their job stress and employee health are high. In this situation, high levels of role ambiguity, role conflict and role overload have decreased the ability of employees to handle their job problems and thus may lead to decreased health in the organizational sample.

The study presents three major implications: theoretical contribution, robustness of research methodology, and practical contribution. In terms of theoretical contribution, the results of this study reveal that the inability of employees to properly handle ambiguity, conflict and overload in their job has decreased their abilities to maintain health in the organizational sample. This result has also supported and broadened studies by Sharpley et al. (1996), Sparks and Cooper (1996), Major et al. (2002), Tourigny et al. (2010), and Yu-Fei et al. (2012). With respect to the robustness of research methodology, the survey questionnaire used in this study has exceeded the acceptable standards of the validity and reliability analyses. This situation may lead to produce the accurate and reliable findings.

In terms of practical contributions, the findings of this study can be used as guidelines by the management to overcome negative job stress in their organizations. Feasible suggestions include: first, the content of stress training programs needs to be

simplified in order to help employees in identifying the acute and serious physiological (e.g., physical sickness) and psychological (e.g., mental illness) symptoms. Second, methods of stress training programs need to give more emphasis on spiritual practices in order to reduce physiological and physiological strains. Third, team work needs to be encouraged by management in order to create positive human relation and cooperation in achieving job targets. Fourth, group health insurance needs to be provided in order to give chance to employees in making regularly health examinations, and covering expenses for chronic disease treatments (e.g., heart attack, cancer, diabetes, blood pressure and kidney problems). Fifth, employee assistance programs through outsourcing and/or internal counseling and guidance unit need to be provided in order to improve employee health and increase their motivation in doing challenging jobs. If management heavily considers these suggestions this may enhance the ability of employees to plan and manage negative job stresses from disturbing their health, performance and commitment in the workplace.

## **7. Conclusion**

This study suggests the conceptual framework based on the workplace stress research literature. The results of confirmatory factor analysis confirmed that the instrument used in this study met the acceptable standards of validity and reliability analyses. Further, the outcomes of SmartPLS path model revealed that high levels of role ambiguity, role conflict and role overload had been essential factors that could decrease employees' health in the organizational sample. Therefore, current research and practice within job stress needs to incorporate role ambiguity, role conflict and role overload as critical factors of the workplace stress domain. This study further suggests that the inability of employees to handle high levels of ambiguity, conflict and overload in executing job will lead to decreased ability of employees to handle and maintain health in the workplace. Thus, if these negative outcomes are not properly managed, they may decrease employee' motivations to sustain and support organizational competitiveness in an era of globalization.

While results of the current study find support from extant literature, future research should consider its limitations of conceptual framework and methodology. One of the limitations of the current study is relatively poor response rate (39 percent). By selectively contacting the respondents who have not responded the study will be able to learn about the reasons for non-response and form an opinion whether this group has been under-represented in the sample. Next, while the current model investigated relatedness among the contributors to employee health, they did not explain the degree of their respective contributions towards the dependent variable. Specifically, future research in this area may be strengthened by ensuring that respondents are well represented in the sample. In fact, under-representation maybe overcome by approaching more similar institutions and appointing representatives to help remind colleagues to complete and submit their completed instrument. It is also feasible to make arrangement with the current organizations for longitudinal study. This

approach will help confirm, among others, the reliability of results of the first and previous surveys. Using causal model would be next logical step for correlations study. When this study has established valid statistical relationships among major variables, the latter qualify for testing on causality.

## **8. References**

- AbuAlRub, R. F. (2004). *Job stress, job performance and social support among hospital nurses*. Journal of Nursing Scholarship, 36 (91), 73-78.
- Allen, T. D., Herst, D. E. L., Bruck, C. S. & Sutton, M. (2000). *Consequences associated with work-to-family conflict: A review and agenda for the future research*. Journal of Occupational Health Psychology, 5, 278-308.
- Arnold, K.A., & Dupré, K.E. (2012). *Perceived organizational support, employee health and emotions*. International Journal of Workplace Health Management, 5(2),139-152
- Boles, J., Howard, W.G. & Donofrio, H. (2001). *An investigation into the inter-relationships of work-family conflict, family-work conflict & work satisfaction*. Journal of Managerial Issues, 13, 376-391.
- Cartwright, S., & Cooper, C.L. (1997). *Managing workplace stress*. Thousand Oaks, California: SAGE Publications.
- Code, S., & Langan-Fox, J. (2001). *Motivation, cognitions and traits: Predicting occupational health, well-being and performance*. Stress and Health, 17, 159-74.
- Cresswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. London: SAGE Publications.
- Cunningham J.B., Lischeron J., Koh H.C., & Farrier M. (2004). *A cybernetic framework linking personality and other variables in understanding general health*. Personnel Review, 33(1), 55-80
- 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, 124-197.
- Edwards, J.R. (1998). *Cybernetic theory of stress, coping, and well-being: review and extension to work and family*. In Cooper, C.L. (Ed.). Theories of Organizational Stress (pp.122-52). NY: Oxford University Press.
- Fairbrother K., & Warn J. (2003). *Workplace dimensions, stress and job satisfaction*. Journal of Managerial Psychology, 18(1), 8-21
- Fu, C.K. & Shaffer, M.A. (2001). *The tug of work and family: Direct and indirect domain-specific determinants of work-family conflict*. Personnel Review, 30, 502-522.
- Gallie, D. & Russell, H. (2009). *Work-family conflict and working conditions in Western Europe*. Social Indicators Research, 93(3), 445-467.
- Gachter M., Savage D.A., & Torgler B. (2011). *The relationship between stress, strain and social capital*. Policing: An International Journal of Police Strategies & Management, 515-540
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (2006). *Multivariate data analysis*. New Jersey: Prentice Hall International, Inc.
- He N., Zhao J. & Archbold C.A. (2002). *Gender and police stress: A convergent and divergent impact of work environment, work-family conflict and stress coping mechanism of female and male police officers*. Policing: An International Journal of Police Strategies & Management, 25(4), 687-708

- Henseler, J., Ringle, C.M., & Sinkovics, R.R. (2009). *The use of partial least squares path modeling in international marketing*. New Challenges to International Marketing. *Advances in International Marketing*, 20, 277–319.
- Hofmann, D.A., & Tetrick, L.E. (2003). *Health and safety in organizations*. San Francisco, CA: Jossey-Bass.
- Hulland, J. (1999). *Use of partial least square (PLS) in strategic management research: A review of four recent studies*. *Strategic Management Journal* 20(2), 195-204.
- Ismail, A., Mohamed, H.A., Sulaiman, A.Z., Ismail, Z., & Wan Mahmood, W.N. (2010). *Relationship between work stress, coworker's social support, work stress and work interference with family conflict: An empirical study in Malaysia*. *International Business Management* 4(2), 76-83.
- Karasek, R.A. (1979). *Job demands, job decision latitude, and mental strain: Implications for job redesign*. *Administrative Science Quarterly*, 24(2), 285-308.
- Johnson S., Cooper C., Cartwright S. Donald I., Taylor P., & Millet C.(2006). *The experience of work-related stress across occupations*. *Journal of Managerial Psychology*, 20(2), 178-187
- Kozłusznik, M, Rodríguez, I, & Peiro, J.M. (2012). *Cross-national outcomes of stress appraisal*. *Cross Cultural Management*. 19(4), 507-525.
- Larson, L.L. (2004). *Internal auditors and job stress*. *Managerial Auditing Journal*, 19(9), 1119-1130.
- Leung M.Y., Chan Y.S.I., & Chen D. (2012). *Structural linear relationship between job stress, burnout, physiological stress and performance of construction managers*. *Engineering, Construction and Architectural Management*, 18(3), 312-328
- 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.
- Matteson, M.T. & Ivancevich, J.M. (2003). *Controlling work stress: Effective human resource and management Strategies*. San Francisco: Oxford.
- Mayer, E.A. (2000). *The neurobiology of stress and gastrointestinal disease*. *Gut*, 47, 861.
- Michael O., Court D., & Petal P. (2009). *Job stress and organizational commitment among mentoring coordinators*. *International Journal of Educational Management*, 23(3), 266-288
- Montgomery, D.C., Blodgett, J.G., & Barnes, J.H. (1996). *A model of financial securities sales persons' job stress*. *The Journal of Services Marketing* 10(3), 21-34.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Ringle, C. M., Wende, S. & Will, A. (2005) *SmartPLS 2.0 M3, June, available online at <http://www.smartpls.de>*
- Sekaran, U. (2003). *Research methods for business: A skill building approach*. New York: John Wiley & Sons, Inc.
- Selye, H. (1956). *The stress of life*. NY: McGraw-Hill.
- Selye, H. (1964). *From dream to discovery*. NY: McGraw-Hill.
- Selye, H. (1987). *Stress without distress*. London: Transworld.
- Sharpley, C.F., Reynolds, R., Acosta, A. & Dua, J.K. (1996). *The presence, nature and effects of job stress on physical and psychological health at a large Australian university*. *Journal of Educational Administration*, 34(4). 73-86.
- Sparks, K., & Cooper, C.L. (1999). *Occupational differences in the work-strain relationship: towards the use of situation specific models*. *Journal of Occupational and Organisational Psychology* 72, 219-29.

- Tatman, A.W., Hovesradt, A.J., Yelsma, P., Fenell, D.L. & Canfield, B.S. (2006). *Work and family conflict: An often overlooked issue in couple and family therapy*. Contemporary Family Therapy, 28(1), 39-51.
- Tourigny L., Baba V.V., & Wang X.W. (2010). *Stress episode in aviation: The case of China*. Cross Cultural management: An International Journal, 17(1), 62-78.
- Wickramasinghe V. (2012) *Supervisor support as a moderator between work schedule flexibility and job stress: Some empirical evidence from Sri Lanka*. International Journal of Workplace Health Management, 5(1), 44-55.
- Wright, L.L. (1996). *Qualitative international management research*. In Punnett, B.J., & Shenkar, O. (Eds.). Handbook for International Management Research (pp. 63-81). Oxford, UK: Blackwell.
- Yang, Z. (2009). *A study of corporate reputation's influence on customer loyalty based on PLS-SEM model*. International Business Research, 2(3), 28-35.
- Yu-Fei (Melissa), C., Ismail, A., Ahmad, R., & Kuek, T.Y. (2012). *Impacts of job stress characteristics on the workforce – organizational social support as the moderator*. South-Asia Journal of Marketing and Management Research, 2(3), 1-20.
- Yousef, D.A. (2002). *Job satisfaction as a mediator of the relationship between role stressors and organizational commitment: A study from an Arabic cultural perspective*. Journal of Managerial Psychology, 17(4), 250-266.